

5P424-14-0224

ANNEX A

STATEMENT OF WORK

HAZARD TREE REMOVAL ALONG PORTIONS OF HIGHWAY 93 SOUTH
KOOTENAY NATIONAL PARK OF CANADA

1.0 INTRODUCTION

1.1 Project Overview: Hazard Tree Removal to Mitigate Damage to Planned Wildlife Fence Installation

Highway 93 South links Highway 1 (the Trans-Canada Highway or TCH) at Castle Junction with Highway 95 at Radium Hot Springs, running for 104 km through Banff National Park, Kootenay National Park and the Village of Radium Hot Springs. Wildlife-vehicle collisions (WVCs) have long been noted as a source of safety and ecological concern on this highway. About 50 large mammals are killed annually within the 93 km of Kootenay National Park and many others go unreported. Most WVCs involve white-tailed deer, followed by moose. These collisions lead to concerns over human safety, the direct loss of wildlife, the potential for the highway to act as a barrier to wildlife movements, and the effects on visitor experience.

In addition to four or more animal underpass structures, wildlife barrier fencing will be constructed on the east and west side of Highway 93 over up to 9 kilometers of highway in the central portion of Kootenay National Park, in the vicinity of Kootenay Crossing Operations Base. Construction is planned for 2015.

Within the central portions of Kootenay National Park, a very high percentage of the mature lodgepole pine trees adjacent to the highway have been affected by mountain pine beetle and are dead or weakened. This is particularly the case across the south half of the project area, where pine occurs in pure stands or with a few trees of other species. Many affected trees have already fallen (figure 1), though a significant number of the remaining standing trees are likely to fall on the fence if left untreated. The problem of tree failure becomes amplified by the wind-prone nature of the area which can cause damage to fencing and associated infrastructure as well as poses risk to contractors installing or repairing the fence.

In a portion of the area south of Kootenay Crossing Operation center, all standing dead or dying trees, or live trees judged to pose a significant risk of falling toward the highway fence, will be removed within about 1.5 tree lengths (30 m) of the planned fence alignment and underpass construction sites. This zone extends 30 m into the forest (for most of the span) on the west side of the highway, due to the planned fence alignment at the forest edge. On the east side of the highway, the 30-m band will typically extend 20 m or less into the forest, and in some cases will not reach the forest due to the planned fence alignment approximately 10 meters from the forest edge.

North of Kootenay Crossing a 6 m wide corridor needs to be cut for the fence above the road where the fence cannot be placed at the base of the bank and some terracing and slope leveling will need to be done to forward and transport cut trees. All earth work will be done based on engineers approved route marked with stakes beforehand.

Creating Access trails, Removal of full-stem trees, transportation of logs, and management of associated harvesting debris is the work required for this contract.

This work will be performed by the successful contractor in order to minimize future hazard tree impacts to highway fencing and associated infrastructure in Kootenay National Park.

Low-impact harvesting & process -at-the-stump (ie. cut-to-length CTL), mechanical thinning is the only method that will be considered for this contract

to ensure that it is completed in the designated time period, to ensure the tree harvesting progress remains ahead of the fencing contractor progress, and that environmental protection and debris management considerations are met. *Low-impact*, under the terms of this contract, will be defined as high-floatation rubber tire (with or without the addition of specialized tracks for ground pressure reduction) and/or tracked equipment with limited compaction rating; with ground pressure limited to < 15psi *loaded*. Prospective bidders must detail the limited compaction and reduced impact characteristics of the mechanical equipment they intend to use for this project in their bid submission as per Annex "D". Specialized methodologies for harvesting trees using this equipment must also be provided by the Contractor in the tender submission.



Figure 1 Current average stand conditions in forest adjacent to the study area. Note windthrown trees and dead or declining standing trees. Almost all affected trees are lodgepole pines.

Contractors are encouraged to seek suitable market(s) for harvested wood in order to provide some cost-offset to the project. A significant proportion of the timber removed is expected to be merchantable to contractor-specified markets. All timber harvested under the scope of this project that is NOT merchantable to available markets to maximize cost recovery, will be designated as firewood for Parks Canada and forwarded to predetermined firewood decking site(s) within Kootenay National Park and included in the scope of the bid submitted. Firewood provisions are detailed in Section 3.2.2 and log decking restrictions can be found in Section 8.6. Total volume of non-merchantable wood (total volume minus merchantable volume) removed from each treatment area will be transported as per the terms of the contract (as *firewood*) and remain under ownership of Parks Canada.

1.2 Project Location

The work required for this contract is located within the boundaries of Kootenay National Park, British Columbia. Kootenay National Park is managed by Parks Canada and the park is bounded by the Alberta/BC boundary to the north and Radium Hot Springs, British Columbia to the south. The three geographic locations where tree harvesting is required are immediately adjacent to the Highway 93 right-of-way; the eight treatment areas include (from south to north):

1. 700m (20m wide) strip on the east side of the highway,
2. 800m (20m wide) strip on the east side of the highway

3. 1200m (20m wide) strip on the east side of the highway
4. 975m (30m wide) strip on the west side of the highway(adjacent to treatment area 3)
5. 690m (approx 6m wide) strip above Kootenay pond on E side of highway
6. 1050m (approx 6m wide) strip between S bends and Kootenay Valley Fire rd turnoff on E side of highway.
7. 150m (5m wide) strip on the west side of the highway
8. 265m (5m wide) strip on the west side of the highway

An overview of the work location is illustrated in Figure 2 below.

