

**Statement of Work**  
5P468-22-0193  
Signal Mountain Fire Guard – Jasper National Park

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**Appendix A – Timber Harvest Site Plan Maps**

**Appendix B – Best Management Practices (BMP)- Fire Management Operations (March 2017)**

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## 1. GENERAL INFORMATION

### 1.1 Background

Jasper National Park experienced an epidemic Mountain Pine Beetle (MPB) outbreak creating a marked increase in dead-standing trees throughout the park. This has increased the fire hazard posing a direct threat to visitors, the town of Jasper, its residents, businesses, and infrastructure.

In order to mitigate the increased hazard of MPB-affected forest surrounding the Jasper townsite, and protect the community and critical infrastructure, ongoing Wildfire Risk Reduction activities and strategies have been and will continue to be implemented.

Parks Canada requires a logging contractor to complete mechanical tree removal in order to establish a control line from the Keith Lakes area on Maligne Road to the southwest facing scree slopes of Signal Mountain. As logs will not be transported to mill, a built access road will not be required. The proposed guard can be accessed via the harvested unit that was created in the winter of 2022 along Maligne Road.

The intent of this project is to complete fuel reduction linking natural wet areas and less fire-receptive deciduous stands along the base of the slopes of Signal Mountain by clearing conifer fuels to ensure a complete guard in a linear orientation. The guard will not resemble a wide, fuel-free clearing like the Pyramid Bench community fire guard, it will simply remove receptive fuels near the base of the main slope and reinforce fire resistant and fire proof areas.

### 1.2 Project Objectives

1. Establishment of a control line from the Keith Lakes area on Maligne Road to the scree slopes of Signal Mountain to improve wildland fire fighting effectiveness at the junction of the Maligne and Athabasca valleys.
2. This project will reduce the risk of wildfire losses to the town of Jasper by creating a working feature for containing fire spread from the south Athabasca valley and may provide a useful feature for future prescribed fires.
3. The work will require significant care to minimize disturbance to soils and non-target live surrounding vegetation. As with all projects in National Parks, work needs to maintain the ecological and cultural integrity of the site.

### 1.3 Project Scope

1. This Scope of Work includes **key elements** (as outlined in the detailed scope of work):
  - Mechanical clearing of all trees along the proposed fire-guard line and heli-spots. This includes both live conifer trees as well as dead-standing MPB-attacked trees directly along and adjacent to the proposed fireguard. This includes felling all MPB killed trees within reach of equipment without additional ground access but leaving understory conifer adjacent to the line for future hand treatment.
  - Limbing harvested trees and placing all debris >10cm diameter flat to the ground on the uphill side of the guard to be retained as Coarse Woody Debris (CWD). CWD is to be left in situ in order to support ecological processes and prevent recreational use of the guard.

- Piling and burning of all Fine Woody Debris (FWD) <10cm diameter produced from mechanical tree clearing.
- Installation (and removal upon project completion) of designated skid crossing structures such as skid bridges or rigmats at creek crossings.

## 1.4 Project Schedule & Timelines

### 1. Construction Duration

- Work is anticipated to commence on or before, January 15<sup>th</sup> 2023 and **MUST** be completed by March 15<sup>th</sup>, 2023 in order to meet fiscal year-end deadlines and minimize soil disturbance during the spring thaw. Mechanical tree removal **MUST** occur during winter when the ground is frozen and snow covered.

### 2. Hours of Operation

- Work can be performed 7 days a week.
- Work outside of daylight hours will be permitted for this project, but still must be preapproved by the Departmental Representative to ensure procedures minimize negative effects on wildlife and visitors.

### 3. Project Schedule

- The contractor must prepare a schedule in the form of a Gantt chart showing the primary tasks and timelines associated with the work. This schedule must be submitted to the Departmental Representative one week prior to the commencement of any work.
- A contingency plan for equipment breakdowns is a requirement of this contract. Unserviceable equipment must be replaced within 72 hours.
- Ensure the project schedule includes at a minimum, the following milestones as applicable:
  - Mobilization
  - Tree removal
  - Demobilization

### 4. Critical Environmental Timing Windows

- The following are the critical environmental timing windows:
  - April 19 to August 24 - Migratory Bird Nesting Protection Period (Migratory Birds Convention Act);
  - Frozen soils and/or snowpack are a requirement for this project;
  - Climate change has resulted in some mid-winter, above-freezing days that will not allow the use of heavy equipment due to soil damage. January thru March provides the best opportunity for taking advantage of frozen soils and snow cover. Short periods of work stoppage or soil protection with limbs and tree tops may still be required during this period and the contractor should be prepared for possible interrupted heavy equipment operations.

