Bear Creek
Timber Harvest Plan

Within
CHAMPAGNE AND AISHIHIK TRADITIONAL TERRITORY

FOREST MANAGEMENT BRANCH
ENERGY MINES AND RESOURCES
YUKON GOVERNMENT

PREPARED: June 7, 2011

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June 15/11
Date

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Date

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Executive Summary

The objective of this Timber Harvest Plan (THP) is to create harvesting opportunities in the forests affected by spruce bark beetle within the Champagne and Aishihik Traditional Territory (CATT). This THP combines the strategic direction found in the Strategic Forest Management Plan (SFMP), the Integrated Landscape Plan (ILP) and meets the requirements of the *Forest Resources Act* (FRA) and regulation.

This THP proposes seven operating units for forest harvesting, totaling approximately 542 gross hectares, with an estimated volume of 61,713 m^3, of which an estimated 39,396 m^3 is dead.

1.0 Introduction

1.0 Planning Area

This THP includes seven operating units which are located in the Bear Creek area, approximately 7-17 km north of Haines Junction (Appendix A). The identified operating units are within the Strategic Forest Management Plan (SFMP) planning area #9 Kloo Lake East. Most of these units have existing road access and a high percentage of spruce trees that have been killed by the spruce bark beetle. The approximate combined net operating area is 410 hectares, with an estimated total harvest volume of 61,713 m^3, of which an estimated 39,396 m^3 is dead.

1.1 Background

The Champagne and Aishihik Traditional Territory (CATT) has been the centre of one of the largest spruce bark beetle outbreaks in Canadian history. Since the early 1990s, more than 380,000 hectares of forest in the Southwest Yukon has been affected by this beetle outbreak. The most recent assessment of beetle activity suggests that the outbreak is in decline (NRCan; YG-EMR 2009).

Champagne and Aishihik First Nations (CAFN) and Yukon Government (YG) approved the SFMP in 2004, and in 2007 the Integrated Landscape Plan (ILP) was approved for the non-overlap Traditional Territory of CAFN (Section 2 lists all plans to date within CATT). The ILP identifies where timber harvesting can be planned, priorities for each management zone and guidelines for timber harvest planning.

This THP combines the strategic direction found in the SFMP and ILP and meets the requirements of the *Forest Resources Act* (FRA). The SFMP encourages the development of a forest-based economy that reflects local community needs and values.

The community of Haines Junction has a population of approximately 850. Historically, the economy of the region has been resource-based. Hunting, trapping, fishing and guiding are ongoing in the area. There is a history of mining, as well an emerging wilderness-based tourism economy. Commercial forest operations have a long history, presently there are numerous small and medium sized forestry operators in the Haines Junction area. The communities of Haines Junction and Whitehorse benefit from the harvesting of timber in this area. Economic activity is created by timber harvesting, which creates direct jobs to several commercial timber harvesting operations. Commercial harvesting also provides a source of heating fuels to these communities in the form of cord wood.

Past harvesting for timber and fuelwood has occurred near and within many of these operating units. Local skiers, hunters, ATV's, snowmobiles, and trappers use this area.

1.3 Eco-region[1]

The THP lies within the Ruby Range of the Boreal Cordillera Eco-zone. This region is one of the driest, as it lies in the rain shadow of the St. Elias Mountains. The

elevational range is 575 to 2,745 metres above sea level.

The vegetation is mainly boreal forest, with white spruce dominating the landscape below treeline (1,200 m). Black spruce, larch and pine are absent except for a few isolated trees. Trembling aspen occurs mixed with spruce in younger stands on warmer sites. Balsam poplar occurs along streams and on moister sites.

This ecoregion is characterized by either rolling plateau or subdued mountainous topography overlain by a variety of parent materials including moraine, colluvium, and glaciofluvial materials. The soils in the major valleys near Haines Junction are commonly eutric brunisols.

Land uses reflect high recreational, tourism, and hunting values in alpine and subalpine sections. The operating units within this THP are all located in the Simple Upland Natural Disturbance Type (NDZ 3) and consist of relatively uniform stands of pure White Spruce or White Spruce with a minor Trembling Aspen component.

2.0 Strategic Forest Planning

This THP is an outcome of the forestry planning processes that have been in progress for many years by CAFN, the Yukon Government and the Alsek Renewable Resource Council.

Timber harvesting activities in this area are consistent with the SFMP for CATT which was approved in 2004 and represents the culmination of many years of collaborative planning and negotiations at all levels of government and public. The SFMP was approved by Yukon and the Champagne and Aishihik First Nations governments for application on public lands and settlement lands specific to forest management activities. The people who use, work, recreate and travel through the project area have indicated through the SFMP that this area is a high priority area for timber harvesting activities with an integrated resource management philosophy.

