

**Timber Harvesting Project  
For the  
Fox Lake Commercial Fuelwood  
Planning Area**

Forest Management Unit: **Y08**  
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NOTE:

This *Timber Harvest Project for the Fox Lake Commercial Fuelwood Planning Area* is a compilation of the original Timber Harvesting Project that was released for review September 2006 and the Little Fox Lake Plan released September 2008.

The September 2006 Timber Harvest Project is outlined in the main body of this report is covered in Section 1 through to Appendix 4. This includes the YESAB submission and subsequent decision document.

The Little Fox Lake plan was added to the plans in the region with the YESAB submission and subsequent decision document based on the consultation from September 2008. It is included in the document as Appendix 5.

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## Executive Summary

The intent of this Timber Harvesting Project is to provide opportunities for local commercial fuelwood suppliers in the form of small volume commercial fuelwood timber permits of less than 1000 m<sup>3</sup> per year.

This Timber Harvesting Project will include establishing operating units and harvest blocks on the ground, as well as upgrading and building road infrastructure to the designated operating units and blocks.

The Fox Lake Fire Harvest Planning Area is within a portion of the 1998 Fox Lake Fire that burnt approximately 44,000 hectares.

The Planning Area is situated along the corridor of Klondike Highway between Braeburn Lake and Fox Lake.

The Fox Lake Planning Area is subdivided into two areas. The personal fuelwood area is between Little Fox Lake and Fox Lake on the eastside of the highway and the area that intersects the Northwestel Tower Road. The commercial fuelwood area is situated north of the Northwestel Tower Road. (refer to Appendix 1 Fox Lake overview map)

There are 16 operating units that have been identified within the commercial fuelwood area, totalling 145 hectares. Harvesting prescriptions will utilize the standing firekilled stems of 12 cm or greater while retaining smaller firekilled stems. This will leave a minimum of 10% retention in all operating units. Firekilled blowdown will be utilized where it is practical for the logger to extract.

Total volume of standing firekilled stems of the utilization size within the operating units is approximately 10,800 m<sup>3</sup>, or 4800 cords. Total blowdown of the utilization size is approximately 1,600 m<sup>3</sup> or 470 cords, which a portion will be expected to be utilized.

All areas harvested will be reforested according to standards in the *Yukon Silviculture Manual*.

There are 4.5 kilometres of existing roads that will initiate access to some of the operating units. These roads will require upgrading. An additional 11 kilometres of new access will be required to reach into each of the operating units. The upgrading and construction of roads will be completed upon successful screening of the Timber Harvest Project. Not all upgrading and new roads will be completed at once, but roads will be upgraded and constructed as demand for the operating units arises.

The Forest Management Branch will be responsible for the upgrading and construction of roads.



## **1.0 INTRODUCTION**

### **1.1. Background**

In 1999 Forest Resources issued a Resource Report for Salvage Harvest Planning in the 1998 Fox Lake Fire (burnt approximately 44,000 hectares).

The proximity to the City of Whitehorse generated a great deal of interest in the Fox lake fire as a salvage opportunity for both sawlog and fuelwood.

The 1999 Resource Report was generated to address broad based concerns and values for the area. As a result of the consultation, the report provided harvest mitigation and operating guidelines for the submission of Project Descriptions in the Harvest Planning Area.

Since the 1999 Resource Report, there continues to be a steady utilization and demand, especially from commercial fuelwood operators.

In the Resource Report; areas were identified as Personal and Commercial fuelwood areas,

Within the guidelines of the Resource Report, the development of the harvest blocks and road infrastructure was largely left to the fuelwood harvester.

To ensure that the commercial fuelwood infrastructure (i.e. blocks and roads) is utilized in an organized and efficient manner, in which the landscape and stand level issues can be addressed, Forest Management Branch is initiating a Timber Harvesting Project Plan within the commercial fuelwood area.

This plan will include the upgrading and building of roads, layout of specific operating units and blocks.

All operating units identified for commercial fuelwood in this Timber Harvesting Project are within the commercial fuelwood area that was originally identified in the 1999 Resource Report.

The consultation with the First Nations that was originally done for the 1999 Resource Report identified several values; these values will continue to be respected within the scope of the Timber Harvesting Project.

The operating units' boundaries and proposed roads have been surveyed, marked in the field, and mapped at this time; in preparation for the consultation and screening process.

(Refer to Appendix 2 Fox Lake Operating Units map)

## **1.2. Ecoregion and Drainages**

The Fox Lake Commercial Fuelwood Planning Area is almost completely within the Yukon Southern Lakes Ecoregion of the Boreal Cordillera Ecozone (*Environment Canada 2005*). This ecoregion is characterized by extensive stands of boreal forests composed of open white spruce and lodgepole pine intermixed with aspen. South-facing slopes at low elevation are occupied by grassland communities. Subalpine elevations above 1200 metres asl support open forest communities of alpine fir, white spruce and occasionally lodgepole pine. The forests experience frequently from recurring natural fires such that seral communities are most common. Mountain avens, dwarf shrubs, forbs, grasses, and lichens constitute the main vegetative cover in colder, more exposed alpine sections. Most of the terrain lies in the 600-1500 metres in elevation with peaks over 1800 metres. Eutric brunisolic soils on sandy loam and rolling morainal to steep colluvial material are dominant. Low ice content permafrost occurs in a sporadic discontinuous pattern. Cryosolic soils are scattered throughout the landscape on some poorly drained areas and on north facing slopes. Within major valleys the mean annual temperature is approximately -2.5°C with a summer mean of 10°C and a winter mean of -16.5°C.

## **2.0 PROJECT AREA IDENTIFICATION**

The Fox Lake Commercial Fuelwood Planning Area is located within the 1998 Fox Lake burn. This 1998 wildfire burnt an estimated 44,000 hectares with an irregular perimeter approximately 185 kilometres long. The Klondike Highway corridor runs through the west side of the fire between Braeburn Lake and Fox Lake. The commercial fuelwood planning area encompasses the firekilled forested stands in the valley between the Braeburn Mountain and Anticline Mountain: as well as the northwest toe slope of St Hilary Mountain (see appendix 1). The planning area encompasses 5,800 hectares with a total area of 146 hectares within operating units. (Refer to Appendix 2 Fox Lake Operating Units map)

## **2.1. Landscape Issues**

### **2.1.1. Wildlife**

Evidence of large mammal use (Elk, moose, black and grizzly bear) has been noted throughout the Fox Lake burn area. Signs of antler rubbing have been seen within small green island patches of the burn. Green islands are excluded from any harvesting activity; this provides thermal cover and refuge for large mammals such as elk, moose and bear. No green islands are within any of the proposed operating units.

Dry Bog areas with an abundance of blueberry shrubs which could be habitat for bears have been identified in the wetlands and stream assessment. These areas are buffered as per Timber Harvesting Guidelines. This is detailed in Riparian and Watercourses, section 2.1.3

No raptor or migratory bird nests were found during the engineering of roads and operating units. If any nests are found during future operations, operations will cease immediately and officials from Client Services & Inspections (CS&I) will be notified.

### **2.1.2. Biodiversity**

The planning area represent approximately 2% of the burn where forest structure and biodiversity will potentially be modified from the post-burn condition by harvesting, and that the surrounding, much larger area, will continue to maintain the full spectrum of forest structures and their associated function.

The early seral stage of the post burn forest does not change with harvesting firekill. The function of the early seral stage of the burn is maintained; however, the structure and the volume of downed woody debris are reduced.

Given this context biodiversity is being maintained as best as possible in the commercial area by limiting harvesting to specific operating units, leaving all green island patches, and only opening operating units in a progressive manner as existing operating units are fully utilized to the standard set in harvesting plan section 3.0.

The access proliferation (i.e. abundance of roads created by numerous fuel wood cutters) will be reduced in the planning area by forest management's initiative to engineer and construct the mainline and branch roads into operating units as per standards set in Access Management section 4.0

Connectivity and biodiversity within the riparian areas are being maintained by utilizing buffers as per Timber Harvesting Guidelines.

### **2.1.3 Riparian and Water Resources**

A water assessment contractor was asked to conduct the Fisheries and Stream/Lake assessment at locations at or near operating units, and proposed road crossings (Refer to Appendix 2 Fox Lake Operating Units map for these locations) The Fisheries and Stream/Lake assessment report is attached to Appendix 3. These assessments were used to assist with classifying the watercourses for buffers, assessing the habitat and assist with identifying suitable locations for road creek crossings. The road creek crossings are detailed in Access Management section 4.0.

In the Planning Area Old Johnny Lake, (Lake Class 2) approximately 32 hectares, is located within the northeast corner of the commercial fuelwood area. This lake is a known fish bearing lake. No harvesting operations will occur within 400 metres of this lake. The nearest proposed operating units (OU 5 to the north, OU 6 to the south) are at least 400-600 metres from the lake. Timber Harvest Planning and Operating Guidebook (TPHOG) requires a buffer of 200 metres but 400 metre buffer is respected due to 1999 Resource Report consultation with First Nations, Little Salmon/Carmacks and Ta'an Kwach'an, as detailed in the cultural values section 2.1.4.

To the south of Old Johnny Lake is a wetland complex (Observation Site O3, O4 and O5) and narrow stream channel (Fisheries Site F). The assessment results showed that the wetland consist of 16 hectares of dry bog (O3); with many blueberry shrubs, which could be habitat for bears. South of dry bog is small marsh (O4) and a larger marsh (O5). A narrow incised stream channel is between the two marshes.

The stream channel is an outlet of the small marsh from the larger marsh. A fisheries assessment was done on the stream channel (F8). A 50 metre electroshock survey of the channel revealed an absence of fish. A road creek crossing is proposed, a culvert will be installed at site as detailed in Access Management section 4.0.

The wetland complex (dry bog) is classified as a wetland class 3 and the narrow stream channel is a stream class 5. A 60 metre buffer as per the Timber Harvest Planning and Operating Guidebook (THPOG) separates the wetlands from the operating units; OU 11a, OU 8 on the eastside of wetland and OU 6 on the west side of the wetland.

Between operating units 7a and 7b there is a narrow stream channel. The assessment results (Fisheries and Stream Site F3) showed open water with stream flow that disappears and reappears. This area would be classified primarily as a fen (wetland class 1 area is <1 ha) yet would likely become flowing creek (stream class 5) during snow melt and heavy rainfall. A 50 metre electroshock survey of the channel revealed an absence of fish. A road creek crossing is proposed, a culvert will be installed at site as detailed in access management section 4.0. No harvesting will occur within 50 metres of the class 1 wetland, which exceeds the Timber Harvest Planning and Operating Guidebook (THPOG) requirement of a 20 metre buffer.

Within Operating Unit 11 there are two small gullies. The assessment results (Fisheries and Stream Site F6, F7) showed no distinct water channels (ephemeral draws) but the ground is damp with a few small areas of standing water. These sites would be classified as fens (wetland class 1 area is <1ha); with a potential of stream flow during snowmelt and heavy rains. No fish are present at these sites. No harvesting will occur within 20 metres of these sites which exceed Timber Harvest Planning and Operating Guidebook (THPOG). A road creek crossing is proposed, culverts will be installed at these two sites as detailed in Access Management section 4.0.

South of operating units OU 9 and OU 10 is a marsh at observation site 1 (O1) and further south is a small lake at observation site 2 (O2). The assessment results showed that the lake is small (200m in length) and appears to be 2 metres deep. Ducks were observed diving for fish. This lake is classified as a lake class 1 requiring a 100 metre buffer.

The marsh (O1) flows via ground water into the small lake (O2). No ducks were observed at the marsh. The marsh is classified as a wetland class 1 (<1ha in size) requiring a 60 metre management zone width (constraints to harvesting apply).

The assessment recommended that road construction near these two sites should be avoided to conserve waterfowl habitat and potential fish habitat. The nearest point of the road is 150 metres from the marsh and over 600 metres from the lake as detailed in Access Management section 4.0. Operating units OU 9 and OU 10 have been modified so that harvesting will not occur within 400 metres of the lake. The south boundary is set back to 60 metres from the wetland

Near the proposed access of operating unit OU 13 (west side of highway), there is a drainage channel from a small headwater lake (east side of highway). The assessment results showed the channel was completely dry, absence of groundwater. The existing culvert beneath the Klondike Highway appears that the site rarely has channel flow. The drainage is classified as ephemeral. No fish are present at the site. Though water flow rarely occurs a culvert will be installed where the proposed road crosses the drainage at the north end of OU 13 as detailed in Access Management section 4.0.

Adjacent to the south side of Operating Unit OU 12 is a stream channel. The assessment results indicated the stream retains flow throughout the year. The channel consists of clay and silt which is not considered suitable for fish habitat. A 50 metre electroshock survey of channel revealed an absence of fish. The stream is classified as a stream class 5. No harvesting will occur within 20 metre buffer of stream as per Timber Harvest Planning and Operating Guidebook (THPOG). There are no proposed road creek crossings required to access operating unit OU12.

#### **2.1.4. Recreation and Visual Quality**

The impact on visual quality will be minimal; the harvesting is occurring within an old burn that includes heavy blow down, burnt and broken snags, fragmented with small patches of standing green trees of spruce and aspen. Some portions of the operating units may be visible from various viewsapes along the Klondike Highway. The fuelwood harvesting will be focused on firekilled trees; leaving all green tree patches intact.

The protection of regeneration and further silviculture initiatives such as potential planting as detailed in silviculture system section 3.2 will “green up” the areas with time; improving the visual quality.

There are no designated recreation sites or trails within or adjacent to the commercial fuelwood planning area.

#### **2.1.5. Cultural Values**

Four First Nations traditional territories are overlapped by the Fox Lake Commercial Fuelwood Planning Area; they are Champagne-Aishihik, Kwanlin-Dun, Little Salmon/Carmacks and Ta'an Kwach'an First Nations.

Kwanlin-Dun, Little Salmon/Carmacks and Ta'an Kwach'an First Nations all have site specific and surveyed settlement lands adjacent to Old Johnny Lake. In the 1999 Resource Report consultation with First Nations; Old Johnny Lake was identified as a culturally significant, traditional, grayling, dip-net fishing lake. A 400 metre buffer was agreed upon with Department of Indian and Northern Affairs Forest Resources to ensure this cultural value was protected from any harvesting activity. In respect of this 1999 consultation no harvesting operations will occur within 400 metres of Old Johnny Lake.

## **2.2. Stand Level Issues**

### **2.2.1. Ecosystem and Stand Composition**

The operating units are situated on upland sites; with wetland complex's imbedded throughout the area. The upland ecosystem is classified as a natural disturbance zone (NDZ) 3 (Forest Resources, 1999). The site has recently experienced fire in 1998, (Fox Lake Fire 44,000 hectares); which is characteristic of this disturbance zone. Stands in these zones originate primarily from fire, insect and disease respectively. Typically fire disturbances range between 1-100,000 hectares in size; insect and disease disturbance range between 1- 1000 hectares in size.