## 1.5 Constraints

### 1. Equipment:

- Low ground pressure equipment including feller buncher, forwarder, spider hoe and single-grip processors will be acceptable for this project;
- Metal tracked equipment (or equipment fitted with chains) cannot be operated on asphalt surfaces (such as Maligne Road) without measures to avoid any damage and scuffing; Oversized vehicles over 4,150 kg are prohibited from travelling on the Icefields parkway.

## **2. Access Restrictions:**

- Access to Maligne Road is via the Moberly Bridge which has both height and weight restrictions.
- A buried telephone cable is located along the south side of Maligne road, therefore no excavation will be permitted. The installation of rigmats and/or packing of snow into the ditch may be required to bridge the ditchline and facilitate the offloading of forestry equipment onto the existing landing site along Maligne road;
- Project work will occur within a Wildlife Closure Area. PCA will ensure that a Restricted Activity Permit (RAP) is issued to the contractor.
- The designated access trail route from the existing landing area to the beginning of the fire guard crosses a public use trail. The cleaning of debris and repair of any damage to this trail upon project completion is a contractor responsibility.
- Operator will ensure safe road access/egress for their operations with signage and flagging as required for this 60kph maximum speed secondary road.

## **3. Debris Management:**

- All fine woody debris material must be piled and burned in the winter when the site is snow covered. Mulching is not being considered for this project.
- A burn permit must be obtained to allow for burning of debris.
- Smaller wood debris (<10cm diameter), primarily limbs and tree tops from harvesting activities, are to be managed such that they are not compacted into the duff. They must be gathered, burned or hauled to an accepted burn location.
- Debris management will be concurrent with harvesting/processing so that debris is not buried in the snow.
- On previously undisturbed sites within the unit, small burn piles are permitted but must not exceed 4m diameter and 4m in height and **cannot** contain woody debris larger than 10cm diameter to avoid ground scorching.
- Piles must be tended and rolled in to ensure full consumption of materials.
- Smoldering ember piles will be allowed to burn overnight unmonitored, but only during appropriate Fire Danger rating levels.
- Contractor must limit the number of piles created. Burn pile density must not exceed one open pile per 200 m<sup>2</sup> (e.g. a 20 m X 10 m area).
- Contractor must ensure that surrounding live mature retention trees are not scorched or incur stem damage.
- Excessive smoke production, unusual dry periods of weather, temperature inversions, and forecast/realized wind events in excess of 20kph may require temporary burn restrictions. Permission from the designated project authority for burning under poor venting or excess winds is required.

As per the burn permit, pile burning may be temporarily halted when venting conditions are not favourable for smoke dispersion.

## 1.6 General Site Details

### 1. Locations

- The existing landing is located directly adjacent to the south side of the Maligne Lake Road, 7 km Northeast of Jasper townsite.
- The elevation of the harvest area ranges from 1100-1200m.
- Aspect is predominately NW.
- The grade in most of the harvest area is gentle (<10% slope)
- The proposed fireguard has been broken down into **Six** harvest units:

Harvest Unit	Size (ha)	Forest Type	# Creeks	Unique features	Unit Width (m)	Overstory (stems/ha)	Understory (stems/ha)	Avg DBH (cm)
1	0.42	Lodgepole pine with pockets of Black spruce	3	Remnants of a historic cabin directly adjacent have been flagged with No Work Zone	4	1240 stems/ha (600 live and 700 dead)	spruce/balsam 1200 sph	22.3 cm (PI) 15.2cm (Sb)
2	0.18	Primarily Deciduous with some mixed wood comprised of Lodgepole pine and deciduous	0	Stay out of the thick black spruce type below access route focus on removing dead Lodgepole pine on the upslope side. Work around live deciduous where feasible.	7	1000 stems/ha (850 live and 150 dead)	spruce/balsam 450 sph	26.1 cm (PI) and 28.3cm (deciduous)
3	0.22	Black Spruce type	0		7	1800 stems/ha (1700 live and 100 dead)	spruce/balsam 2100 sph	DBH: 17.8 cm (Sb)
4	0.27	Deciduous	3		7	650 stems/ha (650 live)	spruce/balsam 75 sph	28.3 cm (deciduous)
5	0.39	Black Spruce	1		7	1850 stems/ha (1850 live)	spruce/balsam 5000 sph	13.4 cm (Sb)
6	0.44	Lodgepole pine with small intermittent pockets of deciduous	1		7	850 stems/ha (250 live and 600 dead)	spruce/balsam 1500 sph	25.5 cm (PI) and 33.8 cm (deciduous)