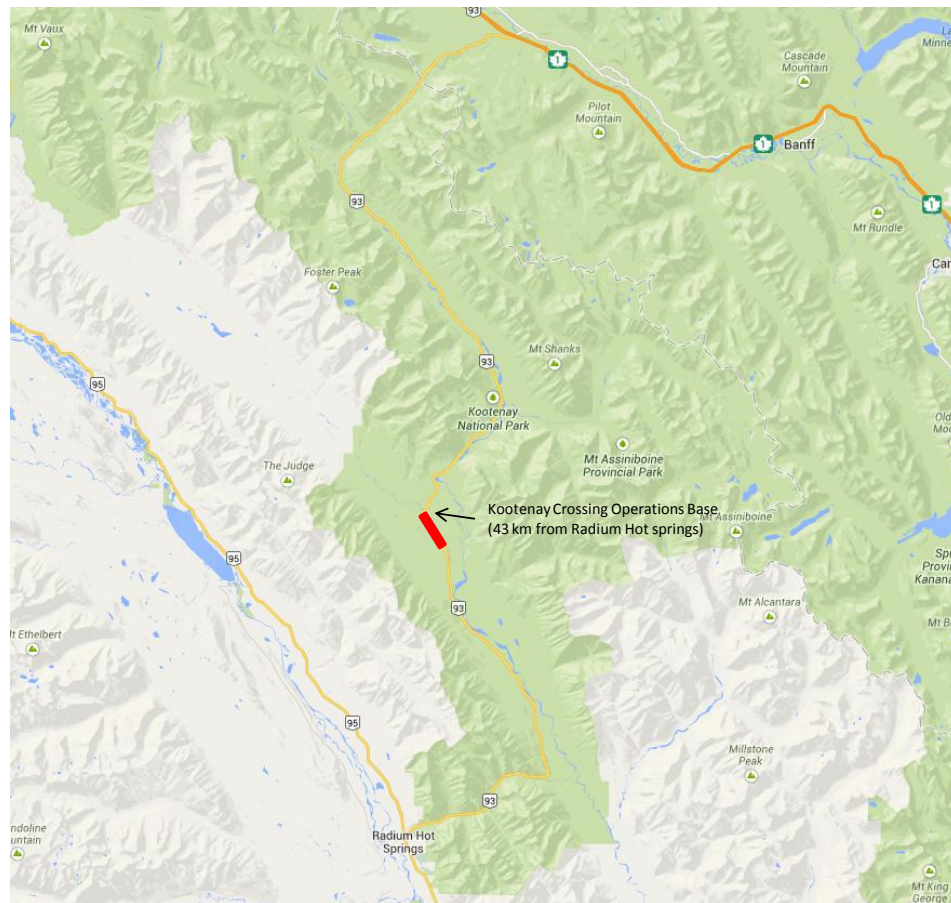


Figure 2 Project area location within Kootenay National Park of Canada.

2.0 PROJECT OBJECTIVES

The main objectives of this project are to (a) **remove select mature forest vegetation** in defined blocks as described in the attached specifications **to mitigate tree-fall hazard and possible damage to the planned highway wildlife fence** through sections of Kootenay National Park, and (b) clear and terrace a cutline for fence installation in areas where the fence alignment will be on currently forested land above the highway.

This project will undertake selective and/or complete mechanical harvesting of dead or dying mountain pine beetle affected Lodgepole pine trees and other over-mature hazard conifers in strategically identified locations between the end of the area harvested in 2013 north of the Dolly Varden day-use area and Hector Gorge. These areas have been identified by Parks Canada in the Environmental Impact Assessment: *Basic Impact Analysis, Highway 93S Tree Thinning Project, Kootenay National Park, File Number 2014-033k*

Under the terms of this contract the tree removal is to be completed between **December 2014 and March 15, 2015** (see section 4.0 for further details related to scheduling).

Section 3.0 of this document outlines the prescribed treatments to be implemented by the contractor within the scope of this project. The treatment is specifically defined to consider risk, ecological concerns, dominant tree species, density, age-class, and post-harvest longer-term management objectives. Primary tree species in the block are lodgepole pine (*Pinus contorta*), white/hybrid white spruce (*Picea glauca x engelmannii*) and douglas fir (*Pseudotsuga menziesii*). Primary species to be removed are Lodgepole pine and spruce.

Post-harvest slash management is very carefully defined in the plans and specifications of this project. Harvested and otherwise disturbed sites will require considerable clean-up of project-generated debris (tops, limbs, slash). Debris is to be piled in accordance with the restrictions outlined in Section 3.4. Parks Canada will burn piles at a later date.

Reclamation of disturbed sites is another critical component to this project and is defined in the specification in Section 5.0. The contractor will be responsible for fulfilling the reclamation requirements to the extent detailed in Section 5.0 on or before the end date of the contract.

3.0 PLANS AND SPECIFICATIONS for TREE REMOVAL

3.1 Harvesting Locations and Sites

3.1.1 Treatment Units South of Kootenay Crossing

The project area has been delineated into four(4) primary sites based on their general geographic location along the highway right-of-way within the National Park. Sites 1-3 are on the east side of the highway and are named from south to north, site 4 is adjacent to 3 on the west side of the highway. The thinning picks up and continues to the north of where the project finished last year. The primary focus for South of Kootenay Crossing is removal of hazardous trees. The project locations and tree removal parameters are defined below.

Site 1: South treatment unit; east side of highway R.O.W.

Linear Distance: 700 meters
Treatment area width: 20 meters
Orientation: east side of Highway 93
Treatable area: 1.4 ha

Site 2: Middle treatment unit; east side of highway R.O.W.

Linear Distance: 800 meters
Treatment area width: 20 meters
Orientation: east side of Highway 93
Treatable area: 1.6 ha

Site 3: Northeast treatment unit; South of Kootenay Crossing, east side of highway R.O.W.

Linear Distance: 1200 meters

Treatment area width: 20 meters
Orientation: east side of Highway 93
Treatable area: 2.4 ha

Site 4: Northwest treatment unit; South of Kootenay Crossing, west side of highway R.O.W.