Due to the fire disturbance the forest stands are at an early seral stage. The operating units are comprised of fire killed white spruce stands on moderately productive sites. Generally the average heights are 14 metres and range from 12 to 25 metres. The majority of the fire killed spruce is standing, however due to post burn conditions percentage of downfall, decay and broken tops will steadily increase with time.

There is no advanced regeneration; present understory mainly consists of grass and willow.

The terrain is flat to gentle rolling moderately well drained with some low lying, imperfectly drained areas.

### **2.2.2. Cultural Heritage and Archaeological Sites**

An overview assessment of high potential and known heritage sites was conducted for FMB by the Heritage Branch. No known archaeological sites were found in or around the operating areas. High potential areas have been buffered from development monitoring will continue throughout future operations.

Any suspected sites of importance uncovered during road development or harvesting operations will require immediate cessation of all operations. FMB and/or the Heritage Branch shall be notified and operations will not resume until notice is given.

### **2.2.3. Traditional Land Users**

Trapping concession # 217 encompasses the Fox Lake Planning area. The trapline holder will be contacted to determine the locations of their trapping activities and infrastructure so that, if required, appropriate mitigation can be prescribed.

## **3.0 HARVESTING SECTION**

### **3.1. Operating Unit Area and Volume Summary**

The operating units vary in the amount of merchantable volume or cords per hectare. Merchantable volume or cords was calculated based on volume of standing firekilled spruce of 12 cm diameter or greater within each of the operating units. Firekilled stems under 12 cm diameter are to be retained. Timber cruise data that was conducted in operating units indicate that leaving the firekilled stems less than 12 cm in diameter will leave a minimum of 10% retention in all operating units.

Some of the operating units will be broken into individual blocks of less than 1000m<sup>3</sup> in order to meet the local demand from the commercial fuelwood harvesters.

Table 1. Summary of operating units showing areas and harvest volume.

| <b>Fox Lake Commercial Fuel wood Planning Area</b>   |                 |                           |   |                                    |
|--|-----------------|---------------------------|---|------------------------------------|
| *Merchantable volume all white spruce = or >12cm dbh |                 |                           |   |                                    |
| Operating Unit                                       | Total Area (Ha) | Volume m <sup>3</sup> /ha | Total Harvest Volume (m <sup>3</sup> )* | Total Harvest Equivalent in Cords* |
| 5  | 5.6             | 25                        | 140                                     | 62                                 |
| 6  | 22.5            | 85                        | 1913                                    | 844                                |
| 6a   | 6.8             | 90                        | 612                                     | 270                                |
| 7  | 10.6            | 60                        | 636                                     | 281                                |
| 7a   | 0.6             | 120                       | 72                                      | 32                                 |
| 7b   | 0.7             | 120                       | 72                                      | 32                                 |
| 7c   | 1.3             | 65                        | 85                                      | 37                                 |
| 8  | 18.5            | 100                       | 1,850                                   | 817                                |
| 9  | 12.0            | 35                        | 420                                     | 185                                |
| 10   | 9.7             | 25                        | 240                                     | 106                                |
| 11   | 14.5            | 100                       | 1,450                                   | 640                                |
| 11a  | 9.5             | 80                        | 760                                     | 336                                |
| 12   | 3.2             | 100                       | 320                                     | 141                                |
| 13   | 11.3            | 75                        | 825                                     | 374                                |
| 14   | 10.7            | 85                        | 663                                     | 293                                |
| 15   | 3.7             | 60                        | 204                                     | 98                                 |

**Total Harvest Volume = 10261 or Cord equivalent = 4,530**

### 3.2 Silviculture System

The harvesting in the Fox Lake Planning Area is considered to be a salvage operation. Due to the intensity of the burn there is minimal green spruce retention remaining in the planning area and advanced regeneration is nil. There are no green trees or patches within the operating units; some green patches are adjacent to the operating units. Hence the silviculture system is to be patch cuts to the size of the operating units. Average operating unit size is 9 hectares and the range is .6 hectares to 22 hectares. All standing fire killed stems of 12 cm or greater will be harvested within operating units respecting any riparian buffers. The green trees and islands that are adjacent to operating units are retained as seed sources to promote natural regeneration. If the natural regeneration method is insufficient then planting is an alternative.

There will be a minimum of 10% retention of snags and blow down within the operating units for wildlife and coarse woody debris

#### 3.1.1. Harvest Scheduling and Season

There is no defined schedule for harvesting in the planning area. The future implementation of the Timber Harvesting Project is dependant upon local demand for timber products and permit applications.

The order, for disposition for operating units, considers current fire killed timber quantity and quality along with the scheduling of developing road access. Operating units OU 5, OU 8, OU 11, OU 11a, OU 12, OU 13 and OU 15 are scheduled to be the first areas for road development .Site conditions do not restrict harvesting to winter only in these operating units. It will be possible to harvest during dry summer conditions. For silviculture reasons, it is preferable to harvest in the summer which increases soil disturbance and promotes soil mixing providing better seed bed conditions suited to natural seeding and regeneration of the site. This soil disturbance will assist with site preparation for planting as well. Harvesting without a snow-pack includes the risk of increased damage to established regeneration that exists on site; however regeneration is very minimal in these operating units.

Harvesting during snow free conditions requires enhanced on-block road and landing construction standards to ensure operability. This also increases the risk of soil disturbance, erosion and compaction. The rehabilitation of summer roads, landings and skid trails will require scarification of compacted areas and roll back of overburden stripped during construction.

Though site conditions in operating units OU 6, OU 6a, OU 7, OU 7a, OU 7b and OU 7c do not restrict harvesting to winter only, the access across the wetland complex make these operating units restricted to winter only.

Operating Units OU 9, OU 10 and OU 14 will be restricted to winter harvesting only. These operating units site have some low lying, imperfectly drained soils, not conducive to summer harvesting.

Table 2. Summary of operating units showing season for harvesting.

| Fox Lake commercial Planning Area |               |
|-----------------------------------|---------------|
| Operating Unit                    | Season        |
| 5                                 | Summer option |
| 6                                 | Winter only   |
| 6a                                | Winter only   |
| 7                                 | Winter only   |
| 7a                                | Winter only   |
| 7b                                | Winter only   |
| 7c                                | Winter only   |
| 8                                 | Summer option |
| 9                                 | Winter only   |
| 10                                | Winter only   |
| 11                                | Summer option |
| 11a                               | Summer option |
| 12                                | Summer option |
| 13                                | Summer option |
| 14                                | Winter only   |
| 15                                | Summer option |



### **3.1.2. Reforestation**

All green patches are to be retained as seed sources for the operating units. However green patches adjacent to operating units OU 5, OU 8, OU 9 OU 10, OU 11, OU 13 and OU 15 are very limited. Advanced regeneration is nil and natural regeneration in these operating units are minimal.

In the other operating units using green patches as seed source may be acceptable source of regeneration. Numerous green patches are adjacent to operating units OU 6, OU 7, OU 12, and OU 14. The FMB silviculture section is planning to measure and evaluate regeneration in all these areas in the summer of 2007. The evaluation will be comprised of a series of silviculture surveys, including performance evaluation. This formal survey package will allow the comparative assessment of any harvesting impacts.

Planting will be considered in operating units where the leave for natural regeneration is not effective

## **4.0 ACCESS MANAGEMENT**

Forest Management Branch will be responsible for the upgrading of the existing roads and construction of the new access roads. All upgrading to roads and proposed roads and culvert requirements have been surveyed, flagged in field (Refer to Appendix 2 Fox Lake Operating Units maps for road locations). To access the operating units, 4.5 kilometres of upgrading to existing roads and 11 kilometres of new roads are required.

The operating units in the Fox Lake commercial planning area have been chosen based on the amount of road development that has been done in this area. Although access into the planning area already exist, upgrading to this access will be required. Only operating unit OU 13 will require new access off the Klondike Highway to the operating unit. An access application and approval from Highways and Public Works is required to perform the work.

Roads into the all the operating units are required. Operating units OU 5, OU 8, OU 11, OU 11a, OU 12, OU 13, and OU 15 have an option for summer harvesting. Access into these operating units could be built to 4 metre wide all weather conditions as per Timber Harvesting Guidelines. There are 2 culvert requirements in OU 11, and OU 1 culvert requirement in OU 13 for ephemeral crossings that have been identified in Riparian and Water Resources section 2.1.3.

Operating units OU 6, OU 6a, OU 7, OU 7a, OU 7b, and OU 7c will need new access across the wetland complex. As identified in Riparian and Water Resources section 2.1.3., there are 2 culvert requirements to cross stream channels (both streams class 5) one at the south end of OU 8 and the other between OU 7a and OU 7b. The wetland complex crossing makes these operating units restricted to winter access only. The new mainlines will be 4 metres wide seasonal winter as per Timber Harvesting Guidelines.

Existing access to operating units OU 9, OU 10 and OU 14 will require upgrading. New access is required into these operating units. These operating unit sites have some low lying, imperfectly drained soils and thicker moss layers that make winter access and harvesting only. Access into operating units will be 4 metre wide seasonal winter as per Timber Harvesting Guidelines.

## 5.0 MONITORING PLAN

Upgrading of the existing roads and construction of the new access roads will be contracted and monitored by FMB staff. Any spur road construction done after this will be done by permittees and subject to permit terms and conditions and will be monitored by the staff of CS&I branch.

Harvest operations will be subject to permit terms and conditions and will be monitored by the staff of CS&I branch. Post-harvest retention requirements will be made clear to all harvest permittees prior to the commencement of operations. This may be followed up by a post-harvest retention assessment in concordance with FMB policy.

All reforestation requirements and activities will be monitored by FMB staff in accordance with this THP and the *Yukon Silviculture Manual*.

## 6.0 OPERATING UNIT SUMMARIES

This section highlights salient information which will be required for site and harvest plans and permit terms and conditions. All operating unit boundaries have been surveyed and marked in the field (see map appendix 2).

### 6.1.1. Operating Unit 5 Summary

**Boundary:** The operating unit follows the higher volume standing fire killed spruce type. Outside of boundary is heavy blowdown. Old Johnny Lake is south of the operating unit

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE   | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|---------|----------------|---------------|-----------------|---------------|--------------|
| 0-5     | SW     | Even    | Crest          | Mod. Fresh    | Moderately Well | 0-5 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 5.5       | Spruce willow grass | 14<br>9-16                | 16<br>7-25             | Open         | 25                      | 140                       | 62               |

**Harvesting System:** Patch cut with variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

**Operability:** Summer option

**Riparian Considerations:** The OU is >600 m from any streams or wetlands.

**Terrain Stability:** There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: The block cannot be seen from the Klondike Highway and has no other visual concerns.

Access: Requires 700 metres of upgrading to existing access and 750 metres of new access. Could be class 2 (dry weather conditions) if summer harvest option is initiated or class 3 (seasonal winter mainline) if winter harvesting only.

Special Concerns: None.

Understorey: minimal regeneration and nil advanced-regeneration. Patches of willow and grass dominate the understory.

### 6.1.2. Operating Unit 6 Summary

Boundary: The operating unit follows the higher volume standing fire killed spruce type. Old Johnny Lake is to the north the wetland complex is to the west. Outside the southwest corner boundary are small green patches of white spruce. Green patches of white spruce and shrubs separate operating unit OU 6 and OU 6a. Between operating unit OU 6 and operating unit OU 7 and OU 7c is a large area mixed with small green islands of white spruce and moderate levels of blowdown.

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|---------|----------------|---------------|---------------|---------------|--------------|
| 0-5     | flat   | Even    | upper          | Fresh         | Well-Rapid    | 0-2 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density     | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|------------------|-------------------------|---------------------------|------------------|
| 22.5      | Spruce willow grass | 16<br>15-26               | 18<br>10-35            | Moderately dense | 85                      | 1913                      | 844              |

Harvesting System: Patch cut with variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem 12 cm dbh Tops and limbs to be lopped and scattered.

Operability: due to access across wetland –Winter harvest only

Riparian Considerations: The OU 6 is buffered from Old Johnny Lake to the north (400 metre buffer) and wetland (dry bog) to the west (60 metre buffer).

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: The block cannot be seen from the Klondike Highway and has no other visual concerns.

Access: Requires access into operating units OU 11, OU 8, OU 7a and OU 7b to be built before accessing OU 6. This would require approximately 3.6 kilometres of road to access OU 6. There are 2 culvert requirements to cross stream channels (both stream class 5) one at the south end of OU 8 and the other between OU 7a and OU 7b. All access roads beyond OU 8 will be class 3 (seasonal winter only) due to access across wetland.

Special Concerns: None.

Understorey: 600-800 stems per ha Spruce regeneration and nil advanced-regen. Willow and some grass patches.

### 6.1.3. Operating Unit 6a Summary

**Boundary:** The operating unit follows the higher volume standing fire killed spruce type. Old Johnny Lake is to the north. Green patches of white spruce and shrubs separate operating unit OU 6 and OU 6a. Between operating unit OU 6a and operating unit OU 7 is a large area mixed with small green islands of white spruce and moderate levels of blowdown

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|---------|----------------|---------------|---------------|---------------|--------------|
| 0-5     | flat   | Even    | upper          | Fresh         | Well-Rapid    | 0-2 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density     | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|------------------|-------------------------|---------------------------|------------------|
| 6.8       | Spruce willow grass | 16<br>15-26               | 18<br>10-35            | Moderately dense | 90                      | 612                       | 270              |

**Harvesting System:** Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem 12 cm dbh. Tops and limbs to be lopped and scattered.

**Operability:** due to access across wetland –Winter harvest only

**Riparian Considerations:** The OU 6 is buffered from Old Johnny Lake to the north (400 metre buffer).

**Terrain Stability:** There are no terrain stability concerns pertaining to this operating unit.

**Visual Sensitivity:** The block cannot be seen from the Klondike highway and has no other visual concerns.

**Access:** Requires access into operating units OU 11, OU 8, OU 7a, OU 7b and OU 6 to be built before accessing OU 6a. This would require approximately 4.0 kilometres of road to access OU 6. There are 2 culvert requirements to cross stream channels (both stream class 5) one at the south end of OU 8 and the other between OU 7a and OU 7b. All Access roads beyond OU 8 will be class 3 (seasonal winter only) due to access across wetland.

**Special Concerns:** None.

**Understorey:** 600-800 stems per ha Spruce regeneration and nil advanced-regeneration. Willow and some grass patches.

### 6.1.4. Operating Unit 7 Summary

**Boundary:** The operating unit follows the higher volume standing fire killed spruce type. Outside the boundary is predominately blowdown. There are green patches of black and white spruce patches on all sides. To the south of OU 7 are two small wetlands.