## **2. Site Access**

- Machine access to the start of the Signal Mountain Fire Guard is via a pre-determined flagged access trail which was created from the harvesting of a unit in winter 2022 along Maligne road. The Maligne road past the work access site remains open and used by visitors all winter.
- Highway and secondary road snow clearing will be the responsibility of Parks Canada Highway Operations Unit. It should be noted that major highways have first priority for snow clearing. Delays may be experienced in having the Maligne road cleared during significant snowfall events. Contractors should be prepared with good winter tires and 4WD vehicles and/or chains.
- The contractor must be responsible for signage, PPE and traffic control when mobilizing/demobilizing heavy equipment directly adjacent to Maligne Lake road.
- Contractor must communicate with the PCA project authority when mobilizing and demobilizing equipment on open public access roads.
- Vehicle parking is not permitted along Maligne Road due to snowplow clearing requirements.

## **3. Contractor use of Premises**

- Hotel accommodations are available in Jasper in the winter, and are the responsibility of the contractor to secure.
- Contractor camping is available in the townsite of Jasper. Cost is \$28/day + GST and includes electrical connections only. No sewer or water is available; an outhouse is available. Snow removal is not guaranteed as this location is the last on the snow removal priority list. Contractors can send booking inquiries to [gestiondesbienspnj-assetmgmtjnp@pc.gc.ca](mailto:gestiondesbienspnj-assetmgmtjnp@pc.gc.ca)
- Assume full responsibility of protection and safekeeping of site.
- At the completion of the project, the contractor will be responsible to restore all premises such as laydown area, landing areas, roads, trails and infrastructure equal to that which existed before the work began or to a state acceptable to the project manager.

## **2. SCOPE OF WORK**

### **2.1 Contract**

Unit 1: 1050m (approx. 0.42ha)  
Unit 2: 0.18ha  
Unit 3: 0.22ha  
Unit 4: 0.27ha  
Unit 5: 0.39ha  
Unit 6: 0.44ha

### **2.2 Tree Clearing**

The contractor will perform the work using methods that will minimize ground disturbance.

1. Removal of overstory trees can be done by mechanical clearing. Cleared unit width to be 4m for Unit 1 and 7m wide for the remaining units 2-6. Remove all timber from this access route.

2. Additionally, on both sides of the cleared unit, remove any dead Lodgepole pine that is within the reach of mechanical harvesting equipment from the running surface.
3. Designated heli-spots must be 30 m x 30 m (0.09 ha) in size to safely accommodate a helicopter. Remove all timber (including deciduous) within the designated helispots. All wood to be piled/burned.
4. Stumps must be cut as low as possible without having to dig under snow.
5. Along edges of units, retain live overstory Lodgepole Pine, Douglas-fir and Deciduous trees except those impacted by unavoidable incidental take.
6. >10cm diameter logs to be retained on-site to meet Coarse Woody Debris (CWD) requirements. Whole logs rather than log pieces must be favoured to create natural habitat structure. Trees to be de-limbed and placed flat to the ground on the uphill side of the access route.

### 2.3 Blading/Processing

1. Use of blading to be minimized, however there are a few places along the line where blading is likely required to move between bench features.
2. Processing of timber will be completed at the stump or frequently enough that debris piles for all fuels <10cm in diameter are piled and burned meeting the size restriction and density requirement outlined in section 1.5.3.

### 2.4 Riparian Crossings

Some of the units have creeks and moist riparian areas adjacent to creeks that will need to be crossed.

1. Creeks have been centre lined marked with flagging tape in the field.
2. Skid bridges will have to be constructed or rig mats placed in order to facilitate crossings without incurring riparian soil damage. Within the harvest units, for the least disturbance to streams and riparian vegetation, temporary crossings must be constructed. Install multiple non-pressure treated unframed wood access mats across streams and complete all work activities above the high water mark. Position the mats in a way to avoid all disturbance to stream banks. These crossings may be constructed out of non-woven geo-tech fabric, rig mats or logs placed perpendicular to the channel. Avoid use of corduroy to cross streams due to the potential for deposit of excess woody debris into the streams and potential for damage to riparian vegetation;
3. The following process is suggested to minimize overall soil disturbance for approaches (20-80m in length depending on crossing) and disturbance to the creeks themselves:
  - **Step 1:** Use a feller buncher or single grip harvester to cut the stems as low to the ground as possible, ideally flush with the ground, up to the creek and as far as the buncher can reach;
  - **Step 2:** Place the non-woven geo-tech fabric on the ground up to the edge of the creek;
  - **Step 3:** Place felled wood (corduroy) on top of the fabric up to the crossing;
  - **Step 4:** Place sill logs with a minimum of 40 cm diameter on top of the fabric on each stream bank. This will help support the rig mats that will be placed over the



creeks and protect the creek channel. Be sure to place the sill logs level to make for a flat crossing;

➤ **Step 5:** Place the rig mats (2-wide) over the creek and on top of the sill logs and corduroy;

➤ **Step 6:** Removal of temporary crossing structure and restoration of banks and approaches of all waterbodies upon completion of harvest.