Linear Distance: 975 meters
Treatment area width: 30 meters
Orientation: west side of Highway 93
Treatable area: 2.9 ha

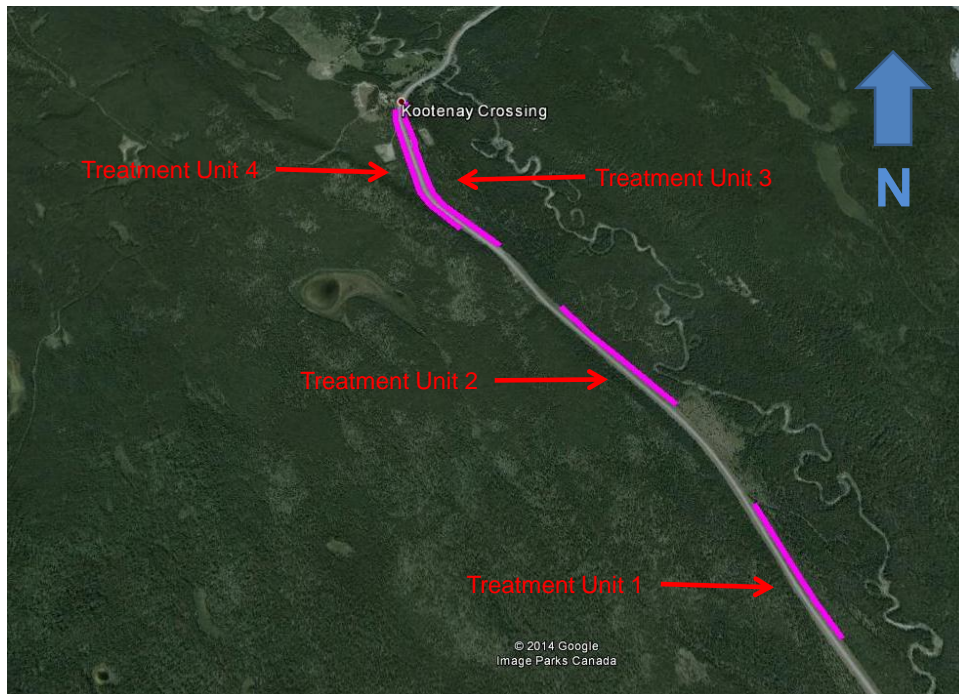


Figure 3 Treatment Areas South of Kootenay Crossing

3.1.2 Treatment Units North of Kootenay Crossing

The project area North of Kootenay Crossing has again been delineated into four(4) treatment areas based on the type of work required

Sites 5 & 6 are on the east side of the highway and are named from south to north, these TU's are characterized by a narrow clearing size and require a terraced rd to be built to accommodate both tree removal and fence placement. Sites 7 & 8 are shorter on west side of the highway and the primary focus in these TU's is to clear trees for fence placement.

The project locations and tree removal parameters are defined below.

Site 5: North of Kootenay Crossing, East side of highway R.O.W.

Linear Distance: 690 meters
Treatment area width: minimum width possible to allow passage of machinery on 6 m terraced tote road

Orientation: east side of Highway 93
Treatable area: 0.5 ha (approximate)

Site 6: North of Kootenay Crossing, East side of highway R.O.W.

Linear Distance: 1050 meters
Treatment area width: minimum width possible to allow passage of machinery on 6 m terraced tote road
Orientation: east side of Highway 93
Treatable area: 0.8 ha (estimate)

Site 7: North of Kootenay Crossing, West side of highway R.O.W.

Linear Distance: 150 meters
Treatment area width: 5 meters
Orientation: east side of Highway 93
Treatable area: 0.08 ha

Site 8: North of Kootenay Crossing, West side of highway R.O.W.

Linear Distance: 265 meters
Treatment area width: 5 meters
Orientation: east side of Highway 93
Treatable area: 0.1 ha

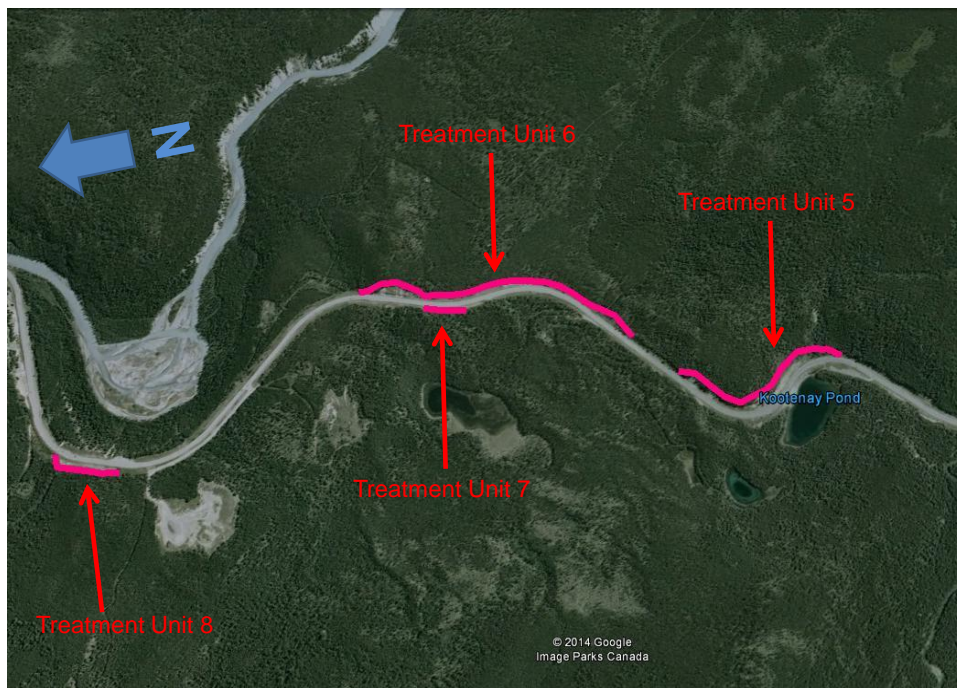


Figure 4 Treatment Areas North of Kootenay Crossing

3.2 Project Harvesting Specifications

This contract requires treatment of forest on both side of the Highway 93 South right-of-way.

Lodgepole pine and (white/hybrid) spruce will be the dominant removal species for the purposes of this contract. All dead, dying, and hazardously leaning live trees will be harvested. Dead or dying, under the terms

of this contract, will be defined as any pine tree that is at any stage of Mountain Pine Beetle affectedness (or other mortality agent) including dead gray or red stages including, but not limited to, 'green-attack' (tree infected this year or last; green canopy) if the tree has clearly not been successful in pitching-out the attacking beetles. Trees live or dead, with any clear indication of lean toward the proposed fence-line will also be removed.

Other tree species will be considered 'harvestable' under the terms of this contract only if the tree is dead, has obvious lean toward proposed fence-line, or in an advanced standing decay class and has potential to threaten the integrity of the fence or wildlife crossing structure(s). Any harvesting of dead or hazardous non-pine or spruce species will be at the discretion of the Parks Canada project manager. Pre-existing deadfall will be retained on the ground as coarse woody debris if not salvageable under the terms of this project.