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE   | LFH(OM) DEPTH | SOIL TEXTURE   |
|---------|--------|---------|----------------|---------------|-----------------|---------------|----------------|
| 0-8     | SW     | Even    | Upper-Crest    | Moist         | Moderately Well | 5-10 cm       | Silt loam Clay |

#### Harvest Stand Description:

| AREA (ha) | VEGETATION Class                       | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density     | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|--|---------------------------|------------------------|------------------|-------------------------|---------------------------|------------------|
| 10.6      | Spruce willow, patches of feather moss | 13<br>11-22               | 16<br>10-35            | Moderately dense | 60                      | 636                       | 281              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem 12 cm dbh. Tops and limbs to be lopped and scattered.

Operability: due to access across wetland –Winter harvest only

Riparian Considerations: There are 2 small marshes south of the operating unit .They are wetland class 2 and wetland class 3. South boundary is setback 60 and 100 metres; this setback exceeds reserves in Timber Harvest Guidelines

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: The block cannot be seen from the Klondike Highway and has no other visual concerns.

Access: Requires access into operating units OU 11, OU 8, OU 7a and OU 7b to be built before accessing OU 7. This would require approximately 3.0 kilometres of road to access OU 7. There are 2 culvert requirements to cross stream channels (both stream class 5) one at the south end of OU 8 and the other between OU 7a and OU 7b. All access roads beyond OU 8 will be class 3 (seasonal winter only) due to access across wetland.

Special Concerns: None.

Understorey: 600-800 stems per ha Spruce regeneration and nil advanced-regeneration. Willow and some grass patches.

#### 6.1.5. Operating Unit 7a/7b Summary

Boundary: The operating units follows the higher volume standing fire killed spruce type. Outside of boundary is predominately blowdown with green patches of black and white spruce on all sides. Small wetland is between the two operating units.

Site Conditions: (OU 7a/OU 7b have same site conditions)

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE   | LFH(OM) DEPTH | SOIL TEXTURE   |
|---------|--------|---------|----------------|---------------|-----------------|---------------|----------------|
| 0-5     | SW     | Even    | Middle-Upper   | Moist         | Moderately Well | 5 cm          | Silt loam Clay |

Harvest Stand Description: (OU 7a/OU 7b are identical in size and vol. descriptions)

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 0.6       | Spruce willow grass | 18<br>11-22               | 18<br>10-35            | Very dense   | 120                     | 72                        | 32               |

Harvesting System: Patch cut with Variable retention – All stems 12 cm dbh and greater to be cut. Retain all stem 12 cm dbh. Tops and limbs to be lopped and scattered.

Operability: due to access across wetland – Winter harvest only

Riparian Considerations: Between operating units OU 7a and OU 7b there is a narrow stream channel. This area would be classified primarily as a fen (wetland class 1 area is <1 ha) yet would likely become flowing creek (stream class 5) during snow melt and heavy rainfall. No harvesting will occur within 50 metres of this class 1 wetland which exceeds the Timber Harvest Planning and Operating Guidebook (THPOG) requirement of a 20 metre buffer.

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: The block cannot be seen from the Klondike Highway and has no other visual concerns.

Access: Requires access into operating units OU 11 and OU 8, to be built before accessing OU 7a and 7b. This would require approximately 3.0 kilometres of road to access OU 7. There are 2 culvert crossing requirements one at the south end of OU 8 and the other between OU 7a and OU 7b.

All Access roads beyond OU 8 will be class 3 (seasonal winter only) due to access across wetland.

Special Concerns: None.

Understorey: 400-600 stems per ha Spruce regeneration and nil advanced-regeneration. Willow and some grass patches

#### 6.1.6. Operating Unit 7c Summary

Boundary: The operating unit follows the higher volume standing fire killed spruce type. Outside of the boundary is predominately blowdown. Small creek is on the east and north of operating unit. A narrow green patch of white spruce runs along the edge of this creek. The wetland complex is to the west of the operating unit

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE   | LFH(OM) DEPTH | SOIL TEXTURE   |
|---------|--------|---------|----------------|---------------|-----------------|---------------|----------------|
| 0-5     | SW     | Even    | Middle-Upper   | Moist         | Moderately Well | 5 cm          | Silt loam Clay |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density     | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|------------------|-------------------------|---------------------------|------------------|
| 1.3       | Spruce willow grass | 15<br>11-22               | 16<br>10-35            | Moderately dense | 65                      | 85                        | 37               |

Harvesting System: Patch cut with Variable retention – All stems 12 cm dbh and greater to be cut. Retain all stem 12 cm dbh. Tops and limbs to be lopped and scattered.

Operability: due to access across wetland –Winter harvest only

Riparian Considerations: Small creek (stream class 5) with seasonal flow is east and north of operating unit, flows into wetland complex. Operating unit is set back at least 25 metres from this creek, which exceeds the timber guidelines of a 20 metre buffer. The

operating unit has an 80 metre set back from the wetland complex, which exceed the timber guidelines of a 60 metre buffer.

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: The block cannot be seen from the Klondike highway and has no other visual concerns.

Access: Requires access into operating units OU 11, OU 8, and OU 7a to be built before accessing OU 7c. This would require approximately 2.5 kilometres of road to access OU 7c.

All Access roads beyond O.U 8 will be class 3 (seasonal winter only) due to access across wetland.

Special Concerns: None.

Understorey: 400-600 stems per ha Spruce regeneration and nil advanced-regeneration. Willow and some grass patches

### 6.1.7. Operating Unit 8 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. Outside of the west side boundary is heavy blowdown. Small green white spruce patch is between OU 11 and OU. 8. The north east boundary is adjacent an active cutting area and OU 11a is adjacent to north boundary. Wetland complex is east of the operating unit.

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|---------|----------------|---------------|---------------|---------------|--------------|
| 0-5     | SW     | Even    | Upper          | Mod. Fresh    | Well          | 0-5 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 18.5      | Spruce willow grass | 16<br>12-25               | 16<br>7-25             | Very Dense   | 100                     | 1850                      | 817              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Summer option

Riparian Considerations: A 60 metre buffer as per the Timber Harvest Planning and Operating Guidebook (THPOG) separates the wetlands from the operating unit.

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: Some portions of operating unit may be seen from the Klondike Highway and has no other visual concerns.

Access: Requires access into operating unit OU 11 to be built before accessing OU 8. This would require approximately 1.0 kilometres of road to access OU 8. Could be class 2 (dry weather conditions) if summer harvest option is initiated or class 3 (seasonal winter mainline) if winter harvesting only.

Special Concerns: None.

Understorey: minimal regeneration and nil advanced-regeneration. Patches of willow and grass dominate the understory.

### 6.1.8. Operating Unit 9 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. The east boundary is adjacent to OU 10. South of boundary is a wetland and east of boundary is a small stream channel

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE                | LFH(OM) DEPTH | SOIL TEXTURE    |
|---------|--------|---------|----------------|---------------|------------------------------|---------------|-----------------|
| 0-5     | Flat   | Even    | Upper          | Moist         | Moderately Well To imperfect | 5-15 cm       | Silt loam, clay |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class          | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 12.0      | Spruce willow Feathermoss | 13<br>12-20               | 14<br>7-25             | Open         | 35                      | 420                       | 185              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Winter Harvest only

Riparian Considerations: OU. 9 is set back 60 metre from small marsh which exceeds Timber Harvest Planning and Operating Guidelines. West side of operating unit is setback 20 metres from small creek channel as per the Timber Harvest Planning and Operating Guidebook (THPOG) for stream class 5

Terrain Stability: There is some imperfect soil drainage with thick feathermoss areas within operating unit, harvesting on frozen conditions apply.

Visual Sensitivity: Operating unit can not be seen from the Klondike Highway and has no other visual concerns.

Access: Requires access into operating units OU 10 to be built before accessing OU 9. This would require approximately 1.0 kilometres of road to access OU 9. All access roads into OU 10 and OU 9 will be class 3 (seasonal winter only) due to some moist ground conditions.

Special Concerns: None.

Understorey: minimal regeneration and nil advanced-regeneration.

### 6.1.9. Operating Unit 10 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. The operating unit is between an active cutting area to the west and OU 9 to the east. North is heavy blowdown with some green patches of black and white spruce. South of boundary is a wetland.



Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE                | LFH(OM) DEPTH | SOIL TEXTURE    |
|---------|--------|---------|----------------|---------------|------------------------------|---------------|-----------------|
| 0-5     | Flat   | Even    | Upper          | Moist         | Moderately Well To imperfect | 5-15 cm       | Silt loam, clay |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class           | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|----------------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 9.7       | Spruce willow feather moss | 13<br>12-20               | 14<br>7-25             | Open         | 25                      | 240                       | 106              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Winter Harvest only

Riparian Considerations: OU 10 is set back 60 metre from small marsh which exceeds Timber Harvest Planning and Operating Guidelines.

Terrain Stability: There is some imperfect soil drainage with thick feathermoss areas within operating unit, harvesting on frozen conditions apply.

Visual Sensitivity: Operating unit can not be seen from the Klondike Highway and has no other visual concerns.

Access: Requires 700 metres of upgrading to existing access and 600 metres of new access. All access roads into OU 10 and OU 9 will be class 3 (seasonal winter only) due to some moist ground conditions.

Special Concerns: None.

Understorey: minimal regeneration and nil advanced-regeneration.

### 6.1.10. Operating Unit 11 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. Outside of the west boundary is an active cutting area, east side is heavy blowdown. Small green white spruce patch is between OU 11 and OU. 8

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|---------|----------------|---------------|---------------|---------------|--------------|
| 0-5     | SW     | Even    | Upper          | Mod. Fresh    | Well          | 0-5 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 14.5      | Spruce willow grass | 16<br>12-25               | 16<br>7-30             | Very Dense   | 100                     | 1450                      | 640              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Summer option

Riparian Considerations: Within OU 11 there are two ephemeral draws. Theses sites would be classified as wetland class 1 (area is <1ha); with a potential of stream flow during snowmelt and heavy rains. No harvesting will occur within 20 metres of these sites which exceed Timber Harvest Planning and Operating Guidebook (THPOG)

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: Some portions of operating unit may be seen from the Klondike Highway and has no other visual concerns.

Access: Requires 1.2 kilometres of upgrading to existing access and 2 kilometres of new access. There are 2 culverts for the ephemeral draws due to seasonal flow. Could be class 2 (dry weather conditions) if summer harvest option is initiated or class 3 (seasonal winter mainline) if winter harvesting only.

Special Concerns: None.

Understorey: minimal regeneration and nil advanced-regeneration. Patches of willow and grass dominate the understorey.

#### 6.1.11. Operating Unit 11a Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. Outside of the west side boundary is an active cutting area and OU. 8 is adjacent to the south boundary. Wetland complex is east of the operating unit

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|---------|----------------|---------------|---------------|---------------|--------------|
| 0-5     | SW     | Even    | Upper          | Mod. Fresh    | Well          | 0-5 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 14.5      | Spruce willow grass | 16<br>12-25               | 14<br>7-30             | Very Dense   | 80                      | 760                       | 336              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Summer option

Riparian Considerations: A 60 metre buffer as per the Timber Harvest Planning and Operating Guidebook (THPOG) separates the wetlands from the operating unit.

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: Operating unit can not be seen from the Klondike Highway and has no other visual concerns

Access: Requires 1.7 kilometres of upgrading to existing access and 500 metres of new access. Could be class 2 (dry weather conditions) if summer harvest option is initiated or class 3 (seasonal winter mainline) if winter harvesting only.

Special Concerns: None.

Understorey: minimal regeneration and nil advanced-regeneration. Patches of willow and grass dominate the understory.

#### 6.1.12. Operating Unit 12 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. Adjacent to either side is large green islands of white spruce. To the north is a large area that has previously been harvested. A small stream (class 5) is to the south of operating unit.

Site Conditions:

| SLOPE % | ASPECT | TERRAIN | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|---------|----------------|---------------|---------------|---------------|--------------|
| 0-5     | SW     | Even    | Upper          | Mod. Fresh    | Well          | 0-5 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|------------------|---------------------------|------------------------|--------------|-------------------------|---------------------------|------------------|
| 3.2       | Spruce willow    | 14<br>12-25               | 14<br>7-30             | Very Dense   | 100                     | 320                       | 141              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Summer option

Riparian Considerations: A 20 metre buffer as per the Timber Harvest Planning and Operating Guidebook (THPOG) separates the creek (stream class 5) from the operating unit.

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: Operating unit can not be seen from the Klondike Highway and has no other visual concerns

Access: Requires 500 metres of new access. Could be class 2 (dry weather conditions) if summer harvest option is initiated or class 3 (seasonal winter mainline) if winter harvesting only.

Special Concerns: None.

Understorey: 600 – 800 stems per ha of spruce regeneration and nil advanced-regeneration. Some patches of willow and grass.

#### 6.1.13. Operating Unit 13 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. Operating unit is set back from a small canyon with a creek to the west. To the east is a cut-over with an existing cat trail and seasonal drainage channel with the Klondike Highway above a steep embankment. The seasonal drainage channel and small wetland run between OU 15 and OU 13. To the south is heavy blown and cut over.

Site Conditions:

| SLOPE % | ASPECT | TERRAIN                 | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|--------|-------------------------|----------------|---------------|---------------|---------------|--------------|
| 0-5     | SW     | Even- with some rolling | Upper          | Mod. Fresh    | Well          | 0-5 cm        | Silt loam    |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class    | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density     | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|---------------------|---------------------------|------------------------|------------------|-------------------------|---------------------------|------------------|
| 11.3      | Spruce willow grass | 18<br>11-28               | 18<br>10-35            | Moderately dense | 75                      | 825                       | 374              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Summer option

Riparian Considerations: The seasonal drainage channel is classified as stream class 5 A 20 metre buffer as per the Timber Harvest Planning and Operating Guidebook (THPOG) separates this creek from the operating unit. There is a 60-100 metre set back from the canyon and creek (stream class 4) exceeding the timber harvesting guidelines. OU 15 and OU 13 are set back 60 metres from the channel and small wetland class 3 exceeding the timber harvesting guidelines.

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: Operating unit can be seen from some points along the Klondike Highway and has no other visual concerns

Access: Requires 400 metres of new access off the Klondike Highway. An access application and approval from Highways and Public Works is required to perform the work. 300 metres of upgrading to old cat line and 500 metres of new road required to access OU 13. A culvert will be installed where the proposed road crosses the drainage (stream class 5) at the north end of OU 13. All roads could be class 2 (dry weather conditions) if summer harvest option is initiated or class 3 (seasonal winter mainline) if winter harvesting only.

Special Concerns: None.

Understorey: minimal regeneration and nil advanced-regeneration. Patches of willow and grass dominate the understory.