4. In the spring during recce layout, more seasonal seepages were noted. However, by early summer these ephemeral non-classified streams/seepages were all dry. They will not pose an issue for winter harvest.

5. An attempt has been made to estimate how many rig mats will be required.

Unit	Creek	Width (m)	Description	Estimated Rigmats/skid bridge
1	1	1.5	20% slope. Defined channel	1
	2	0.6	Side channel of creek 1	1
	3	2.0	Well defined channel with wet areas extending out all around creek	2
4	4	2.5	Well-defined gravel bottom channel, big creek with lots of water flowing.	1
	5	0.6	Seepage channel	1
	6	1.5	Well-defined channel	1
5	7	0.6	Well-defined channel with wet areas extending out all around the creek. Will require rigmats and/or corduroy for 15-20m either side of creek.	3
6	8	2.0	Wide well-defined channel located within a gully.	1

## 2.5 Maintaining work sites

It is critical that debris is managed at each active work area as the work proceeds

- Debris and slash must be cleaned up at regular intervals as work progresses.
- The contractor must obtain a special activities permit for burning and follow the mitigations noted therein.
- Burning constraints are outlined in the special activities permit.

## 2.6 Site Management and Use

### 1. General

The work sites specified in these requirements must only be used for the purposes of the work. The work sites will be made available by Parks Canada to the contractor for its use for the duration of the work, unless otherwise provided in the Contract documents. The contractor will be responsible for the following in the work sites:

- Keep the works site clean and free from accumulation of waste materials and rubbish regardless of source
- Snow removal into and around the work site for the performance of the work.
- The contractor is required to follow all environmental conditions and mitigation measures identified in Section 4 and the attached Best Management Practices (BMP's) in *Appendix B*.

## **2. Laydown**

If required, a laydown area sufficient for the work, will be permitted to accommodate equipment parking and storage.

## **2.6 Fire Guard Building and Rehabilitation**

1. Minimize soil compaction and disturbance by conducting operations in winter on frozen soils with adequate snow cover.
2. Low Ground Pressure equipment to be utilized.
3. As equipment is demobilizing from site, pull enough Coarse Woody Debris onto the Fire Guard in order to prevent recreational use. Logs can be decked to the side during operations and then as equipment backs out logs can be placed on top of fireguard on the way out.

## **2.7 Site Conditions and Infrastructure**

It is a contractor's responsibility to ensure all equipment operators are aware of existing infrastructure and utilities and ensure they are not damaged during the work. A list of infrastructure includes:

1. Roads:
  - Maligne Lake Road
2. Third Party Utilities:
  - Buried utility line along Maligne Road
3. Historic cabin
  - The ruins of a historic cabin are located nearby to Keith Lake. A No Work Zone has been flagged out.
4. Landing/Access trail
  - A previously built landing exists along Maligne road. Logs have been placed in a random pattern across the landing and will need to be moved to the side in order to provide access for logging equipment.
  - The access through the previously logged unit along Maligne road has an partially existing access trail that will be re-utilized for this project. It provides access up onto a steep bench and towards the back of the previously harvested unit. This access trail location has been flagged in the field.
5. Trails (and associated signs)
  - The previously logged unit along Maligne Road contains two legally designated historic trails. Both trails have been marked in the field with pin flags where they intersect with the skid access trail and must be protected during logging. They must not be used as access trails routes, but crossing them with logging equipment will be required. These trails must be completely restored through clearing of debris upon the completion of harvest.

### 3. OTHER REQUIREMENTS SPECIFIC TO THE WORK

#### 3.1 Regulatory Requirements

The contractor must be familiar with and perform work in accordance with all relevant codes, regulations and standards listed but not limited to:

- Canada National Parks Act and Regulations
- Migratory Bird Convention Act
- Occupational Health and Safety
- Fisheries and Oceans
  - Measures to Protect Fish and Fish Habitat <https://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>
  - Code of Practice for Temporary Stream Crossings <https://www.dfo-mpo.gc.ca/pnw-ppe/codes/temporary-crossings-traversees-temporaires-eng.html>

#### 3.2 Permits

The contractor and any sub contractor is responsible for obtaining and the cost associated with, all required permits including but not limited to:

- Parks Canada Business Licence
  - All work vehicles are required to display work passes from Parks Canada. These are provided free with purchase of Business License
- Restricted/Special Activity Permit
  - Burning
  - Vegetation removal
  - Off road use of vehicles/logging equipment
  - Off road use of any UTV's/snowmobiles

### 4. ENVIRONMENTAL PROCEEDURES

#### 4.1 Environmental Best Practices

1. The cost of environmental and aesthetic protection in accordance with this section will not be measured separately for payment and will be considered incidental to the Work.
2. Contractor to write a site specific Environmental Protection Plan to be submitted and approved by PCA prior to mobilization and project start up.
3. All environmental procedures listed in this section are, in part from, Parks Canada National Best Management Practices (BMP) for Fire Management Operations (March 2017) *Appendix B* and are part of the contract requirements to be adhered to by the contractor.
4. The EPP must include at minimum:
  - An access plan, types of equipment to be used and locations/sizes of lay down areas in order to minimize disturbance to vegetation and soils. As well as all procedures that will be employed to ensure that work does not impact the environment;

- An emergency response plan that outlines procedures to follow in the case of a medical incident, including emergency response contacts;
- A spill response plan that details containment, storage, security, handling, use and disposal of all hazardous materials, including empty containers and surplus waste. Must include a list of all products to be used on site that are considered hazardous/toxic to the environment including fuel, lubricants and antifreeze;
- A fire response plan that outlines procedures to follow in the case of a fire, including a list of adequate fire fighting equipment located on-site and emergency response contacts;
- Provisions to reduce human-wildlife interactions, including a Waste Management Plan.

## **4.2 Work Site Conditions/Staging/Laydown**

1. All people working on the project must review the mitigation measures and any site specific considerations with the PCA Departmental Representative or Environmental Surveillance Officer (ESO) before work begins.
2. All staff employed at the site by the contractor or any sub-contractor will be subject to an approximately one half hour briefing regarding their individual and collective responsibilities to ensure avoidable adverse environmental impacts do not arise from their activities. Employees must attend this briefing before beginning their work at the site. It is recognized that new employees may join the work force after the initial briefing. In this case and as required, subsequent briefings will be presented as numbers warrant, by arrangement with the ESO through the Parks Canada representative.
3. Parks Canada will have an ESO or project officer assigned to the project. The ESO's duties are to monitor the work to ensure compliance with environmental protection measures and to provide guidance through the PCA representative, in the event of unanticipated environmental problems or concerns.
4. Staging and parking areas for material and equipment must be identified, including duration of use, within an existing disturbed footprint (e.g., roadway, gravel surface, previously disturbed area with high resiliency).
5. The guard line has been flagged by PCA staff. Flagging colour scheme to be shared with the contractor upon award of contract.
6. Keep disturbance footprint as small as possible.

## **4.3 Equipment Maintenance**

1. 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.
2. During the work, any required cleaning of tools and equipment must be done greater than 30 meters from waterbodies to prevent the release of wash water that may contain deleterious substances.
3. Equipment fueling sites will be identified by the Contractor and approved by the PCA Representative and the ESO. Any fueling closer than 100 metres from streams, wetlands, water

bodies or waterways shall require the authorization of the ESO or PCA Departmental Representative. Machinery and equipment, including chainsaws, must be stored, maintained, and fueled on a flat surface, outside of the dripline of trees.

4. Diesel and gasoline delivery vehicles, including bulk tankers must be parked more than 100 metres from streams, wetlands, water bodies or waterways. Gravity fed fuel systems are not allowed. Manual or electric pump delivery systems must be used. Fueling personnel must maintain presence at and immediate attention to the fueling operation.
5. Mobile fuel containers (e.g. slip tanks, small fuel carboys) must remain in the service vehicle at all times.
6. Equipment used on the project must be fueled with E10 and low Sulphur diesel fuels and must conform to local emission requirements.
7. Oil changes, lubricant changes, greasing and machinery repairs must be performed at locations approved by the ESO or the PCA Representative. Waste lubrication products (e.g. oil filters, used containers, used oil, etc.) must be secured in spill-proof containers and properly recycled or disposed of at an approved facility. No waste petroleum, lubricant products or related materials are to be discarded, buried, burned or disposed of in borrow pits, turnouts, picnic areas, viewpoints, etc. anywhere within National Parks.
8. The Contractor must ensure that all equipment is inspected daily for fluid/fuel leaks and maintained in good working order.
9. Fuel containers and lubricant products must be stored only in secure locations specified by the PCA Representative. Fuel tanks or other potentially deleterious substance containers must be secured to ensure they are tamperproof and cannot be drained by vandals when left overnight.
10. Contractor to consider using bio-degradable chain oil/vegetable oils in chain saws.