The use of hand-falling techniques will be mandatory in environmentally sensitive areas, including near riparian areas and watercourses. Mechanical equipment will not be permitted to operate on ground within 15 meters of any stream or watercourse or within 15 meters of the perimeter of any riparian zone. In any treatment area requiring stream-crossing by mechanical equipment, proximity to watercourses and type and method of crossing structure will require the pre-approval of the Parks Canada project manager and Parks Canada Environmental Assessment office

Forwarding trails used for wood transport will not exceed a maximum width of 5 meters and will maintain a minimum spacing of 25 meters between trails. Existing roads, trails, rights-of-way, disturbed areas or natural forest openings will be used to lay out forwarding trails where feasible. Long-range forwarding in the open right-of-way will be discouraged to minimize disturbance and reclamation requirements and to limit the spread of existing invasive vegetation. Where aesthetic concerns are identified by the Parks Canada project manager, forwarding trails will be laid out in such form as to 'meander' in an effort to minimize open sight-lines along cleared trail networks. No sub-grading of organic material or mineral soil will be permissible during this project. No removal of stumps will be permitted. A minimum number of forwarding trails is encouraged for this project and forwarding trail locations will be based on equipment limitations and the minimization of ecological impacts. The Parks Canada project manager will reserve the right to pre-approve any and all forwarding trail locations.

In treatment areas 5 & 6 the opening width must be the minimum possible that will accommodate fencing machinery and harvesting equipment. Maximum width of the terraced tote trail must no larger than 6 m wide and it is strongly encouraged to make the tote trail as narrow as possible.

Refer to section 8.5 and 8.6 for restrictions to forwarding trails and truck loading methods.

3.2.1 Special Considerations - Harvesting

- Only *unsound* standing or fallen wood will be retained as coarse woody debris. If timber is not safely transportable due to decay condition, it will be retained as is where is on the ground or forwarded to burn piles. At the discretion of the project manager, a maximum 50 stems per hectare of felled or previously fallen (existing) decayed wood will be allowable to remain on the ground as coarse woody debris if non-transportable.
- Stump heights will be maintained at less than 30 cm for mechanically harvested timber, and less than 15 cm for hand-fallen timber. Stumps will not be removed from forwarding trails or landings.
- If the Contractor deems any standing dead timber a safety hazard for its workers, they may remove such timber.

- All harvested trees will be limbed, topped and cut to length at the stump, using wood processors equipped with high flotation rubber tires, with or without low pressure assistance tracks (ie. Ecotracks) as required to meet ground pressure limitations. Trees and forest debris will be transported to the nearest burn pile site with forwarding equipment (see section 3.3 *Debris Management*).
- Should weather conditions be unusually wet and lead to rapid saturation of soils, the project manager will reserve the right to temporarily implement load capacity reductions on forwarding equipment on forwarding trails until which time the soils no longer become prone to increased compaction.
- Trucking load weight restrictions will be applied in the identical manner as on Alberta Provincial and/or British Columbia roads.
- No mobile camps or accommodation facilities will be permitted within the Park. The Contractor is responsible for all accommodation required for the Contractor's personnel and must use existing accommodation.
- The Contractor will take all necessary measures to ensure that no trees, other vegetation or soils outside the designated flagged areas are damaged or removed.
- When rot is encountered in the butt of a tree's bole, the procedures and standards for determination of sound wood shall be identical to those set by the Province of British Columbia.
- Submission of tender is deemed to be confirmation that the tenderer has inspected the sites and is conversant with all conditions affecting execution and completion of the Work. Failure to do so will not relieve the Contractor of any obligations under this contract.

3.2.2 Special Considerations: Firewood Provision of non-Merchantable Timber

In keeping with Parks Canada's *Surplus Timber Directive (2002)*, all non-merchantable but *sound* wood harvested within the scope of this project will be utilized as firewood by Parks Canada. All wood salvaged as firewood from treatment sites will remain the property of Parks Canada and will be delivered, where required by the terms defined in this contract, in full-length or short-log form, to a designated firewood decking site identified by Parks Canada and outlined in figure 5 and listed below:

- Redstreak Campground firewood storage site (vehicle access and turnaround ability), approx **38 kms** south of project site above the town of Radium Hot Springs, adjacent to Redstreak campground.

All sound wood greater than 4" diameter will be salvaged for firewood under the terms of this contract. Any unsound wood not suitable for transport (due to decay/decomposition/breakage) will be forwarded to burn piles or retained on the ground as coarse woody debris (see 3.4 *Debris Management* for woody debris retention parameters).

All costs associated with the harvesting of timber, including but not limited to log-hauling and transportation costs (including highway traffic safety), will be the responsibility of the Contractor and should be appropriately considered in the overall bid submission.

Any requirements to process full-length log decks into firewood length will be considered separate from and outside the scope of this contract.

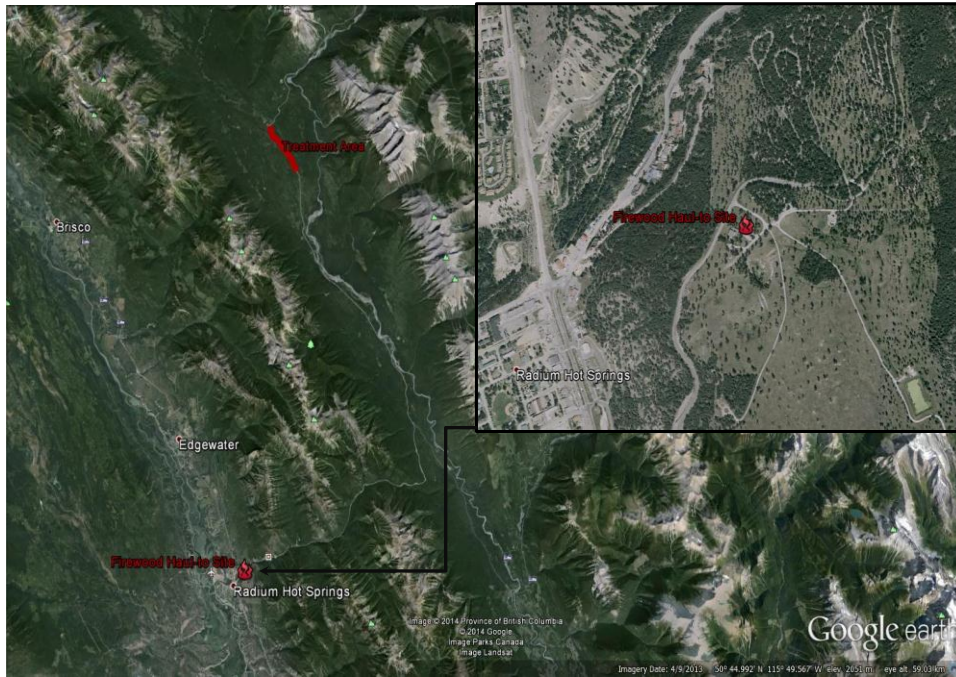


Figure 5. Firewood haul-to site, Redstreak Campground area, KNP.