#### 6.1.14. Operating Unit 14 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. The western end of operating unit overlaps two pre fire commercial logging blocks. (Note the old logging blocks have retention that was burned when fire ran through in 1998) Outside the eastern edge of boundary is a small creek.

Site Conditions:

| SLOPE % | ASPECT  | TERRAIN      | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE     | LFH(OM) DEPTH | SOIL TEXTURE   |
|---------|---------|--------------|----------------|---------------|-------------------|---------------|----------------|
| 0-10    | SW-flat | Even-gullied | Upper/Toe      | Mod. Fresh    | Well to imperfect | 5-15 cm       | Silt loam clay |

Harvest Stand Description:

| AREA (ha) | VEGETATION Class                  | AVG HEIGHT And Range (cm) | AVG DBH And Range (cm) | Stem Density     | EST. m <sup>3</sup> /ha | EST. Total m <sup>3</sup> | EST. Total cords |
|-----------|-----------------------------------|---------------------------|------------------------|------------------|-------------------------|---------------------------|------------------|
| 10.7      | Spruce, willow grass feather moss | 18<br>12-25               | 18<br>7-30             | Moderately dense | 85                      | 663                       | 293              |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Winter Harvest only

Riparian Considerations: A 20 metre buffer as per the Timber Harvest Planning and Operating Guidebook (THPOG) separates the creek with seasonal flow (stream class 5) from the operating unit.

Terrain Stability: There is some imperfect soil drainage with thick feathermoss areas within operating unit, harvesting on frozen conditions apply.

Visual Sensitivity: Operating unit can not be seen from the Klondike Highway and has no other visual concerns

Access: Requires 600 metres of upgrading to existing access and 600 metres of new access. All access roads will be class 3 (seasonal winter only) due to some moist ground conditions.

Special Concerns: None.

Understory: minimal regeneration and nil advanced-regeneration. Patches of willow, alder and grass dominate the understory.

### 6.1.15. Operating Unit 15 Summary

Boundary: The boundary follows the higher volume standing fire killed spruce type. Operating unit is set back from a small canyon with creek (stream class 4) to the west. To the east is the Klondike Highway above a steep embankment. A seasonal drainage channel with a small wetland (class 3) runs between OU 15 and OU 13. To the north is an active cutting area.

Site Conditions:

| SLOPE % | ASPECT  | TERRAIN                | SLOPE POSITION | MOIST. REGIME | SOIL DRAINAGE | LFH(OM) DEPTH | SOIL TEXTURE |
|---------|---------|------------------------|----------------|---------------|---------------|---------------|--------------|
| 0-10    | SW-flat | Even-with some rolling | Upper          | Mod. Fresh    | Well          | 0-5 cm        | Silt loam    |

Harvest Stand Description:

| AREA<br>(ha) | VEGETATION<br>Class     | AVG<br>HEIGHT<br>And<br>Range (cm) | AVG DBH<br>And<br>Range (cm) | Stem<br>Density     | EST.<br>m <sup>3</sup> /ha | EST.<br>Total<br>m <sup>3</sup> | EST.<br>Total<br>cords |
|--------------|-------------------------|------------------------------------|------------------------------|---------------------|----------------------------|---------------------------------|------------------------|
| 3.7          | Spruce, willow<br>grass | 18<br>11-28                        | 18<br>7-30                   | Moderately<br>dense | 60                         | 204                             | 98                     |

Harvesting System: Patch cut with Variable retention –All stems 12 cm dbh and greater to be cut. Retain all stem <12 cm dbh .Tops and limbs to be lopped and scattered.

Operability: Summer option

Riparian Considerations: OU15 and OU13 are set back 60 metres from the seasonal drainage channel and small wetland class 3 exceeding the timber harvesting guidelines. There is a 60-100 metre set back from the canyon and creek (stream class 4) exceeding the timber harvesting guidelines.

Terrain Stability: There are no terrain stability concerns pertaining to this operating unit.

Visual Sensitivity: Operating unit can be seen from some points along the Klondike Highway and has no other visual concerns

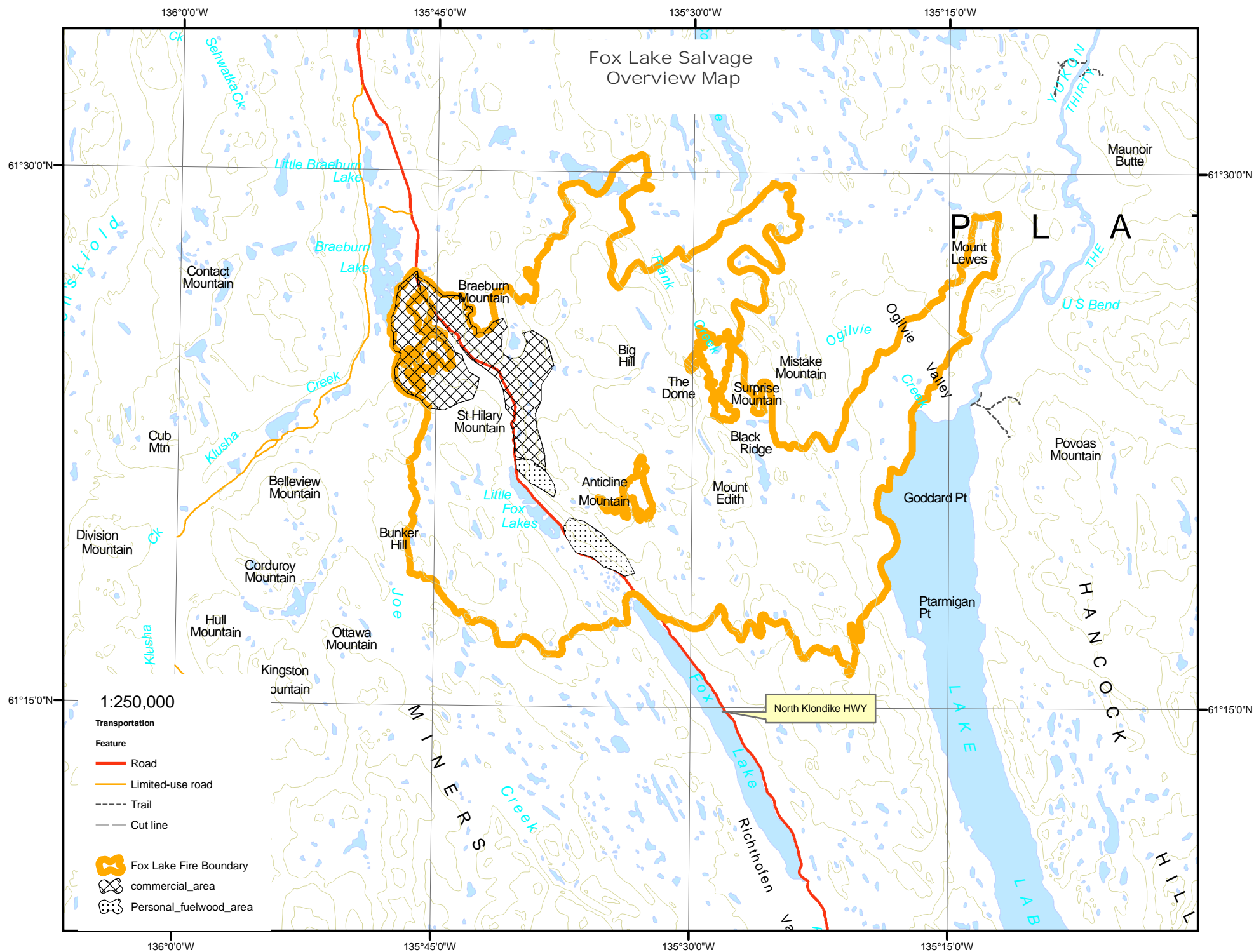
Access: Requires 900 metres of upgrading to the existing road and catline. Access will be from the north through the active cutting area. All roads could be class 2 (dry weather conditions) if summer harvest option is initiated or class 3 (seasonal winter mainline) if winter harvesting only.

Special Concerns: None.

Understory: minimal regeneration and nil advanced-regeneration. Patches of willow, alder and grass dominate the understory.

# **Appendix 1**

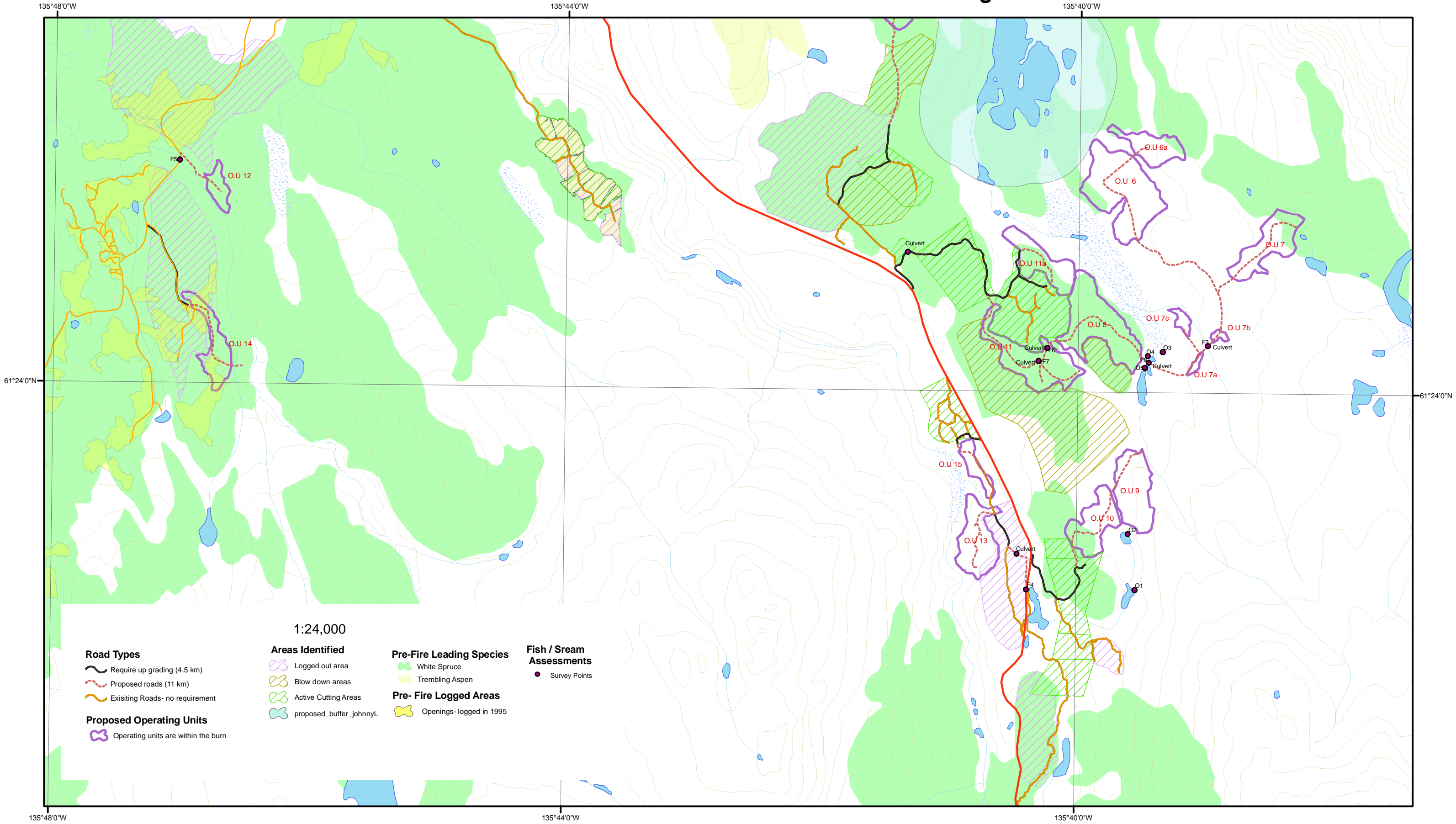
## **Fox Lake Overview Map**





**Appendix 2**  
**Fox Lake Operating Units 1 -15 Map**

# Fox Lake Commercial Fuelwood Planning Area



## **Appendix 3**

### **Fisheries and Stream/Lake Assessment Report**



Gartner Lee Limited

August 16, 2006

Dwayne Mukosky and Rob Legare  
Forest Management Branch  
Energy, Mines, and Resources  
Box 2703 (K-918)  
Whitehorse, Yukon  
Y1A 2C6

**Re: 60748 – Fox Lake Burn Fisheries and Stream/Lake Assessment**

### **Introduction**

This letter report outlines the results of work that was completed for the Fisheries and Stream/Lake assessment at the Fox Lake Burn. The Forestry Management Branch allows individuals with the proper permits to cut trees within the Fox Lake Burn for firewood. The Forestry Management Branch is currently in the process of adding new operating units for individuals to collect firewood within the Fox Lake Burn and needs to build roads for accessing these new operating units. Gartner Lee was asked to collect fisheries information and stream/lake assessments at locations of a potential road crossing or near proposed road construction.

This letter report describes the methods involved in collecting the fisheries and stream/lake assessments, outlines the results of our assessment work and provides recommendations for mitigating any environmental effects from the proposed road crossings and construction.

### **Methodology**

The fisheries assessment was conducted with a HT-2000 Battery Backpack Electrofisher. A 50-meter length of stream was measured and electro-shocked for approximately 10 minutes for each fisheries site. Where possible, an estimation of stream flow was measured using the float method. General site characteristics were also recorded, including: identification of riparian vegetation, channel characteristics (substrate, channel width and depth), amount of vegetation cover, and the habitat type. When water was present at a fisheries site; pH, conductivity and temperature were measured using a YSI multi-probe.



## **Results**

The results in this letter report are categorized by each site. For information regarding stream flow, pH, conductivity, temperature, GPS coordinates, and riparian vegetation, please refer to Table 1. Site photos are attached to this report in Attachment A.

### ***Fisheries Site 3 (F3)***

A narrow stream channel characterizes this site where open water (with stream flow) tends to disappear and reappear at varying locations (Photo 1). This area would be primarily classified as a fen, yet would likely become a flowing creek during snowmelt and heavy rainfall. The riparian zone was quite evident by a change in vegetation and is contained in a fairly wide area (50 meters, see photo's 2 and 3). The organic substrate composition is fairly poor habitat for fish and an electroshock survey of the area did not reveal the presence of any fish.

We would recommend that a culvert be installed at this potential road crossing to allow water to flow through this area, as we suspect this fen could experience fairly significant flows during snowmelt and heavy rainfall.

### ***Fisheries Site 4 (F4)***

This site is a drainage channel from a small headwater lake. At the time of our field visit the channel was completely dry. Although there is a culvert beneath the Klondike Highway (photo 4), it appears that this site rarely channels flow (photo 5). No difference in vegetation was observed at this site in comparison to the surrounding area; suggesting the absence of groundwater. This site would likely be classified as an ephemeral stream channel. No fish are present at this site.