The ILP was approved in 2007, it identifies where timber harvesting can be planned; priorities for each management zone; and guidelines for timber harvest planning.

The following is a list of relevant upper level plans, related plans and agreements that provide direction for this Timber Harvest Plan:

- **Letter of Understanding (CAFN, YG, DIAND, ARRC: 1998)**

  Agreement to coordinate the development, adoption and implementation of a regional forest management plan.

- **Devolution Transfer Agreement (2003)**

  Forest Resources on Yukon Lands delegated to Yukon Government from Federal Dept.

- **Strategic Forest Management Plan for the CAFN TT (December 2004)**

  The strategic plan identifies the main management priorities, and general goals and objectives for sustainable forest management.

- **Allowable Harvest Level (March 2006)**

  The allowable harvest level was developed through assessing various management scenarios. The selected harvest level was based on the allowable planning area and applying draft ILP management assumptions for net down of available volumes.

- **Integrated Landscape Plan (February 2007)**

  The ILP review committee developed a condensed version of the ILP and the Steering Group provided the final approval of this plan for use in timber harvest projects. The majority of draft guidelines were maintained, and a clearer set of management priorities were provided.

- **Habitat Connectivity Planning Recommendations for Forest Harvest Planning in the Champagne and Aishihik Traditional Territory (Final Edits, May 2008)**

  The connectivity planning sub group prepared 17 recommendations and guidelines addressing riparian-based connectivity network, as well as a map with primary and secondary wildlife habitat and movement corridors

- **Proposed Areas For Forest Development within the Champagne and Aishihik Traditional Territory (March 2010)**

  Review of all existing plans for the region with an aim to provide direction as to where forest development should occur next.

- **Strategic Baseline Assessment – Bear Creek Salvage Area Km 1650 (October 1996)**

  The objective of this plan was to direct salvage harvesting into moderate to heavy beetle infestations with a minimum of known conflicts.

3.0 Measures to Protect Forest Resources

3.1 Resource Management Guidelines

These operating units have been field reviewed by Forest Management Branch staff, and by a consultant to gather site and stand data. The final Site Plan preparation and timber permit terms and conditions will be completed prior to harvesting and will be consistent with SFMP and the ILP. The site plans will be based on this THP and describe the assessed values and prescribe specific actions regarding timber harvesting operations to manage, protect and conserve the natural resource features located in the operating unit and surrounding area.

The primary stand level management objectives for all of the operating units within this THP are:

- To salvage harvest spruce bark beetle affected stands.
- Regenerate a healthy stand of trees.

- Minimize impacts on wildlife habitat.

Operating Units 5 and 6 are within the Haines Junction Landscape Zone and will have the following as a primary objective:

- Reduce the fuel loading in the stand.

For the remaining Operating Units (8, 9, 11, 12 & 13), reduction of fuel load will be a secondary objective.

3.2 Silviculture Systems

The ILP defines a Silviculture system *as one or more planned series of treatments which sees a stand through at least one complete rotation, including harvesting, regeneration and stand tending. These systems will be chosen based on site conditions, and stand management objectives*[2].

The following guiding principles will be followed when preparing site plans:

- Each operating unit has been field reviewed to assess the site and stand characteristics.
- The most appropriate silviculture system will be chosen based on site specifics to meet management objectives.
- Natural regeneration of spruce and aspen will be the preferred method of reforestation to encourage a mixed wood forest. The site will be assessed approximately 4-7 years post harvest and if deemed necessary the operating units will be planted with spruce.
- The site plan will be completed prior to harvesting and will document the stand level objectives, silviculture system, ecological information, access management, soils and harvest method/season, and reforestation plan.

3.3 Land Use Coordination

This THP identifies known interests and values within the area and will mitigate concerns where feasible. The following is a list of known interests in this area:

- Trails used for skiing, horseback riding, walking, biking, “ATV’ing”, snowmobiling.
- Cross country ski trails that have been identified through the public consultation process, and any trails found during operations, will be managed in a responsible manner. Trails will be kept open and free of debris, as much as possible, and will be cleared of obstacles at the end of seasonal operations.

3.4 Fuel Abatement Guidelines

Strategic consideration to the size, shape and location of any development that would enhance fuel discontinuity should be a primary management focus in this zone. Silvicultural principles can be implemented to reduce fire hazard[3].

Fuel abatement is one of the primary objectives highlighted in upper level plans. The mortality of dead mature spruce trees due to spruce bark beetle ranges between 45% - 85% with an average of 60% and are in close proximity to Nygren Subdivision and the village of Haines Junction. Landscape zone fuel abatement objectives, as defined in the Integrated Landscape Plan, apply to this THP. Conducting fuel abatement treatments in this zone is not economically feasible and is not the intent of this project. On going FireSmart strategies being applied on private and public lands within the community zone combined with fuel abatement treatments in the interface zone, and broader level timber harvesting projects such as this in the landscape zone will all work together to add to overall community safety from large wildland fires. This THP is not a fuel abatement treatment but will work towards supplementing and achieving overall fuel abatement strategies. Removal of fuel load and appropriate guidelines for slash management must be considered.