3.3 Debris Management Specifications

Limbs and tops of harvested trees will be piled for later burning as per the specifications below.

All associated debris greater than 5 cm in diameter will be defined as debris under the terms of this contract. Where a given volume of coarse woody debris exists on the forest floor in pre-treatment condition, an acceptable volume of coarse woody debris may be retained post-harvest at the discretion of the Parks Canada project manager; where feasible and where critical wildlife habitat retention is a concern.

As indicated in Section 3.3.1, up to 50 felled, full-stem tree boles per hectare of treatment area will be permitted to remain on the ground ONLY when wood is unsound or where sound wood is in inaccessible terrain within the project area. This caveat will allow for a natural volume of coarse woody debris to be maintained post-harvest if there was a pre-existing natural condition, and will allow for the retention of felled trees as coarse woody debris in areas of micro-topography which are not accessible to harvesting or recovery equipment. Debris management may require some full stem trees to be burned as debris if the area is not accessible to facilitate removal of the tree and/or there becomes an excess of 50 boles per hectare felled or unsound wood on the ground. Under the terms of this contract, a tree *bole* will be defined as the full length of the woody mass (trunk) of any single tree stem.

A maximum of one burn pile per 50 linear meters will be allowable in each treatment area (on either side of highway). Therefore maximum number of allowable piles will be:

- Treatment Unit 1- 14 piles
- Treatment Unit 2 - 16 piles
- Treatment Unit 3 - 24 piles
- Treatment Unit 4- 19 piles

Treatment Unit 5 – 14 piles
Treatment Unit 6 – 21 piles
Treatment Unit 7 – 3 piles
Treatment Unit 8 – 5 piles

Burn piles will not exceed the maximum dimensions of 4 meters in depth and 4 meters in diameter, with the ideal height to width ratio of 1:1. Burn piles will not be established within 4 meters of standing retained timber and will be established within the treatment area not within 10 meters of the highway fence line. Burn piles will not be permitted within 30 meters of any riparian area or watercourse. Any allowance of additional burn piles (if required) will be at the discretion of the Parks Canada project manager.

Parks Canada will ensure burn piles are constructed to the specifications outlined in this terms of the contract. Parks Canada will ignite piles at a later date (once snow cover is adequate in the fall) and burning of piles will be outside the scope of this contract.

Chipping of debris will also be considered a viable methodology for the purposes of debris management, though designated landings will not be available. Chipped debris generated within the project area will be removed from site by the contractor or broadcast across the project area to a depth not exceed a maximum depth of 2.5 cm. Chip piles will also not be permitted within 30 meters of any riparian area or watercourse.

3.4 Highway 93 Traffic Control Requirement

The Contractor will be responsible for provision of highway safety and necessary traffic control for any roadside operations within the scope of the harvesting project. The contractor will be responsible for all aspects of traffic management (including speed reduction and flag persons as required). It is anticipated that, due to the grade of the right-of-way preventing truck access to the majority of the treatment area, roadside loading may be a necessary option.

Contractors should detail their proposed methods for log loading and transport in their tender submission AND will be expected to prepare a highway traffic safety plan prior to project start, to be approved and signed by the Parks Canada project manager.

Loading of trucks on roadsides will not be permitted on Fridays after 1200 noon, or at any time on weekends (Saturday/Sunday) due to normal weekend traffic volume on Highway 93 South.

During the course of this project, it will be mandatory for the Contractor to communicate to Parks Canada their detailed operational plans on a daily basis, 24 hours in advance.

Parks Canada will not bear any costs to this project incurred as the result of highway traffic safety during the length of the contract nor flag persons required for safety and traffic coordination through the project areas. All highway safety provision costs will be the sole responsibility of the contractor.

Parks Canada will ensure a designate is on-site during the preliminary safety meeting to provide additional information.

4.0 WORK SCHEDULE

The harvesting component of this project is scheduled for early winter of 2014.

The ground is expected to be mostly dry this time of year at this elevation and geographic location. The project may be rescheduled or stopped or payload restrictions placed on heavy equipment at the discretion of

the Parks Canada project manager or designate in the event of excessive precipitation (>10mm in 24hr period) to protect soils and vegetation from excessive compaction.

The duration of the project is expected be four to six weeks. The project must be completed no later than **March 15, 2015** – including any debris management and reclamation work that will apply in the contract.

Parks Canada will reserve the right to limit work days to daylight hours [0700 – 1900 hrs] as and where required in certain areas based on wildlife considerations and potential for public disturbance.

5.0 RECLAMATION REQUIREMENTS

Reclamation of disturbed sites is key to meeting project objectives;

The clean-up and rehabilitation of disturbed sites during the course of the project are as follows:

- Tops and limbs will be piled on-site as defined by parameters in Section 3.3
- Forwarding trails reclaimed to a natural state using organic material and coarse woody debris and reseeded where disruption to mineral soil has occurred (Parks Canada to provide proper seed mix)(exception of TU 5&6 tote roads)
- Deep rutting and excessive compaction from machinery to a depth greater than 5cm will be scarified with organic material and reclaimed as above (exception of TU 5&6 tote roads)
- Stumps will be flush-cut as close to the ground as possible (considering mechanical limits) as per the guidelines in Section 3.2.1
- All areas with disruption of mineral soil, *excluding* all burn pile locations, will be reseeded at the cost of the Contractor. Parks Canada will provide the native seed to the Contractor for such purposes to ensure the correct seed mixture is utilized. (exception of TU 5&6 tote roads)

In addition;

- Any garbage including but not limited to oil containers, food garbage and miscellaneous waste will be collected in a suitable containment device provided by the Contractor and removed from sites on a daily basis. The Contractor will ensure all garbage items are completely removed from work sites before the end of the contract. Parks Canada reserves the right to impose fines for unmanaged garbage during the course of the project.