Although it's apparent that flow rarely occurs through this area, we suggest a culvert be installed should a road cross this site. It's possible that this site would experience flow when the lake upstream is quite high. However, as the lake level lowers, the channel would eventually be dry and stay dry for the remainder of the year.

### ***Fisheries Site 5 (F5)***

This site contained the highest volume of stream flow in comparison to all other sites (Table 1). It is likely that this stream retains flow throughout the year. The stream channel contained a large volume of woody debris, which is ideal for fish habitat (photo 7). However, the channel substrate



consisted mainly of clay and silt, which is not considered suitable fish habitat. Not surprisingly, an electroshock survey of the area did not reveal the presence of any fish.

The bridge that crosses this creek (partially seen in photo 8) is starting to decay and we would recommend that it be replaced in the near future. Although no fish were found at this particular site, mitigation techniques should be employed to avoid contaminating this creek with fine sediment, which may affect possible fish habitat farther downstream.

#### ***Fisheries Site 6 (F6)***

This potential road crossing site is located in a small gully and is characterized by riparian vegetation (table 1, photo's 8 and 9); suggesting the presence of groundwater. This site does not have a distinct channel but the ground is quite damp and a few small areas have standing water. This site could be classified as a fen with the potential of having stream flow during snowmelt and heavy rains. No fish are present at this site.

It is recommended that a culvert be installed should a road be constructed through this area.

#### ***Fisheries Site 7 (F7)***

This site is similar to F6, however no standing water was visible. A change in vegetation occurs at this location (photo's 11 and 12) and the ground is damp suggesting the presence of groundwater. This site could also be classified as a fen with the potential of stream flow during snowmelt and heavy rains. No fish are present at this site.

It is recommended that a culvert be installed should a road be constructed through this area.

#### ***Fisheries Site 8 (F8)***

This site contained a narrow, incised stream channel that had considerable flow and was quite deep (approx. 0.5 meters) in some areas. Riparian vegetation was quite thick around this channel and sometimes covered the channel completely (photo's 12 and 13). It appears that this channel is simply an outlet of one marsh into another. The substrate of the creek was primarily organics; not suitable habitat for fish. A 50-meter electroshock survey of the channel revealed an absence of fish.

It is recommended that a culvert be installed at this location should a road be constructed here.



### ***Observation Site 1 (O1)***

This site contained a lake that is nestled between two hills (photo's 14 and 15). The lake is quite small (200 m in length) and appears to be quite deep ( $> 2$  meters). We also observed 7 ducks on the lake. These ducks were constantly diving to the bottom of the lake and likely searching for fish.

Any road construction activities near this lake should be avoided, considering that it contains waterfowl habitat and may contain fish.

### ***Observation Site 2 (O2)***

This observation site is approximately 250 meters north of site O1 (photo's 15 and 16.). This site has been classified as a marsh because it is much shallower ( $< 1$  meter) than site O1. This marsh flows, via groundwater, into the lake at site O1. No ducks were observed on this marsh.

As with site O1, road construction should be avoided at this site to conserve waterfowl habitat and potential fish habitat.

### ***Observation Site 3 (O3)***

This site is classified as a dry bog. No standing water was present during the field visit, however it appeared that water had been present in the past (photo's 17 and 18). This site was quite large in area (approx.  $1600 \text{ m}^2$ ). This site contained many blueberry shrubs, suggesting that this area could be important habitat for bears.

### ***Observation Site 4 (O4)***

This site would be classified as a small marsh. A bog environment surrounds the marsh (photo 19). There is a small channel of water that flows into the marsh (photo 20), however no channel of water was found flowing out of the marsh.

### ***Observation Site 5 (O5)***

This site would be classified as a large marsh. A bog environment surrounds the marsh (photo 21). There is observed flow out of the marsh (F8) but no observed flow into the marsh was found.



A flock of ducks were observed on the marsh (photo 22) indicating the possible presence of fish. Although, the ducks were not observed feeding or diving.

I trust that this summary of the 2006 Fox Lake Burn Fisheries and Stream/Lake Assessment meets your current needs. If you have any questions, or if we can be of further assistance, please do not hesitate to contact me at (867) 633-6474 ext. 34

Yours very truly,  
GARTNER LEE LIMITED

Chad E. Davey, M.Sc  
Environmental Scientist





**Table 1. Fox Lake Burn Fisheries and Stream/Lake Assessment, August 9th 2006**

Weather: Partly Cloudy with periods of rain/slee

| Station Name | Time  | Easting* | Northing* | Electrical Conductivity (uS/cm @ 25°C) | Temperature (°C) | pH   | Flow (L/s) | Habitat Type               | Substrate                                | Cover Type                               | Fish Presence | Riparian Vegetation   |
|--------------|-------|----------|-----------|--|------------------|------|------------|----------------------------|--|--|---------------|---|
| F3           | 13:13 | 465,300  | 6,807,842 | 376                                    | 6.70             | 7.73 | 15         | Fen                        | Organics (80%), Silt (20%)               | Instream veg (75%), Overstream veg (25%) | None          | Willow shrubs, blueberry shrubs, labrador tea, sedge  |
| F4           | 15:05 | 464,037  | 6,806,120 | -                                      | -                | -    | -          | Dry channel                | Organics (80%), Silt (20%)               | -  | -             | No riparian vegetation present  |
| F5           | 17:12 | 458,160  | 6,809,145 | 480                                    | 5.80             | 8.20 | 55         | Creek                      | Organics (30%), Silt (60%), Gravel (10%) | Instream veg (15%), Overstream veg (85%) | None          | Willow shrubs, raspberry shrubs, wild rose, sedge, standing dead spruce trees                   |
| F6           | 11:40 | 464,184  | 6,807,831 | -                                      | -                | -    | -          | Dry Fen / Overflow Channel | Organics (60%), Silt (40%)               | Instream veg (75%), Overstream veg (25%) | -             | Willow shrubs, fireweed, sedge, standing dead spruce trees                                      |
| F7           | 10:04 | 465,129  | 6,807,744 | -                                      | -                | -    | -          | Dry Fen / Overflow Channel | Organics (60%), Silt (40%)               | Instream veg (75%), Overstream veg (25%) | -             | Willow shrubs, fireweed, wild rose, sedge, horse tail fern, dead standing spruce trees          |
| F8           | 12:13 | 464,874  | 6,807,733 | 407                                    | 13.20            | 7.85 | 100        | Incised creek channel      | Organics (80%), Silt (20%)               | Instream veg (50%), Overstream veg (50%) | None          | Willow shrubs, sedge horsetail fern, standing dead spruce trees                                 |
| O1           | 16:15 | 464,744  | 6,806,061 | -                                      | -                | -    | -          | Small Lake                 | -  | -  | -             | Willow shrubs, sedge, standing dead spruce trees  |
| O2           | 16:50 | 464,748  | 6,806,524 | -                                      | -                | -    | -          | Marsh                      | -  | -  | -             | Willow shrubs, sedge, standing dead spruce trees  |
| O3           | 14:30 | 464,895  | 6,808,066 | -                                      | -                | -    | -          | Dry Bog                    | -  | -  | -             | Willow shrubs, Wharf birch, labrador tea, blueberry shrubs, standing dead and live spruce trees |
| O4           | 10:45 | 464,919  | 6,807,762 | -                                      | -                | -    | -          | Small Marsh                | -  | -  | -             | Willow shrubs, sedge, fireweed, standing dead spruce trees                                      |
| O5           | 11:00 | 464,828  | 6,807,674 | -                                      | -                | -    | -          | Large Marsh                | -  | -  | -             | Willow shrubs, Dwarf birch, schreibers moss. Spagnum moss, graceful cinquefoil                  |

Notes:

\* UTM Zone 12, NAD83

Sites O4 and O5 were collected by Rob Legare of the Forest Management Branch on August 28th, 2006

# Attachments



# **Attachment A**

## **Photo Log**



## - PHOTOGRAPHS -

**PHOTOGRAPH 1 (Site F3)**



This fisheries site contained several patches of open water with noticeable flow. Riparian vegetation was extremely thick. No fish were caught.

**PHOTOGRAPH 2 (Site F3)**



The riparian vegetation extends approx. 50 meters on either side of actual channel. This photo is taken in a southeastern direction.



## - PHOTOGRAPHS -

**PHOTOGRAPH 3 (Site F3)**



This photo of fisheries site F3 is taken in a northwest direction. The flagging tape indicated the location of a possible road crossing.

**PHOTOGRAPH 4 (Site F4)**



This photo shows the culvert on the west side of the Klondike Highway. There is no flow and appears to rarely receive flow given the lack of any observed channel.



## - PHOTOGRAPHS -

**PHOTOGRAPH 5 (Site F4)**



This photo was taken on the west side of the Klondike Highway looking north. The culvert shown in photo 4 is directly behind the photographer. Again, there is no noticeable channel.

**PHOTOGRAPH 6 (Site F5)**

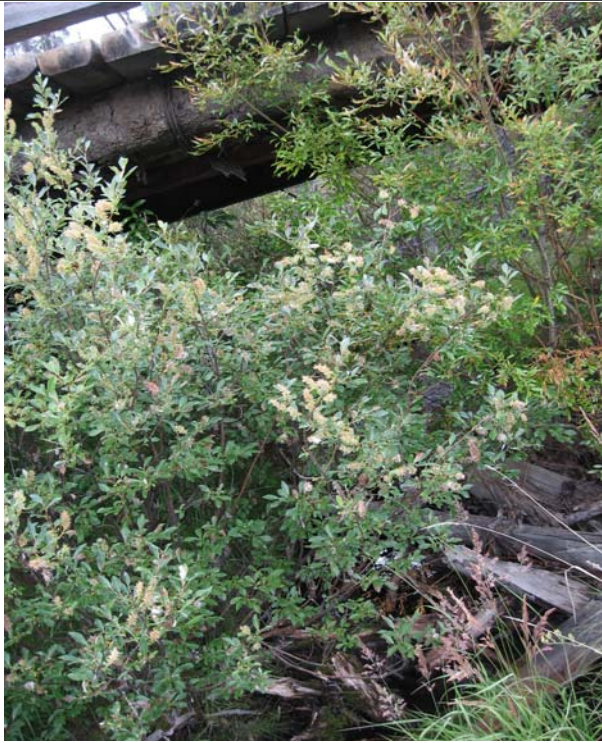


Site F5 had the most water flow of all sites sampled. This creek contained a high volume of large woody debris (LWD). No fish were caught.



## - PHOTOGRAPHS -

**PHOTOGRAPH 7 (Site F5)**



This photo is looking north along the creek at site F5, the bridge over the road is seen in the background. The riparian vegetation around this creek is quite thick and covered the entire channel in most places.

**PHOTOGRAPH 8 (Site F6)**



Site F6 was contained within a small gully; no discernable stream channel is evident. Likely a fen or overflow channel during heavy run/snowmelt. Photo is looking north.



**- PHOTOGRAPHS -**

**PHOTOGRAPH 9 (Site F6)**



This photo of site F6 is looking south. Many dead, standing spruce trees are present. The vegetation was consistent with riparian types, groundwater is likely present.

**PHOTOGRAPH 10 (Site F7)**



This site (F7) is denoted by a change in vegetation from the surrounding area, yet no distinct stream channel was observed. This photo is looking north.



## - PHOTOGRAPHS -

**PHOTOGRAPH 11 (Site F7)**



This site (F7) likely contains groundwater to support the riparian vegetation seen in this photo and is assumed to channel flow during heavy rainfall/snowmelt.

**PHOTOGRAPH 12 (Site F8)**



This site (F8) was characterized by a stream channel containing noticeable flow. Channel was fairly deep (incised) and contained thick instream vegetation. No fish were caught.



**- PHOTOGRAPHS -**

**PHOTOGRAPH 13 (Site F8)**



Vegetation was quite thick at Site F8, as seen here, it sometimes completely covered the stream channel.

**PHOTOGRAPH 14 (Site O1)**



Observation Site 1 (O1) contained a small lake, nestled between two hills. This photo shows the lake looking due east.



## - PHOTOGRAPHS -

**PHOTOGRAPH 14 (Site O1)**



This photo is of Site O1 looking south. There are several dead trees floating in the lake. The lake appears to be quite deep.

**PHOTOGRAPH 15 (Site O2)**



Observation Site 2 (O2) contained a small marsh that, via groundwater, flows into a small lake seen at Site O1.

**- PHOTOGRAPHS -**

**PHOTOGRAPH 16 (Site O2)**



The marsh at Site O1 is quite shallow in comparison to the lake at site O1.

**PHOTOGRAPH 17 (Site O3)**



Observation Site 3 (O3) contains a large bog. No standing water was present but ground was very moist. This photo is looking due south.



**- PHOTOGRAPHS -**

**PHOTOGRAPH 18 (Site O3)**



Site O3 contained many standing, dead spruce trees and willow shrubs.

**PHOTOGRAPH 19 (Site O4)**



Observation Site 4 (O4) contains a small marsh surrounded by a bog environment. The marsh was no deeper than 1 meter. This photo is looking north.



**- PHOTOGRAPHS -**

**PHOTOGRAPH 20 (Site O4)**



Site O4 had a small channel running into the marsh as seen here.

**PHOTOGRAPH 21 (Site O5)**



Observation Site 5 (O5) contains a large marsh surrounded by a bog environment. No flow into marsh was observed. This photo is looking due south.

- PHOTOGRAPHS -

PHOTOGRAPH 22 (Site O5)



Ducks were observed (right, middle of photo) on the large marsh at Site O5, an indication of the possible presence of fish.