#### **4.4 Equipment Operations**

1. Equipment operators must be fully trained and experienced.
2. Contractor must select equipment appropriate to the site condition and nature of work being conducted;
3. Operate machinery above the high water mark and minimise disturbance to the banks and waterbody;
4. If operating chain saws directly over or adjacent to waterbodies is unavoidable, use measures such as tarps to trap and prevent debris from entering the waterbody;
5. Heavy equipment operating on paved surfaces must be equipped with street pads; damage to paved surfaces must be restored to original conditions;
6. Minimize idling of engines, contingent on operating instructions and temperature consideration;
7. Gas generators must be secured to prevent movement during operation and set up on an impermeable fuel mat with a berm or within a container that can contain 150% of the volume of fuel in the generator;

#### **4.5 Waste**

1. All wildlife attractants must be secured (e.g., petroleum products, human food, recyclable drink containers and garbage) within wildlife-proof containers, a secure building or vehicle. Keep food waste separate from construction waste and remove daily.

2. Notify designated Parks Canada staff immediately should wildlife gain access to the above mentioned attractants.
3. Contain and stabilize waste material above the high water mark to prevent them from entering any waterbody;
4. All materials must be removed from the site on project completion (e.g., refuse material, waste petroleum, etc.).
5. Contain wastes and transport to an approved waste landfill site outside the park, unless otherwise directed; cover waste loads during transportation.
6. The Contractor and workers must dispose of hazardous wastes in conformance with the Environmental Contaminants Act and applicable provincial regulations while observing the Code of Good Practice for Management of Hazardous and Toxic Wastes at Federal Establishments.
7. Hazardous waste and domestic waste materials must not be burned, buried or discarded at the work site or elsewhere in National Parks. These wastes must be contained and removed in a timely and approved manner by the Contractor and workers, and disposed of at an appropriate waste landfill site located outside the park. Waste containers will have lids, and waste loads must be covered while being transported.

#### **4.6 Wildlife**

1. On-site personnel must be made aware of and report any incidental sightings of species at risk immediately to the PCA Departmental Representative or ESO.
2. Schedule operations to avoid critical wildlife life stages (breeding, nesting, denning, roosting, rearing, migration). Consult with ESO to discuss site-specific wildlife concerns.
3. Follow Reducing Risk to Migratory Birds guidance from Environment and Climate Change Canada, including avoiding vegetation clearing during site-specific migratory bird timing windows. Consult with ESO for specific approaches to avoiding impacts on migratory birds (e.g., nest surveys, exclusion zones for located nests, area avoidance).
4. Should active nests, dens, roosts or calving areas be discovered, stop work and contact designated PCA representative immediately for direction.
5. Never approach or harass wildlife (e.g., feeding, baiting, luring).
6. During the Environmental Briefing all personnel must be instructed by the ESO on procedures to follow in the event of wildlife appearance near or within the work site and any other wildlife concerns.
7. If wildlife is observed at or near the work site, allow the animal(s) the opportunity to leave the work area and away from areas of potential conflict.
8. The PCA Departmental Representative and ESO must be alerted immediately to any potential wildlife conflict (e.g., aggressive behaviour, persistent intrusion), distress or mortality. In the case of aggressive behaviour or persistent intrusion, stop work and evacuate the area. Extra care to control materials that might attract wildlife (e.g. lunches and food scraps) must be exercised at all times.

#### **4.7 Invasive vegetation**

- 2.6.1 Invasive alien plants pose a direct threat to the ecological integrity and must be managed to protect natural resources.
- 2.6.2 Disturbance from road/landing/skid trail construction, mechanical tree removal and burning activities increases susceptibility to non-native vegetation colonization.

- 2.6.3 The contractor must ensure that all soil, seeds and any debris attached to equipment to be used on this project site must be removed by high pressure heated water power washing, outside the National Park prior to transporting or driving to the work site. All equipment will be inspected prior to entry into the park by the ESO and the PCA representative.

#### **4.8 Clearing & Vegetation Maintenance**

1. When felling trees, precautions must be taken to minimize damage to surrounding vegetation.
2. Cut stumps as close to the ground as possible without digging under snow.
3. When possible, conduct work when the ground is frozen or under a condition (such as snowfall) that limits ground compaction. If not possible, rig mats or other appropriate measures to minimize soil impacts must be used.
4. Trees are to be harvested, processed and placed with minimal damage to other live standing trees and should be felled into either natural or constructed openings.
5. Use the existing landing area and skid trail within the previously logged area to avoid additional disturbance to vegetation and prevent soil compaction.