Site rehabilitation/restoration will be completed within the contract time parameters.

6.0 ADDITIONAL CONTRACTOR RESPONSIBILITIES

The range of contractor responsibilities include, but are not limited to:

- Cutting and removal of timber in accordance with Parks Canada's terms of reference, the Environmental Assessment, WCB regulations, and environmental safety standards.
- Transportation of timber to market (mill) and/or designated decked-firewood storage areas within Kootenay National Park
- Site clean-up and rehabilitation to project specifications (see section 5.0)
- Sourcing and hiring highway traffic safety provider/ other (see Section 3.4)
- Ensuring all sub-contractors are familiar with the Specifications and Safety Protocols
- Various administrative roles specified in the following (in no particular order of importance):

Within 72 hours of notification of award of the contract, the contractor will review the following items in consultation with the Parks Canada project manager:

- The Basic Impact Analysis
- The methodology for managing the slash, forest debris and burn piles; density and network of forwarding trails; decking and landing sites, if applicable.
- Details of log transportation and destination including mill(s) and designated (firewood) storage locations and their volume and access limitations.
- Methods for mitigating environmental impacts.

Any changes to these items must have the prior approval of the Parks Canada project manager or designate.

The Contractor is responsible for all costs associated with this work. This includes the provision of and payment for all labour, materials (seed for reclamation to be supplied by Parks Canada), equipment, supplies, accommodation, transportation and hauling of timber to designated in-park facilities and all other services necessary for proper performance of the work. Additional responsibilities of the contractor will include:

- 6.1 Ensuring that all personnel working on this project attend an on-site project orientation meeting conducted by Parks Canada prior to commencement of work. This orientation session is approximately 1.5 hour duration with the Project Manager to ensure safety of work site, answer questions of project specifications, and understanding of National Park regulations.
- 6.2 Conducting an on-site safety briefing prior to commencing work for all select Parks Canada personnel, other area contractors and subcontractors who will be working in proximity to the Contractor's equipment and machinery.
- 6.3 Attending weekly meetings with the Project Manager to discuss work schedules, timelines and any problems encountered.
- 6.4 Conducting a pre-work site inspection of each operational area and identify any concerns to the Parks Canada project manager.
- 6.5 Employing and identifying a responsible supervisor and the necessary assistants who shall be in attendance at the work site at all times during progress of the work.
- 6.6 Maintaining, for the duration of the contract, insurance for all phases of harvesting and transport of timber, in accordance with Insurance Conditions attached, as follows:
 - commercial general liability - \$5,000,000
 - automobile and other vehicular coverage - \$2,000,000 per accident minimum
 - workers' compensation or employer's liability insurance
- 6.7 In addition to contractual obligations, any park facilities, private leaseholder facilities or other infrastructure damaged during the project will be repaired or replaced at the expense of the contractor.
- 6.8 Providing a minimum of 24 hours notice to the Project Manager if contract highway flagperson controllers are required on-site (see Section 3.4).
- 6.9 The Contractor shall ensure that all work is performed in accordance with the ordinances, laws, rules and regulations set out in the Canada National Parks Act. The Contractor shall comply with the Dangerous Goods Act and Regulations for Workplace Hazardous Materials Information System (WHMIS). Any materials incorporated into project must comply with Act and Regulations.

- 6.10 The Contractor shall also observe construction safety measures of the Federal Government, Provincial Government and Provincial Worker's Compensation Board. In case of conflict or discrepancy, the more stringent requirements shall apply.
- 6.11 The Contractor shall obtain a Kootenay National Park Business Licence and Work Vehicle Passes for each fiscal operating period over the life of the contract.
- 6.12 Contractor will obtain a Restricted Activity Permit provided by Parks Canada for the scope of work.
- 6.13 The Contractor shall comply with the special considerations and environmental mitigations noted in section 8.0 of these Plans and Specifications and those identified in the Environmental Screening Report for the project: Environmental Impact Assessment: *Basic Impact Analysis, Highway 93S Wildlife Crossing Project, Kootenay National Park*, Parks Canada file # 2014-0033(K).
- 6.14 Parks Canada has the authority to charge violators under the Canada National Parks Act. Failure to comply with the environmental protection measures as identified in these Plans and Specifications and the Environmental Assessment report may result in work being suspended pending rectification of the problem.
- 6.15 Ensuring all fuel storage tanks are located in areas well removed from any watercourse including both standing and moving water as per the environmental restrictions and controls outlined in this document. An impervious berm shall be constructed around the tanks and any other potential spill areas. The berm shall be capable of holding 110% of tank storage volumes.
- 6.16 Maintaining a sufficient number of spill kits on the project site to handle any potential spills.
- 6.17 Complying with all directions given by the Parks Canada Project Manager.
- 6.18 Maintaining daily operational contacts with the Parks Canada project manager and ensuring there is one Contractor representative on site at all times that is competent, qualified, experienced and trained in all aspects of this contract. This individual must be responsible for training, orientation and proper performance of his/her employees and has the authority to receive, on behalf of the Contractor, any order, direction or other communication that may be given under the contract.
- 6.19 Ensuring that all vehicles and heavy equipment are appropriately licensed, maintained, refueled, and repaired at designated areas.
- 6.20 Ensuring that all equipment has been thoroughly cleaned and pressure washed so that it does not contain or carry any seeds or vegetation from outside of the Park prior to entering the Park.
- 6.21 Ensure that no decked or otherwise salvageable wood included under the scope of this contract is left in the project area after the project completion date indicated in these terms, unless otherwise determined in the accepted bid submitted by the contractor and at the ultimate approval by the Parks Canada Project Manager.
- 6.22 Working with Parks Canada to minimize conflicts with Park users and ensure traffic safety by adhering to designated haul routes through populated areas, complying with work day restrictions, and maintaining signs or notices provided by Parks Canada. In the interest of public safety, hauling from certain areas may be limited to Monday through Thursday with no hauling on holidays or weekends at the discretion of the Parks Canada project manager.
- 6.23 Supplying, erecting, moving and maintaining all traffic control devices, highway flagpersons, regulatory and warning signs, and other safety measures and providing staff to ensure safe passage of all traffic over the length of the project. Legal (Ministry of Transportation) sign layout is available from Parks Canada on request.