## **Appendix 4**

**Timber Harvest Project for Fox Lake - YESAB Decision Document O.U. 1 - 15**



## ***Yukon Environmental & Socioeconomic Assessment Act*** **Decision Document – Final Decision Document**

This document meets the Yukon government's requirements as a Decision Body as set out in the *Yukon Environmental & Socioeconomic Assessment Act*

### **Decision Document Issued By**

|   |  |
|---|--|
| <b>YG Decision Body:</b>                | Territorial Minister, as authorized under section 7, to Director, EMR – Forest Management Branch |
| <b>Federal Decision Body(ies):</b>      | <i>[where applicable]</i>  |
| <b>First Nation Decision Body(ies):</b> | <i>[where applicable]</i>  |

### **Project**

|  |   |                                     |
|--|---|-------------------------------------|
| <b>Project Name :</b>  | <b>Timber Harvest Project for Fox Lake</b>                                | YESAA File Number <b>2006- 0296</b> |
| <b>Proponent Name:</b>   | Forest Management Branch, Energy Mines and Resources, Government of Yukon |                                     |
| <b>Project Description:</b><br>The principal project is the establishment of harvest blocks and operating units to prepare for a harvest of up to 10,261 m3 of fire killed fuel wood over a five year period from within the 1998 Fox Lake Burn area along the North Klondike Highway. The proposed project includes upgrading and building of road infrastructure to the designated harvest block and operating units.  |   |                                     |
| <b>Activities include:</b> <ul style="list-style-type: none"><li>• Establish 16 operating units ranging from 0.6 to 22 hectares in size and including an area up to 142 ha, for commercial wood harvest of fire killed fuel wood</li><li>• Establish 9 winter harvest operating units and 7 summer option harvest operating units.</li><li>• Upgrade 4.5 km of existing access roads and the construction of 11 kilometers of new roads within the Fox Lake Burn area to access operating units.</li><li>• Road construction will include stumping and removal of organics to mineral base a 4 meter width road and the establishment of crown and ditch lines and an 8 meter cleared right of way.</li><li>• Access to Operating Unit 13 will require new access of the Klondike Highway.</li><li>• Installation of five 300 millimeter culverts as per road configuration layout.</li><li>• Harvesting of fire killed trees up to 10261 m3 of wood from operating units over a 5 year period or a 2000 m3 harvest per year</li><li>• Fire killed fuel wood over 12 cm in diameter will be harvested by commercial operators using chainsaw and transported by 4X4 trucks.</li><li>• Restore affected areas using Silviculture System of maintaining a minimum 10% retention of woody debris, not including green patches in operating units, and allowing for natural regeneration. Tree planting will be considered where natural regeneration does not occur.</li><li>• Monitor of activities such as road construction, harvest operations and reforestation.</li></ul> |   |                                     |

### Other Decision Bodies

|  |  |
|--|--|
| <b>Other Decision Body Consultation:</b> | <i>[list decision bodies consulted, where applicable]</i>  |
| <b>Consolidated Decision Document:</b>   | <input type="checkbox"/> N/A<br><input type="checkbox"/> No<br><input type="checkbox"/> Yes <i>[list the decision bodies whose decision documents were consolidated, where applicable]</i> |

### Non-Self Governing First Nations

|  |  |
|--|--|
| <b>Non-self governing First Nation Consultation:</b> | <i>[list First Nation consulted, where applicable]</i> |
|--|--|

### Decision

|  |  |
|--|--|
| Pursuant to ss. 75, 76 and 80, the Yukon government has considered the YESAA Assessment and: |  |
| <input type="checkbox"/>   | a) Accepts the following recommendation(s) <ul style="list-style-type: none"> <li><i>[List Terms and Conditions and responsible YG department where applicable]</i></li> <li></li> </ul>   |
| <input type="checkbox"/>   | b) Rejects the following recommendation(s) for the following reason(s): <ul style="list-style-type: none"> <li><i>[List specific reasons]</i></li> <li></li> </ul>   |
| <input checked="" type="checkbox"/>  | c) Varies the following recommendation(s) as follows for the reason(s) specified:<br><br>The following recommendations remain unchanged: <ul style="list-style-type: none"> <li>Culverts should be sufficiently sized and installed to accommodate fish passage during high and low flow events (YESAA DO Recommendation # 12).</li> <li>No in-stream work should occur between April 15 and July 1 in any year (YESAA DO Recommendation # 13).</li> <li>Heavy machinery should be operated in a manner that minimizes disturbance to the bed and banks of any waterbody (YESAA DO Recommendation # 14).</li> <li>Machinery should be washed, refueled and serviced well away from any waterbody to prevent deleterious substances from entering the watercourse (YESAA DO Recommendation # 15).</li> <li>Effective temporary and permanent erosion and sediment control measures should be implemented on disturbed areas during and after construction to prevent sediment from entering any watercourse. These measures should be implemented and installed prior to the start of construction (YESAA DO Recommendation # 16).</li> </ul> |

|  |  |
|--|--|
|  | <ul style="list-style-type: none"> <li>• Excavated materials and debris should be disposed of above the high water mark and located such that they do not enter any watercourse (YESAA DO Recommendation # 17).</li> <li>• Works should be conducted under “dry” conditions. Where flows exist, an isolation technique should be used (YESAA DO Recommendation # 18).</li> <li>• If fish are encountered, a fish salvage operation should be conducted to prevent stranding of fish within the isolated area. Fish should be relocated, unharmed, to the main channel of the watercourse (YESAA DO Recommendation # 19).</li> <li>• Only clean coarse material (Gravel and rip rap) should be used for construction material. All fill material should be obtained from off-site and not from below the average high water level of any watercourse (YESAA DO Recommendation #20).</li> <li>• The proponent shall not disturb historic sites encountered during development of roads and no objects may be removed from heritage site (YESAA DO Recommendation # 29).</li> <li>• The proponent shall immediately suspend operation in the area within 30 m of the historic resources and immediately contact Government of Yukon, Heritage Resources (YESAA DO Recommendation # 30).</li> <li>• Any harvesting within operating units shall immediately suspend operations in the area within 30 m of the historic resources and immediately contact the Government of Yukon, Heritage Resources (YESAA DO Recommendation # 31).</li> <li>• Mature green trees shall not be harvested (YESAA DO Recommendation # 32).</li> <li>• Whenever possible, green trees shall not be removed during road construction (YESAA Do Recommendation # 33).</li> <li>• The organic soil layer and lesser re-vegetation shall not be stripped from portions of the rights of way not need for road construction (YESAA DO Recommendation # 36).</li> <li>• Effective temporary and permanent erosion and sediment control measures should be implemented on disturbed areas during and after construction to prevent erosion and soil instability. These measures should be implemented and installed prior to the start of the construction (YESAA DO Recommendation # 37.)</li> <li>• Petroleum products or other deleterious substances shall not be allowed to spread onto the ground (YESAA DO Recommendation # 38).</li> <li>• Equipment used to construct and maintain access roads shall be clean and free of fluid leaks (YESAA DO Recommendation # 39).</li> <li>• The proponent shall at all times have on site sufficient spill clean-up equipment and materials in readiness to clean-up all spills of petroleum products or other deleterious substances (YESAA DO Recommendation # 40).</li> <li>• The proponent shall have a Spill Contingency Plan in place to provide for response to and clean-up of any spills of petroleum products or other deleterious substances (YESAA DO Recommendation # 41).</li> </ul> |
|  | <p><b>The following recommendations are deleted with reasons provided:</b></p> <ul style="list-style-type: none"> <li>• OU 13 shall maintain a no harvest zone of 30 m from the change of riparian vegetation associated with the creek to upland vegetation (YESAA DO Recommendation # 8).</li> <li>• OU 15 shall maintain a no harvest zone of 30 m from the change of riparian vegetation associated with the creek to upland vegetation (YESAA DO Recommendation # 9).</li> </ul> <p>Rationale:<br/>The concern raised was the discrepancy between the map and what was stated in the report. When creating maps using NTS data and GPS data, i.e. OU boundaries, there is an expected</p>   |

|  |  |
|--|--|
|  | <p>discrepancy on the map when overlaying these features. We believe the discrepancy in the data display does not relate to an environmental concern.</p> <p>The proposed setbacks from the streams were based on stream classes that were classified by field experts from Gartner Lee. All setbacks or buffers met or exceeded the Timber Harvest Planning and Operations Guidebook recommendations for the wetland and stream in proximity to the operating units. The terrain in OU 13 and 15 is even with some rolling with well drained soils, which results in low risk of runoff causing erosion within the operating unit. The terrain features and setbacks are adequate mitigations to lower the potential adverse impact to the wetlands and streams from fuel wood cutting in the burn. Given the setbacks have met or have been increased from the Timber Harvest Planning and Operations Guidebook, there is very low risk of negatively affecting the streams.</p> <ul style="list-style-type: none"> <li>• New operating units shall be opened only after existing operating units are fully utilized (YESAA DO Recommendation # 25).</li> </ul> <p>Reason for deletion:<br/>Harvest scheduling and season of harvest will follow section 3.1.1 of the timber harvest project. However, the opening of new OUs may occur prior to being fully utilized. For example, 2 permits may be issued for harvest over two years. In year 2, a third applicant wants a permit. The 2 other permits are not fully utilized. The environmental impacts have been addressed for the area and the scheduling of these OU follow section 3.1.1. Therefore, it may be impractical to apply the above recommendation as stated.</p> <ul style="list-style-type: none"> <li>• Access roads to new operating units shall not be constructed until the new operating unit is opened (YESAA DO Recommendation # 26).</li> </ul> <p>Reason for deletion:<br/>Roads will be constructed in the most cost-effective manner. Demobilization and mobilization costs are the largest portion of road constructions costs of this type. Therefore the cost is not warranted.</p> |
|  | <p><b>The following recommendations are varied with reasons provided:</b></p> <ul style="list-style-type: none"> <li>• OU 6, 6a, 7, 7a, 7b, 7c shall not be harvested (YESAA DO Recommendation # 1).</li> <li>• Road proposed from OU 8 through the wetland complex at F8 to access OU 6, 6a, 7, 7a, 7b and 7c shall not be constructed (YESAA DO Recommendation # 2).</li> </ul> <p>Rationale:</p> <p>Due to the difference of opinions between the field experts who viewed this project on the ground as to the wetland classifications, riparian boundaries and potential mitigations, and due to the cultural concerns expressed by the First Nation, YESAA DO Recommendation # 1 and 2 for the scope of this project are accepted. However, OU 6, 6a, 7, 7a, 7b and 7c will be re-visited as a future project. Forest Management Branch will organize a joint field inspection for senior field staff from Forest Management Branch, federal and territorial Departments of Environment, and Ta'an Kwach'an Council this summer, late June to mid-July 2007. The purpose of the joint inspection will be to field verify and establish concurrence as to the wetland boundaries and classifications, riparian conditions, best mitigation options, and the best access route(s). At the same time, the First Nation cultural concerns will be reviewed on the ground in discussions with the First Nation representative(s). The joint field inspection will determine what acceptable mitigations can be devised to ensure that no significant adverse environmental damage nor unacceptable damage to cultural resources will occur, and what the specific mitigations will be. The field inspectors will be</p>   |

asked to develop joint consensus recommendations to the Responsible Authority for a new project submission in the future.

Replacing with:

*Harvesting within OU 6, 6a, 7, 7a, 7b, 7c and the road proposed from OU 8 will not go forth in this project.*

- OU 11a shall not be harvested (YESAA DO Recommendation # 3).
- Road proposed for the harvest of OU 11a shall not be constructed (YESAA DO Recommendation # 4).
- The eastern boundaries of OU 8 shall be reconfigured to maintain a minimum 60 m no harvest zone from the point of change of riparian vegetation associated with the marsh to upland vegetation (YESAA DO Recommendation # 5).
- The southern boundaries of OU 9 and 10 shall maintain a minimum 30 m no harvest zone from the point of change of riparian vegetation of the wetland complex to upland vegetation (YESAA DO Recommendation # 6).

Rationale:

The issue identified for 11a, eastern boundary of OU 8 and southern boundaries of OU 9 and 10 is the delineation and classification of the wetland. The delineation and classification of the wetland will be reassessed, prior to harvesting, in June to mid-July 2007, to determine its boundary and class during peak snowmelt runoff condition. Once delineation and boundary of the wetland is determined, the Timber Harvest Planning and Operations Guidebook management guidelines for wetlands will be considered along with site conditions of the operating units to determine an adequate mitigation. The Timber Harvest Planning and Operations Guidebook management guidelines are provided in the table below.

| Wetland Class | Size (ha) | Reserve Zone Width (m) | Management Zone Width (m) | RMA Width (m) |
|---------------|-----------|------------------------|---------------------------|---------------|
| 1             | <1        | 0                      | 60                        | 60            |
| 2             | 1-5       | 60                     | 40                        | 100           |
| 3             | >5        | 60                     | 140                       | 200           |

Replacing with:

*The wetlands in proximity to OU 11a, eastern boundary of OU 8, and southern boundaries of OU 9 and 10 will be re-assessed (delineated and classified) and adequate mitigation applied using the Timber Harvest Planning and Operations Guidebook, site conditions, other known guidebooks and best information available before harvesting can proceed.*

- OU 12 shall maintain a no harvest zone of 20 m from the change of riparian vegetation of the creek to upland vegetation (YESAA DO Recommendation # 10).
- OU 14 shall maintain a no harvest zone of 20 m from the change of riparian vegetation of the creek to upland vegetation (YESAA DO Recommendation # 11).
- The southern boundaries of OU 11 shall maintain a minimum 20 m no harvest zone from the point of change of riparian vegetation associated with the marsh to upland vegetation (YESAA Do Recommendation # 7).