#### **4.9 Erosion and Sediment Control**

1. Erosion control measures that prevent sediment from entering any waterways, water body or wetland in the vicinity of the work site are a critical element of the project and must be implemented by the contractor where necessary and specified to do so.
2. The regular monitoring and maintenance of all erosion control measures will be the responsibility of the contractor. If the design of the control measures is not functioning effectively, they are to be repaired.
3. The site will be secured against erosion during any periods of work inactivity or shutdown.
4. Schedule operations to avoid wet, windy and rainy periods or very dry periods that may increase erosion and sedimentation.
5. Regularly inspect and maintain erosion and sediment control structures during all phases of the project and modify measures as necessary.

#### **4.10 Pollution Control**

1. The contractor must prevent any deleterious and objectionable materials from entering any waterway, water body or wetland including but not limited to, petroleum products and their derivatives, antifreeze or solvents that would result in damage to aquatic and riparian habitat;
2. A spill response plan will be prepared by the contractor and will detail the containment and storage, security, handling, use and disposal of empty containers, surplus product or waste generated in the application of these products, to the satisfaction of the PCA representative and the ESO and in accordance with all applicable federal and provincial legislation. The plan must include a list of products to be used or brought to the work site that are considered or defined as hazardous or toxic to the environment;
3. The containment, storage, security, handling, use, unique spill response requirements and disposal of empty containers, surplus product or waste generated in the use of any hazardous or toxic products must be in accordance with all applicable federal and provincial legislation. Generally, hazardous or toxic products must be stored no closer than 100 metres from streams, wetlands, water bodies or waterways;

4. An impervious berm must be constructed around fuel tanks, generators and any other potential spill area. The berms must be capable of holding 110% of tank storage volumes and must be to the satisfaction of the PCA Representative and the ESO before start-up. Measures such as collection/drip trays and berms lined with occlusive material such as plastic and a layer of sand, and double-lined fuel tanks can prevent spills into the environment;
5. A spill contingency response kit including sorbent material and berms to contain 110% of the largest possible spill (i.e., fuel or other toxic liquids) related to the work must be available on site at all times. On-site personnel must be aware of its location and trained in its use. Any contaminants must be recovered at source and disposed according to applicable laws, policies and regulations;
6. Timely and effective action must be taken to stop, contain and clean-up all spills as long as the site is safe to enter. The PCA Representative and the ESO must be notified immediately of any spill. In the event of a major spill, all other work must be stopped and all personnel devoted to spill containment and clean-up;
7. The costs involved in a spill incident (the control, clean up, disposal of contaminants and site remediation to pre-spill conditions), are the responsibility of the Contractor. The site will be inspected to ensure completion to the expected standard and to the satisfaction of the PCA Representative and ESO;
8. All on-site personnel must be briefed on reporting requirements for hazardous materials spills. Spills must be reported immediately to designated PCA departmental representative;
9. Identify and handle all toxic/hazardous materials as required under the Canadian Environmental Protection Act, Transportation of Dangerous Goods Act and Workplace Hazardous Materials Information System.

#### **4.11 Cultural Resources**

1. The project area contains cultural resources reflecting the early management history of the park. These include a historic trail, transmission line, lean-to, trail blazes, old cut logs and stumps and a rock pile which is possibly an old sign base. There are also remnants of a historic cabin on the shore of Keith Lake. These are cultural resources are associated with servicing the Park fire lookout station on Signal Mountain and have been photographed and recorded in detail by Terrestrial Archaeology.
2. Only the designated historic trails within the Keith Lakes Unit have specific protection requirements. These include: Contractor must NOT use existing recreation trails as an access trail location and contractor must clear debris from the recreation trails post harvest.
3. The accidental finds protocol will be applied to this project. There may be cultural resources present in the project areas that have not yet been discovered. In the event that cultural resources are encountered, work must cease in the immediate area and the PCA representative be notified immediately.
4. Operators to notify the site supervisor upon discovery of any archaeological resources. If features (i.e., structural remains and/or artifact concentrations) are encountered, leave in place, mark the location (e.g. with prominent flagging) and contact designated PCA representative to take photographs and, if possible, depth measurements. The designated PCA representative must provide the information immediately to the PCA archaeologist or cultural resource advisor to discuss any protective measures that might be required before work can resume at that location.



5. Significant resources that could be considered grounds for work stoppage include, but are not limited to, human remains, unique or diagnostic artifacts, and/or artifacts directly associated with known sites and/or unidentified sites in the area.

## **5. HEALTH AND SAFETY REQUIREMENTS**

### **5.1 References**

1. Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
2. Province of Alberta
3. Occupational Health and Safety Act, R.S.A. 2000.