- 6.23.1 Providing security for all of their machinery and equipment while on site; Loss to or damage of any of the Contractor's vehicles, equipment, supplies, etc. while on Parks Canada's property or in performance of this contract is the Contractor responsibility.
- 6.24 Obtaining an Alberta/BC log transport form from the Parks Canada Project manager or designate prior to each truckload of wood products leaving the work area. The Parks Canada representative on-site will sign, review and withhold a copy of all haul-slips used under the terms of this contract.
- 6.25 Clearing of snow or packing of snow on paved or unpaved haul roads and project access roads and periodic maintenance of winter roads (excluding major highways and roadways open to the public).
- 6.26 Responsible for arrangement and cost of temporary relocation of any utilities, (i.e. phone or power) if required.
- 6.27 Contractor is responsible for all post-project environmental reclamation and seeding on haul roads, forwarding trails and landing sites using native seed approved and provided by Parks Canada.
- 6.28 Contractor may, at their own expense, have a timber cruise prepared for the project areas.
- 6.29 Submitting a safety plan within a week of contract award and/or before the start of any work.

7.0 ADDITIONAL PARKS CANADA'S RESPONSIBILITIES

In addition to other responsibilities detailed in the Specifications of this document, Parks Canada will be responsible for the following:

- 7.1 Prior to commencement of work by the Contractor:
- Arranging for and conducting an on-site meeting for the Contractor's personnel describing the project.
 - Identifying the role of the Parks Canada Project Manager and/or Environmental Surveillance Officer
 - Providing information on pertinent National Park Regulations.
 - Identifying routes, landing and/or burn pile locations, equipment exclusion areas, stream crossings, sensitive environmental or cultural areas.
 - Providing information pertaining to toxic spill responses; and discussing other relevant issues.
- 7.2 Meeting with the successful contractor to review, modify and approve within 72 hours of notification of award of the contract, the following items as submitted in the proposal:
- Methodology for managing the slash, forest debris and burn piles; density and network of forwarding trails.
 - Details on transportation and specifications of firewood products.
 - Methods for mitigating environmental impact.
- 7.3 Identifying to the Contractor, the Parks Canada personnel who will be working in proximity to the contract equipment and machinery and ensuring all identified personnel attend the on-site safety briefing provided by the Contractor.

- 7.4 Designating accessible landing areas (where applicable) and working with the Contractor to identify and approve an acceptable access plan; promptly responding to requests from the Contractor for any additional log decking areas and/or forwarding trails.
- 7.5 Working with the Contractor to minimize conflicts with Park visitors and staff and Radium Hot Springs townsite residents. When necessary to ensure safe operations and the safety of the public and park staff, Parks Canada will temporarily close trails, roadways and/or reroute traffic. Where these concerns arise, every effort will be made to schedule operations during periods of less use (weekdays rather than weekends, during daylight hours). Parks Canada will notify the public as required.
- 7.6 Instituting, posting, managing and enforcing public area closures of the designated work sites for the duration of each operational period at work sites.
- 7.8 Provision of necessary maps and diagrams of the contract area, as required and requested by the Contractor.
- 7.9 Provision of a Restricted Activity Permit in the Contractor's name for the duration of the project in Kootenay National Park.
- 7.10 Ensuring that the Parks Canada Project Manager or designate is available at all times when the Contractor is performing work on-site and responding promptly when consultation is required by the Contractor.
- 7.11 Monitoring the Contractor's performance to ensure these Specifications and all other directions are being followed. Parks Canada reserves the right to stop the Contractor's work in order to rectify any problem situations. Parks Canada will not unreasonably invoke a stop work order. Parks Canada will not be responsible for any costs incurred as a result of a work stoppage.
- 7.12 Flagging the perimeter of the project area, thinning block boundaries, sensitive environmental or cultural areas, equipment exclusion areas and marking of leave trees in designated prescription "Training areas" (if applicable).
- 7.13 Providing the Contractor with log transport forms for each load of wood products leaving the work area.
- 7.14 Providing the Contractor with a legal timber mark and hammers for marking timber prior to leaving the work site, if and as required.

8.0 AVOIDANCE OF ENVIRONMENTAL IMPACTS

The Basic Impact Assessment for this project was completed in fall of 2014. The Canadian Environmental Assessment Act requires that both the Contractor and Parks Canada comply with the mitigative measures contained in this assessment. A summary of environmental restrictions and requirements that apply to this contract are summarized below and are a condition of the Contract Specifications. They are designed to minimize the environmental impact of this project. It is recommended that the contractor read and be familiar with the Impact analysis, as this section includes only a general overview of details contained within the document.

8.1 General Protection Measures

- Industry protocols for flagging the outer perimeter of work sectors, and areas that are not to be entered will be followed in this project.
- An area closure(s) will restrict unauthorized people from entering the work area during the course of the project. The public will be informed of closures and closures will be enforced by Parks Canada.
- Both parties will agree upon all primary equipment, log hauling, and access routes. Maps of these will be provided by Parks Canada prior to initiation of work if and as required.
- Tree boles will be limbed and cut to length (processed) either at the stump or at the landing sites. Boles and forest debris will be forwarded to designated landings and burn sites.
- The Contractor will be required to reduce stumps to the minimum that can be achieved by the equipment (30 centimeters or less) to preserve aesthetic value.
- To help mitigate for any potential short-term disturbance to wildlife movement through, and habitat use near, the project site, all work will be conducted during daylight hours only. Work will cease if carnivores are spotted in the vicinity of the work site, until the animals are well out of the area. All wildlife sightings will be reported to the surveillance officer.
- All wildlife sightings of significance will be reported to the Environmental Surveillance Officer (ESO) or Project Manager (PM), and;

All trees observed by the Contractor or Parks Canada representative to require removal under the terms of this contract and contain visible cavity nests will be utilized as stub trees, and;

Any tree containing evidence of nests containing eagles, ospreys, or herons will be reported immediately to the Parks Canada project manager and will not be felled without Parks Canada approval.