Rationale:

|  |  |
|--|--|
|  | <p>The stream in proximity to OU 12 and 14 is a class 5. A 20 m buffer was applied to the stream as per the Timber Harvest Planning and Operations Guidebook. OU 12 is located in on the upper slope, has even terrain with well drained soil. OU 14 is located in upper/toe slope position; the terrain is even-gullied with a well to imperfect soil drainage. Operations in OU 12 and 14 with the 20 m buffer applied to the stream given the terrain features adequately mitigates for any adverse environmental impact.</p> <p>In OU 11 there are 2 ephemeral draws. These sites were classified as wetland class 1 with a potential of stream flow during snowmelt and heavy rains. A 20 m buffer was applied to these sites which exceed the recommendations provided in the Timber Harvest Planning and Operations Guidebook. The 20 m buffer adequately captures vegetation that may be associated with the ephemeral draw.</p> <p>Replacing with:<br/><i>Harvesting and road construction to OU 11, OU 12 and 14 will proceed as prescribed in the Timber Harvesting Project.</i></p> <ul style="list-style-type: none"> <li>• Harvesting of trees shall not occur within areas which raptor nests are visible or otherwise detected whether or not they are active (YESAA DO Recommendation # 21).</li> <li>• Harvest of trees shall not occur within 100 m of raptor nests and where possible ensure the connectivity of the buffer zone around the nest to the perimeter of the cut block (YESAA Do Recommendation # 22).</li> <li>• Avoid harvest and disturbing nest sites such as those of hawks and owls (YESAA DO Recommendation # 23).</li> <li>• When previously unidentified nest sites for birds of prey are encountered during harvesting operations, leave a patch maintain a minimum of 50m to conceal the nest and provide perching sites. Contact a Forest Officer for further instruction (YESAA DO Recommendation # 24).</li> </ul> <p>Rationale:</p> <p>If or when a raptor nest is identified during a harvesting operation, FMB or CS&amp;I should be contacted immediately and the situation assessed and mitigated to help ensure raptor nests are not impacted. This will be done with the assistance of biologist specializing in birds.</p> <p>Replacing with:</p> <p><i>If a raptor nest is found the proponent shall not harvest trees within 100m of raptor nest(s) and where possible ensure connectivity of the buffer zone around the nest to the perimeter of the cut block.</i></p> <p><i>Any active nests will be reported to the Whitehorse CS&amp;I Office and operations will not resume within 100m of the nest until a site visit by a biologists specializing in birds makes an evaluation.</i></p> <ul style="list-style-type: none"> <li>• Access roads shall be permanently decommissioned and rehabilitated upon completion of the harvest of the operating unit by leveling to an acceptable land form (YESAA DO Recommendation # 27)</li> <li>• Access roads shall be permanently decommissioned and rehabilitated upon completion of the harvest of the operating unit by the placement of large woody debris or other form of barricade (Eg. Planting willows, earth berm) across the road that will effectively impede the movement of</li> </ul> |
|--|--|

|  |  |
|--|--|
|  | <p>off road vehicles to use the road (YESAA DO Recommendation # 28).</p> <p>Rationale:<br/>Access management after harvesting is completed will involve the decommissioning and rehabilitation of roads as per section 3.1.1 of the timber harvest project. The issue identified is potential increases in hunting pressure. Below are measures that will impede access to the area:</p> <ul style="list-style-type: none"> <li>⇒ FMB are required to restore the entrance to the area by the fall of the year in which harvest is completed that is not conducive to vehicular travel. This will involve re-establishing the ditch and creating a berm at the entrance to the area.</li> <li>⇒ Culverts will be pulled after the project is completed</li> <li>⇒ Rolling the berm back onto the road.</li> <li>⇒ Placing coarse woody debris across roads where applicable.</li> </ul> <p>Planting of willow (<i>Salicaceae</i> – Willow family): Willow grows on almost any soil, but its extensive shallow roots need an abundant and continuous supply of moisture during the growing season, as well as soil free of competition. The willow trees have good seed crops almost every year and large volumes of seeds produced which are widely disseminated by wind and water. Root stocks of very young willow trees sprout prolifically. Willow currently exists within the OUs, thus a seed source already exists. If microsites exist on the road location, which are suitable for the establishment of willow, natural seeding will occur. In addition, the planting of willow will not impede ATV traffic. Therefore, the planting of willow will not be considered.</p> <p>Replacing with:</p> <p><i>The FMB will remove and restore the entrance to the area as per the conditions of the Temporary Access Permit #1552 which will help impede access. The construction of roads has to follow the Lands Act, which includes decommissioning and rehabilitation.</i></p> <p><i>Access roads will be decommissioned and rehabilitated upon completion of harvest by removing on culverts, rolling back berms, cross-ditching to disperse run-off into undisturbed areas, and other appropriate methods.</i></p> <p><i>Seasonal deactivation will require removal of snow fills along seasonal drainages so that water may drain along natural drains.</i></p> <p><i>To further impede access obstacles such as coarse woody debris placed across roads may be done to further discourage use.</i></p> <ul style="list-style-type: none"> <li>▪ Roads should only be constructed during dry periods using mineral soil and/or gravel or constructed during frozen ground conditions (YESAA DO Recommendation # 34).</li> <li>▪ Clearing debris and overburden from construction of roads and landings shall be separated and retained for re-vegetation and/or erosion control (YESAA DO Recommendation # 35).</li> </ul> <p>Rationale:<br/>Roads to be used for summer harvesting will be constructed using existing material and removing stumps. Overburden and lesser re-vegetation will be placed to the side and used where possible and appropriate during decommissioning and rehabilitation of roads. Summer road construction will occur during dry periods when conditions are neither too wet nor too dry. Winter roads will be constructed when the ground is frozen.</p> <p>Replacing with:</p> |
|--|--|

|  |   |
|--|---|
|  | <p><i>Roads will be constructed using existing material and removing stumps. Overburden and lesser re-vegetation is placed to the side and used where possible and appropriate during decommissioning and rehabilitation of roads.</i></p> <p><i>Summer road construction occurs during dry periods when conditions are neither too wet nor too dry. Winter road construction will occur when the ground is frozen.</i></p> |
|  |   |

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### Dates

|   |   |
|---|---|
| <b>Project Recommendation Issued:</b><br>January 29, 2007 | <b>Decision Document Issued:</b><br>February 21, 2007 |
|---|---|

### Recommendation Received From

|                     |                                     |  |
|---------------------|-------------------------------------|--|
| Designated Office   | <input checked="" type="checkbox"/> | Location:<br>Whitehorse                          |
| Executive Committee | <input type="checkbox"/>            |  |
| Panel               | <input type="checkbox"/>            | a) Panel of the YESAB                            |
|                     | <input type="checkbox"/>            | b) CEAA Panel                                    |
|                     | <input type="checkbox"/>            | c) Joint Panel (YESAB and other assessment body) |

### Authority

By signing below, the Yukon government has exercised its authority as per YESAA s. 75 or s. 76 to issue a decision document on this project.

Name: Gary Miltenberger

Position: Director, Forest Management Branch

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Original signed by [Delegated YG Decision Body]

### Copies Forwarded to (as required by YESAA s. 81)):

- ☐ Other Decision Bodies [list] \_\_\_\_\_
- ☒ Project Proponent [name] \_\_\_\_\_
- ☐ DAP Branch, Executive Council Office \_\_\_\_\_
- ☐ YESAB Designated Office [location] \_\_\_\_\_



- |  |                        |
|--|------------------------|
| <input type="checkbox"/> YESAB Executive Committee     | [when applicable]_____ |
| <input type="checkbox"/> Minister Environment (Canada) | [when applicable]_____ |
| <input type="checkbox"/> Yukon Surface Rights Board    | [when applicable]_____ |
| <input type="checkbox"/> Yukon Water Board             | [when applicable]_____ |
| <input type="checkbox"/> Land Use Planning Commission: | [when applicable]_____ |
| <input type="checkbox"/> Independent Regulatory Agency | [when applicable]_____ |
| <input type="checkbox"/> Other Body/Person as Required | [list] _____           |

# **Appendix 5**

**Little Fox Lake plan & Yesab Decision Document w/ Maps for O.U 16**

## Appendix A

### Form 1 (section 18)

### Project Proposal

#### PART 1 - PROPONENT CONTACT INFORMATION

1.1 Proponent (Name or Company Name): **Government of the Yukon, Energy, Mines, and Resources, Forest Management Branch**

1.2 Project Title: **Fox Lake Road Construction OU 16**

1.3 Mailing Address:

Street Address or P.O. Box **Box 2703, K-918**  
City/Town/Village **Whitehorse**  
Territory/Province **Yukon Territory**  
Postal Code **Y1A 2C6**  
Country **Canada**

Street Address (if different from above):

Street Name and Number **918.07 Alaska Highway**  
City/Town/Village **Whitehorse**  
Territory/Province **Yukon Territory**  
Postal Code **Y1A 6E7**  
Country **Canada**

1.4 Contact Person: **Doug Bishop**

Position: **Forest Operations Technician (Doug)**

Phone: **(867)633-7909** Fax: **(867)667-3138**

Alternate Phone: **(867)456-3999** Email: [Doug.Bishop@gov.yk.ca](mailto:Doug.Bishop@gov.yk.ca)

Contact Method Preference: ☒ e-mail ☐ fax ☐ mail

## PART 2 – REQUIREMENT FOR AN EVALUATION UNDER YESAA

2.1 Is your proposed project located in the Yukon?

☒ Yes

☐ No

2.2 Specify the Parts and Item numbers from Schedule 1 of the Regulations\* which apply to your proposed project.

| √        | Part   | Item       | Proposed Activity(s)  |
|----------|--|------------|---|
|          | 1: Mining  |            |   |
|          | 2: Industrial Activities                           |            |   |
|          | 3: Oil and Natural Gas                             |            |   |
|          | 4: Energy and Telecommunications                   |            |   |
|          | 5: Wildlife  |            |   |
|          | 6: Transportation                                  |            |   |
|          | 7: Nuclear Facilities and Nuclear Substances       |            |   |
|          | 8: Contaminants and Waste                          |            |   |
|          | 9: Water   |            |   |
|          | 10: Fisheries                                      |            |   |
|          | 11: Air Emissions                                  |            |   |
|          | 12: National Parks, Park Reserves & Historic Sites |            |   |
| <b>x</b> | 13: Miscellaneous                                  | 12/<br>13B | Moving earth with a self propelled power driven machine on crown land/ On crown land levelling, grading, clearing, cutting, or snow ploughing of the right-of-way of a powerline, pipeline, railway line or road. |

\* Assessable Activities, Exceptions and Executive Committee Projects Regulations

2.3 Specify which of the following circumstances apply to your proposed project.  
(Check all applicable)

☐ Proponent is a federal agency or federal independent regulatory agency.

Name of agency: \_\_\_\_\_

☐ Proponent has submitted an application for financial assistance for the project to a federal agency or federal independent regulatory agency.

Name of agency: \_\_\_\_\_

X Proponent is a territorial agency, municipal government, territorial independent regulatory agency or first nation and an authorization or the grant of an interest in land would be required for the project to be undertaken by a private individual.

2.3 cont'd

- ☐ Proponent requires an authorization or the grant of an interest in land to undertake the project from *(check and list all applicable)*:

| <input checked="" type="checkbox"/> |                                  | Agency (Department)     | Authorization (describe) |
|-------------------------------------|----------------------------------|-------------------------|--------------------------|
| <input type="checkbox"/>            | a federal government agency      |                         |                          |
|                                     |                                  |                         |                          |
|                                     |                                  |                         |                          |
| <input checked="" type="checkbox"/> | a territorial government agency  | Highways + Public Works | Highway Access Permit    |
|                                     |                                  |                         |                          |
|                                     |                                  |                         |                          |
|                                     |                                  |                         |                          |
| <input type="checkbox"/>            | an independent regulatory agency |                         |                          |
|                                     |                                  |                         |                          |
| <input type="checkbox"/>            | a municipal government           |                         |                          |
|                                     |                                  |                         |                          |
| <input type="checkbox"/>            | a first nation                   |                         |                          |
|                                     |                                  |                         |                          |
| <input type="checkbox"/>            | the Governor in Council          |                         |                          |
|                                     |                                  |                         |                          |

### PART 3 – PROJECT LOCATION

#### 3.1 Latitude and Longitude or UTM Coordinates (UTM Zone 8N\_) of proposed project

This project is located between 135.35.0 W and 135.38.0 W and 61.18.0 N and 61.20.0 N.

Common or Traditional Location Name: **Fox Lake Burn**\_\_\_\_\_

Quad\Block and Lot Number (if surveyed)\_\_\_\_\_

NTS Map Sheet #: **105E05**\_\_\_\_\_

#### 3.2 Assessment District(s) that the proposed project will be located in (*check all applicable*):

- ☐ Dawson (North)
- ☐ Mayo (Central)
- ☐ Haines Junction (Southwest)
- ☐ Watson Lake (Southeast)
- ☒ Whitehorse
- ☐ Teslin (South-central)

#### 3.3 First Nation territory(s) that the proposed project will be located in or in which it might have significant environmental or socio-economic effects (*check all applicable*):

|                                     |                 |                                     |                      |                                     |                        |
|-------------------------------------|-----------------|-------------------------------------|----------------------|-------------------------------------|------------------------|
| <input type="checkbox"/>            | Carcross/Tagish | <input checked="" type="checkbox"/> | Champagne & Aishihik | <input type="checkbox"/>            | Kluane                 |
| <input checked="" type="checkbox"/> | Kwanlin Dun     | <input type="checkbox"/>            | Liard                | <input checked="" type="checkbox"/> | Little Salmon/Carmacks |
| <input type="checkbox"/>            | Nacho Nyak Dun  | <input type="checkbox"/>            | Ross River Dena      | <input type="checkbox"/>            | Selkirk                |
| <input checked="" type="checkbox"/> | Ta'an Kwach'an  | <input type="checkbox"/>            | Teslin Tlingit       | <input type="checkbox"/>            | Trondek Hwech'in       |
| <input type="checkbox"/>            | Vuntut Gwitchin | <input type="checkbox"/>            | White River          | <input type="checkbox"/>            | Tetlit Gwich'in        |

#### 3.4 The proposed project will be located on:

- ☐ settlement land
- ☒ non-settlement land
- ☐ both settlement and non-settlement land

Will the proposed project be located within the boundaries of a Yukon community?

- ☐ Yes
- ☒ No

#### 3.5 Will the proposed project be located on the Yukon North Slope?

- ☐ Yes
- ☒ No

#### 3.6 Is there a regional land use plan in effect at the location of your proposed project?

- ☐ Yes

X No

3.7 Identify the nearest community(s) to the proposed project location.

Name: Whitehorse \_\_\_\_\_ Distance from Project 71.4 km

Name: \_\_\_\_\_ Distance from Project \_\_\_\_\_ km

3.8 Identify the watershed(s) and drainage region(s) your proposed project will be located in: Yukon River (headwaters) \_\_\_\_\_

Identify any watercourse(s) or waterbody(s) nearby to your proposed project (if any):

Little Fox Lake to North to north.

#### PART 4 – PROJECT PURPOSE

Describe the purpose of the proposed project and any alternatives considered.

The purpose of this project is to construct a 3335 metre long winter road to a commercial area for fuelwood (Operating Unit 16). The size of OU 16 (Operating Unit) is 78 hectares with an estimated volume of 50m<sup>3</sup>/hectare for a total volume of 3900m<sup>3</sup>. This is planned to be permits utilized by small commercial and personal operators seeking volumes of between 50 and 100 m<sup>3</sup>. We anticipate the OU will be active from three to five years. The logging method is likely to be truck and chainsaw. This will allow economic and social benefit to be realized from dead, fire-killed timber. This will also allow logged areas to be re-forested, saving many decades in re-establishing forest cover. There is a need for this project because of a lack of sufficient alternate local fuelwood opportunities to meet demand. Local users of fuelwood both commercially and on a personal basis will benefit from this project. An alternative to this project would be not to construct access to this fuelwood. Forest Management Branch would like to control the road construction in order to minimize the proliferation of roads and to keep environmental impacts of roading to a minimum. There are 2.0 hectares of clearing area for this winter road.

## **PART 5 – PROJECT DESCRIPTION**

Describe in sufficient detail all applicable aspects of the planning, construction, operation, ongoing restoration activities, decommissioning and reclamation phases of the proposed project. Attach a Sketch Plan or Site Diagram if appropriate.

See figure 1 map. Proceeding North from Whitehorse 71.4 km on the North Klondike Highway, on the west side of the highway at km 260 there is an access point applied for. This winter road will have a four metre wide running surface with pull outs and an additional metre of space to either side for snowploughing. Each road branch will have an area at the end to allow a trailer to be turned. Road to be machine constructed with a brush rake, and straight blade. No culverts are anticipated on this route, but if required can be added at a latter date. A ramped approach will need to be constructed to the highway. A gate is to be installed at the start of the road to minimize environmental and road damages during break-up or wet periods. Permit holders and the department of Energy, Mines, and Resources will have keys issued for use of the gate. On going maintenance will be completed by Forest Management Branch. We anticipate this road being used for a five year term. This road will be constructed through a government contract. It is anticipated that construction will take place over two weeks in the early winter.