### **5.2 General Requirements**

1. Contractor must develop a written site specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
2. The PCA Representative may respond in writing, where deficiencies or concerns are noted and may request re submission with correction of deficiencies or concerns.
3. Health and Safety Plan must be completed and submitted to PCA representative prior to mobilization and start of work.
4. The contractor will conduct on-site safety briefings for all PCA personnel identified by the PCA representative who will be working in proximity to the Operator's equipment.

### **5.3 Compliance Requirements**

1. The contractor must be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
2. The contractor must comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site specific Health and Safety Plan.

### **5.4 Unforeseen Hazards**

When unforeseen or peculiar safety related factor, hazard, or condition occur during performance of Work, contractor must follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of the Province Alberta and advise the PCA Representative verbally and in writing.

### **5.5 Health & Safety Coordinator**

1. Contractor must employ and assign to Work, competent and authorized representative to fulfill the role as Health and Safety Coordinator. The supervisor or foreman may satisfy the role of Health and Safety Coordinator.

Health and Safety Coordinator must:

- Have site related working experience.
- Have working knowledge of occupational safety and health regulations.
- Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- Be responsible for implementing, enforcing daily and monitoring site specific Contractor's Health and Safety Plan
- Be on site during execution of Work and report directly to and be under direction of site supervisor.

## **5.6 Correction of Non-Compliance**

1. Contractor must immediately address health and safety non-compliance issues identified by authority having jurisdiction or by PCA Representative.
2. Contractor must provide PCA Representative with written report of action taken to correct non-compliance of health and safety issues identified.
3. PCA Representative may stop Work if non-compliance of health and safety regulations is not corrected.

## **5.7 Work Stoppage**

Contractor must give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

## **5.8 Visitor Safety**

1. Notifications of closures will be put in place by PCA as required for trails to inform and protect the public during all work conducted for the duration of this contract. These closures will be coordinated between the contractor and the Operator and the PCA representative.
2. All signage to inform the public of area closures must be bilingual or symbolic in nature.

## **6. PROJECT MANAGEMENT AND COORDINATION**

## **6.1 Project Meetings**

1. Contractor must attend weekly project meetings chaired by PCA representative, throughout the progress of work and provide information as determined by the PCA representative.
2. Allow 5 business days' notice for any cancellation or rescheduling of project meetings.

## **6.2 Submittals**

The following must be submitted to the PCA Departmental Representative prior to mobilization and commencement of work for review and approval:

- Project schedule in Gantt chart form. Includes; detailed work plan, that clearly identifies how, when and where the work will be completed.
- Contact list including any sub-contractors
- Site Specific Health and Safety Plan and emergency response plan
- Copy of current business license and any other permits needed to complete the work.
- Environmental Protection Plan
- Traffic Management Plan

## **6.3 Organization and Start-Up**

1. Within seven (7) days after award of Contract, the contractor must request a Start-up meeting with the PCA Representatives to discuss and resolve administrative procedures and responsibilities. Meeting to be chaired by the PCA Departmental Representative who will also record the minutes of the meeting. Senior representatives of the Owner, PCA Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors are to be in attendance.
2. Agenda to include following:
  - Appointment of official representative of participants in Work
  - Schedule of Work, progress scheduling
  - Required Submittals
  - Requirements for temporary facilities, offices, storage sheds, utilities
  - Site safety and security
  - Monthly progress claims, administrative procedures, and holdbacks
  - Close out procedures
  - Other business
3. The contractor must comply with the PCA Representative's allocation of mobilization areas of site; for access, traffic, and parking facilities.

## **6.4 On Site Documents**

Contractor to maintain at job site, one copy of each:

- Site Maps
- Statement of Work

- Contract Requirements.
- Addenda
- Change Orders
- Site Specific Health and Safety Plan
- WHMIS
- Environmental Protection Plan
- Traffic Management Plan
- Restricted Activity Permits
- Field reports
- Copy of approved Work schedule and most recent updated schedule

## **6.5 Lines of Communication**

All formal directions regarding project scope, budget, schedule, etc. must come from the designated PCA Project Authority, in writing.

## **6.6 Media**

The Contractor must not respond to requests for project related information or questions from the media. All media related inquiries are to be directed to the PCA Project Authority.

## **6.7 Close Out Procedures**

1. Contractor must notify and accompany the PCA representative on preliminary inspection to determine any items listed for completion or correction.
2. Contractor must comply with the PCA representative's instructions for correction of items of work deemed incomplete.
3. Contractor must notify PCA representative of instructions for completion of items of work determined in PCA representative's final inspection.

**END OF DOCUMENT**