- Any tree deemed by Parks Canada to be of special significance to wildlife, and is a hazard to the fence-line as per the terms of this contract, will be stubbed no less than 5 meters from the ground or at a height in compliance with WCB regulations if the tree is deemed unsafe to workers.
- To avoid importing noxious or restricted weed species, **the Contractor will ensure that all equipment to be used off paved roads will be thoroughly pressure washed before entering the Park.** Equipment will be inspected by Parks Canada prior to being deployed in the field and further cleansing may be required.
- Forwarding trails shall be laid out to avoid habitat trees, live trees not targeted for removal under the terms of this contract, and stream crossings wherever possible. Known habitat trees and streams will be flagged for identification by Parks Canada.
- Juvenile pine/spruce and all age classes of other tree species as well as non-hazardous, live mature pine/spruce will be retained unless designated a hazard tree under the terms of this contract.
- Disturbance of low shrub/grass species will be minimized.
- The Contractor is responsible for post project environmental reclamation and seeding on haul roads, forwarding trails, burn piles, lands and any other disturbed sites.
- No on-site disposal or storage of food or other waste garbage will be permitted.

- Parks Canada will ensure that a Parks Canada representative designated to this project is available to the Contractor at all times.

8.2 Protection of Cultural Resources

To protect cultural resources, all significant sites identified in the Archeological Assessment for the project area and located within any designated work site will be marked and flagged by Parks Canada Agency personnel. Areas within 10 meters of cultural sites will be designated as no work zones (*note – to date, no known sites of concern have been identified*).

All cultural resources (previously unidentified) and/or evidence of any archaeological/cultural resource artifacts including any trees observed to possess cultural significance or markings of any kind will be reported to the Environmental Surveillance Officer (ESO) or Project Manager (PM).

8.3 Protection of Roads and Motorists

Safety for motorists on Highway 93 through the south end of Kootenay Park is of utmost importance. Appropriate access routes to and from the work site, signage, speed limits and flagging will be used to ensure vehicular safety when trucks and equipment are entering or departing onto these roadways. The contractor will be required to ensure signage is of legal standard and clearly visible and that access closures are in place at the end of workday. Any road closures put in place must be done so with consultation with the Project Manager.

Travel by machinery fitted with chains or grommets on asphalt surfaces will not be permitted and seasonal weight restrictions will be respected as required.

8.4 Operations near Riparian Areas

Riparian areas will be avoided during this project unless requested by the Project Manager. If there is uncertainty about working close to a riparian area, the Contractor will consult with the Project Manager. As per the Environmental Impact Assessment for this project, heavy machinery will not be permitted within 15 meters of any riparian area or watercourse and applies to all mechanical harvesting and reclamation equipment.

No stream crossings will be permitted unless approved by both the Parks Canada project manager and Parks Canada Environmental Assessment office.

Falling will be in a favorable direction away from riparian zones so as to limit disturbance in and on the periphery of these area.

No refueling of hand equipment and/or heavy machinery will occur within 30m of a riparian area or watercourse. All refueling areas will have spill containment capability relative to the volume of fuel available.

No burning (or chipping) of debris will occur within the 30m riparian buffer zone.

8.5 Harvesting Access Routes (Forwarding Trails)

Forwarding trails shall maintain a distance greater than 25 meters apart and will meander as much as possible to reduce aesthetic impacts and minimize the potential for undesired public access

throughout the treatment areas. Typically, this will mean that each treatment area will be limited to a single forwarding trail. Final location of any forwarding trail will require pre-approval of the Parks Canada project manager.

The Contractor is responsible for the hauling of snow, branches, gravel or chips as well repairing potholes and icing unpaved trails to further insulate and pad the ground if and as required.

Stump removal will ONLY be permitted on the terraced tote road in treatment areas 5 and 6.

Inside treatment areas 5 & 6 terraced tote road is required, maximum allowable width of tote road is 6 m. This Tote road is not to be reclaimed as it is required for fence construction and will be seeded at a later date. Final location is to be determined and staked by the project Engineer and strictly adhered to insure soil and slope integrity. Where slope terracing needs to be done for the tote road installation of drainage structures and use of soil-stabilization practices is required to minimize runoff and erosion.

8.6 Log Decks and Landings

The number of log deck and roadside loading areas established will be limited to a **maximum of one(1)** per treatment area for **(8 total)**; though fewer decks or loading areas is more desirable. Existing disturbed areas will be used where feasible. Log deck/roadside truck loading locations will be chosen and marked by Parks Canada in consultation with the Contractor, and will avoid all ecologically sensitive and culturally significant sites. The Contractor will be responsible for marking the log decks as per Highway Safety Regulations to mitigate public safety on the roadside.

No landings will be established on this project in order to minimize disturbance and ecological impacts within the highway right-of-way.

8.7 Log Transport

Transport of logs on public highways will be in accordance with the Provincial Highway Traffic Acts (Alberta and British Columbia) and applicable forestry regulations.

8.8 Equipment Maintenance and Servicing

The Contractor shall inspect equipment daily for leaks and stressed hoses, perform preventative repairs, ensure that appropriate spill kits are kept on-site and report any spills immediately to Parks Canada (403-762-4506). All machinery will have an emergency contact list.

Repairs requiring draining or replacement of petrochemical-based fluids will be conducted over impervious containment devices or on paved surfaces.

Re-fuelling of machinery from approved slip-tanks (i.e. tanks equipped with automatic shut-off nozzles and break-away couplings) is permitted in the field over impervious spill containment berms located more than 30 meters from any water body or wetland.

Fuel for chainsaws (25 liters jugs or less) may be kept on site, but within spill containment berms. In the event of fuel or lubricant spills, absorbent material will be used for clean up and any contaminated soils removed to an approved landfill designated by Parks Canada. Equipment will be parked on containment material overnight to detect and prevent leaks from leaching into soils. Used fluids and other hazardous wastes will not be disposed of on site.

Toxic spill responses will be addressed in Contractor briefings and responsibilities for coordinating and conducting responses identified.