## **PART 6 – DESCRIPTION OF EXISTING ENVIRONMENTAL AND SOCIO-ECONOMIC CONDITIONS**

Describe the environmental conditions in and around the project area including land, water, air, vegetation, wildlife, fish etc.

This proposed road is located in an old burn (Fox Lake Burn, 1998), on a north east facing ridge spur.

It is currently occupied by fire killed, dead standing trees and blow down and very little Black and White Spruce regeneration. Tree planting after harvest is being planned. It is located in the boreal spruce forest typical of the South central Yukon.

Charismatic megafauna present in the area include grizzly bears, black bears, moose, caribou, elk, wolves, coyotes, and lynx. No fish are in the direct area of the road.

The larger pond will receive a 60 metre no entry buffer as per the existing harvesting standards (see section 3.3.3.3. of the Timber Harvest Planning and Operating Guidebook). The other ponds will receive a 10 metre no entry buffer, although there are no operational standards that prescribe this, we feel it would help maintain bank structure.

The winter road location (see figure 2 map) midway between the two northern ponds was chosen to minimize creek crossings to one rather than crossing the multiple feeder streams to the west of the westernmost pond. No culverts or other watercourse crossing structures are anticipated on this route. No social or cultural resources are known on this site.

Describe the socio-economic conditions in the region and communities surrounding the proposed project and the extent to which people use, work, recreate or travel through the project area.

Resource based employment is an important factor in the local economy, whether fuelwood cutting, trapping, outfitting, or mining and mining exploration. Government, First Nation government (and to a lesser extent municipal government), and primary service delivery are still important locally. Tourism and service industry are also important local employers.

Of further note this location is adjacent to a primary tourism/travel corridor. This area is within the designated fuelwood planning area and has several developed fuelwood roads and active harvesting blocks in the surrounding area. Fuelwood harvesting actually offers an opportunity to reforest these stands and speed the recovery of this forest.

The region is sparsely populated and as such sees a low-level, low intensity, ongoing level of use for firewood cutting, fishing, hunting, hiking, trapping, berry picking, tourism, and recreation.

## **PART 7 – IDENTIFICATION OF POTENTIAL ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS AND PROPOSED MITIGATION MEASURES**

This is a key section in which potential positive and adverse environmental and socio-economic effects of the project are identified and discussed. For each potential adverse

effect list any proposed mitigation measures to minimize or avoid that effect as well as the significance of any residual effects. Add sections as required.

Effect: New access created to new unharvested areas of dead standing firewood

Mitigation: Winter only access, also gating of access.

Significance: Minor

Effect: Increased erosion

Mitigation: Minimal disturbance of soils.

Significance: Minor if addressed in a timely manner

Effect: Disturbance to wildlife

Mitigation: Yearly use limited to a small period of time (window).

Significance: Minor

## PART 8 – ADDITIONAL INFORMATION

Provide information respecting any matter a decision body has asked the Designated Office to take into consideration under paragraph 42(1)(i) of the Act.

Additional information or documentation specific to the activity being proposed can also be included in this section as it may assist in evaluating your project proposal.

Information could include:

- Applications for authorizations or permits required to undertake the project.
- Record of any public participation and comment. Include details on people and organizations involved, comments and issues raised and any subsequent changes to project planning.

See attached maps.

Also highway access permit applied for.

## PART 9 – ACKNOWLEDGEMENT AND CERTIFICATION

The information submitted in this Project Proposal is required for the purpose of conducting an evaluation under the *Yukon Environmental and Socio-economic Assessment Act*. I acknowledge that, pursuant to sections 119 and 120 of the *Act*, a copy of this Project Proposal will be placed on a public register and be available to any member of the public to review.

I understand that misrepresenting or omitting information required for the evaluation may cause delays in the evaluation or render the recommendations invalid.

I certify that the information provided is true and correct to the best of my knowledge and belief.



\_\_\_\_\_  
Proponent's Signature

\_\_\_\_ September 18, 2008 \_\_\_\_  
Date

## ***Yukon Environmental & Socioeconomic Assessment Act*** **Decision Document**

This document meets the Yukon government's requirements as a Decision Body as set out in the *Yukon Environmental & Socioeconomic Assessment Act*

### **Decision Document Issued By**

|   |  |
|---|--|
| <b>YG Decision Body:</b>                | Territorial Minister, as authorized under section 7, to Director-Department of Energy, Mines and Resources, Forest Management Branch |
| <b>Federal Decision Body(ies):</b>      | <i>[where applicable]</i>  |
| <b>First Nation Decision Body(ies):</b> | <i>[where applicable]</i>  |

### **Project**

|   |                                 |
|---|---------------------------------|
| <b>Project Name :</b> Commercial Fuelwood Harvest- Little Fox Lake  | YESAA File Number: 2008-0227    |
| <b>Proponent Name:</b>  | YG-EMR-Forest Management Branch |
| <b>Project Description:</b><br><br><p>The principal activity of this project to develop a 3335 meter long winter access road for Forestry activities. Also included in the scope of this project is the likely harvest of commercial firewood in a fire-killed timber area. The proposed project is located within the 1998 Fox Lake Burn approximately 80 km north of Whitehorse on the North Klondike Highway. The proposed project will occur over a two week period and remain operational for a five year period.</p> <p>Principal activities:</p> <ul style="list-style-type: none"> <li>▪ Clear the right-of-way for constructing approximately 3335 m of new access roads to a winter road standard</li> <li>▪ use of heavy equipment for road construction and maintenance</li> <li>▪ construct pullouts at the end of each road branch</li> <li>▪ install a gate access</li> <li>▪ establish a 78 ha operating unit for commercial harvest of fire killed fuel wood</li> <li>▪ harvest approximately 3900 m3 of standing and fallen fire-kill using a chainsaw and truck based on an estimate volume of 50 m3/ha</li> </ul> |                                 |

### **Other Decision Bodies**

|  |   |
|--|---|
| <b>Other Decision Body Consultation:</b> | <i>[list decision bodies consulted, where applicable]</i>   |
| <b>Consolidated Decision Document:</b>   | <input checked="" type="checkbox"/> N/A<br><input type="checkbox"/> No<br><input type="checkbox"/> Yes <i>[list the decision bodies whose decision documents were consolidated, where applicable]</i> |

### **Non-Self Governing First Nations**

|  |  |
|--|--|
| <b>Non-self governing First Nation Consultation:</b> | <i>[list First Nation consulted, where applicable]</i> |
|--|--|

## Decision

|   |  |
|---|--|
| Pursuant to YESAA s. 75, 76 and 80, the Yukon government has considered the assessment of this project and: |  |
| <b>X</b>  | <p>a) Yukon government accepts the following recommendation (inserted below)</p> <ul style="list-style-type: none"> <li><i>[List Terms and Conditions and responsible YG department, where applicable]</i></li> </ul> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>All the recommendations from the Whitehorse Designated Office are accepted. The recommendations will be part of the terms and conditions for timber harvest permits. These include:</p> <ul style="list-style-type: none"> <li>▪ The proponent shall ensure effective temporary and permanent erosion and sediment control measures are implemented on disturbed areas during and after construction to prevent erosion and sedimentation.</li> <li>▪ The road shall only be used under frozen ground conditions.</li> <li>▪ Operational activities shall only occur during frozen ground conditions.</li> <li>▪ Harvest of trees shall not occur within areas which raptor nests are visible or otherwise detected whether or not they are active.</li> <li>▪ Harvesting of trees shall not occur within 100m of raptor nests and where possible ensure the connectivity of the buffer zone around the nest to the perimeter of the cut block.</li> <li>▪ Avoid harvesting and disturbing nest sites such as those of hawks and owls.</li> <li>▪ When previously unidentified nest sites for birds of prey are encountered during harvesting operations, leave a patch and with a minimum radius of 50 m to conceal the nest and provide perching sites. Contact a forest officer for further instruction.</li> <li>▪ The proponent shall ensure the outer boundary of operating unit 16 is easily visible</li> <li>▪ The proponent shall inform all operators of operating unit 16 of the TKC settlement land S-169B and S-11B locations.</li> </ul> </div> |

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | b) Yukon government rejects the following recommendation (inserted below) for the following reason(s): <ul style="list-style-type: none"> <li><i>[List specific reasons]</i></li> </ul>   |
|                          | c) Yukon government varies the recommendation (inserted below) by changing the following term(s) and condition(s) for the reason(s) specified:<br><br>The following recommendations remain <b>unchanged</b> :<br><br>-----<br>The following recommendation shall be <b>varied</b> :<br><br>-----<br>The following recommendation shall be <b>deleted</b> :<br><br>----- |

#### Dates

|   |   |
|---|---|
| <b>Project Recommendation Issued:</b><br>December 2, 2008 | <b>Decision Document Issued:</b><br>December 19, 2008 |
|---|---|

#### Recommendation Received From

|                     |                          |  |
|---------------------|--------------------------|--|
| Designated Office   | <b>X</b>                 | Location: Whitehorse                             |
| Executive Committee | <input type="checkbox"/> |  |
| Panel               | <input type="checkbox"/> | a) Panel of the YESAB                            |
|                     | <input type="checkbox"/> | b) CEAA Panel                                    |
|                     | <input type="checkbox"/> | c) Joint Panel (YESAB and other assessment body) |



**Authority**

By signing below, the Yukon government has exercised its authority as per YESAA s. 75 or s. 76 to issue a decision document on this project.

Name: Diane Reed Position: Director (Forest Management Branch, Yukon Government)

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Original signed by [Delegated YG Decision Body]

**Copies Forwarded to (as required by YESAA s. 81)):**

- |   |  |
|---|--|
| <input type="checkbox"/> Other Decision Bodies                | [list] _____                           |
| <input checked="" type="checkbox"/> Project Proponent         | <u>YG-EMR Forest Management Branch</u> |
| <input type="checkbox"/> DAP Branch, Executive Council Office |  |
| <input checked="" type="checkbox"/> YESAB Designated Office   | [location] <u>Whitehorse</u>           |
| <input type="checkbox"/> YESAB Executive Committee            | [when applicable] _____                |
| <input type="checkbox"/> Minister Environment (Canada)        | [when applicable] _____                |
| <input type="checkbox"/> Yukon Surface Rights Board           | [when applicable] _____                |
| <input type="checkbox"/> Yukon Water Board                    | [when applicable] _____                |
| <input type="checkbox"/> Land Use Planning Commission:        | [when applicable] _____                |
| <input type="checkbox"/> Independent Regulatory Agency        | [when applicable] _____                |
| <input type="checkbox"/> Other Body/Person as Required        | [list] _____                           |

**Figure 2**

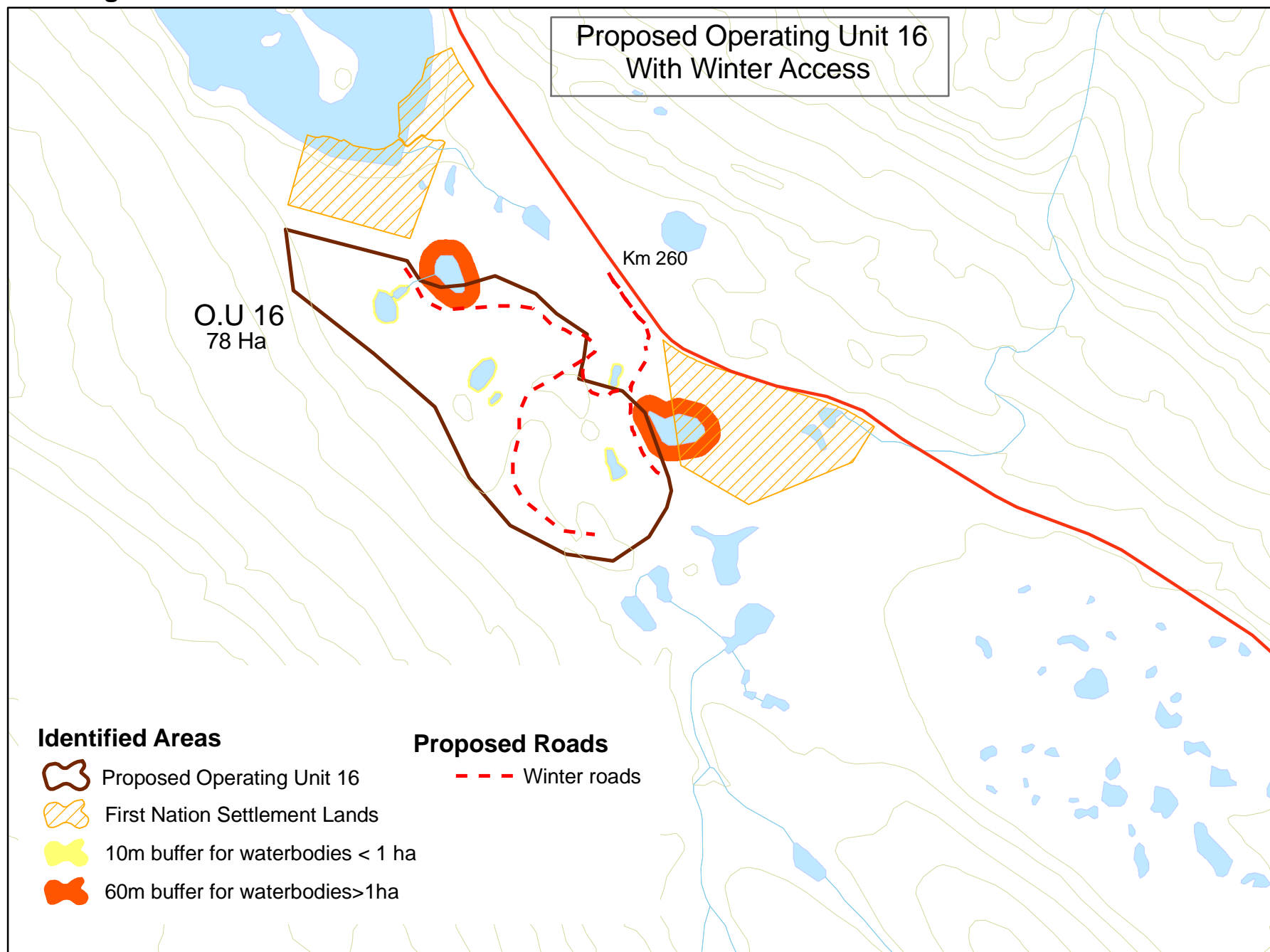




Figure 1