The following fire hazard abatement strategies will be employed:

- Silviculture strategies will follow the most current and up to date silvicultural standards.
- Salvage harvesting and subsequent slash reduction will reduce the fire hazard on this site. Excess slash accumulated at landings will be burned to extinguishment.
- Dead spruce trees should be targeted for salvage. This will help reduce fuel loading and continuity in this area.
- Operations within the fire season will adhere to all current fire safety standards. Appropriate gear will be on site and operational closures may be used if fire hazard ratings are deemed too high.

3.5 Wildlife and Biological Diversity

One of the main goals of the SFMP is to maintain functioning forest ecosystems. Many landscape-level wildlife values and habitat requirements have been identified in the ILP, and through the identification of landscape level connectivity corridors. The spruce bark beetle has caused a large disturbance in the region. Timber harvesting is concentrating on beetle affected stands and will help promote regeneration of an early serial stage, healthy and vigorous forest. Harvested stands will continue to provide important wildlife habitat throughout the stages of succession. Several species of wildlife have been confirmed to occupy the THP area including moose, grizzly and black bears, and furbearers. The area has been identified as a moose over wintering area.

- Operating units BC06, BC08 (Appendix C) are fully within, the *High Wildlife Value* area, as identified in the ILP, therefore, an average of 25% basal area of the stand structure will be retained.
- Buffers, dispersed retention, clumps and clusters will all help to achieve retention targets.

- Advanced regeneration (poles, saplings, regeneration) will be maintained where feasible.
- Wind throw is a concern in this area; it is preferable to retain clumps of trees within the operating unit as opposed to single trees scattered throughout, in an attempt to minimize wind throw impacts.

3.6 Riparian and Water Resources

The ILP guidelines and the most recent standards will be followed to protect riparian and water resources in the region.

- Bear Creek runs along the eastern edge of these operating units. Buffers on the creek meet or exceed those defined in the Timber Harvest Planning and Operating Guidebook (THPOG) and when operational standards are in place, the THP will adhere to the approved standards.
- An un-named creek runs from north to south through the middle of the THP units and drains into Bear Creek. The integrity of the creek will be maintained. Proposed access into units 6, 8 & 13, crosses this creek (Appendix C & D). Section 5.0 speaks further to this point.
- There are no streams located within operating unit boundaries.
- The main riparian corridors within this area have been identified and mapped by the *Habitat Connectivity Planning Recommendations for Forest Harvest Planning in the Champagne and Aishihik Traditional Territory (May 2008*). The integrity of these corridors will be maintained.

3.7 Recreation, Tourism and Viewscape

Harvest boundaries are designed to minimize the impact on Viewscape within the major highway corridor. A strategy to protect Viewscape will be to maintain a healthy visual buffer between the highway and operating units.

- Operating unit boundaries have been designed following natural landscape features with irregular boundaries.
- At the Site Plan and permitting phase, trails that have been identified will be left clean of obstacles caused from harvesting operations.
- A 60 m visual buffer will be retained along the Alaska Highway in operating unit BC09 and BC11 (Appendix D &E). Only dead trees will be removed from visual buffers.

3.8 Heritage Culture

The objective is to protect known or newly identified heritage sites and values deemed valuable for Champagne and Aishihik First Nations and Yukon Government.

Known heritage sites will be identified through agency referral with the Department of Tourism and Culture - Heritage Branch staff as well as by CAFN, which has developed an independent approach for identifying first nation heritage values.

Identified heritage sites will be protected, with no logging allowed in the immediate area. If new sites are discovered during harvesting or access development, the area will be excluded from operations until a detailed assessment is conducted.

Heritage and archaeological assessments will be conducted, prior to harvesting, in a manner agreeable to YG and CAFN.

4.0 Harvest Section

4.1 Operating Unit Area and Volume Summaries

The following table provides an area and volume summary for all operating units covered by this THP. See Appendices B - L for operating unit maps and site and stand data tables.

Table 1: Operating Unit Estimated Area and Volume Summary

Operating Unit #	Gross Area (ha)	*Net Area (ha)	Estimated Total Vol** (m3)	Estimated Dead Vol (m3)	Harvest Method	Soil/Ground Conditions Required for Harvesting
BC05	56.7	49.3	3,303	1824	Ground based	Dry or Frozen
BC06	35.9	24.2	3,775	3,146	Ground based	Dry or Frozen
BC08	135.2	61.4	8,535	3,991	Ground based	Frozen Ground
BC09	75.6	54.5	15,424	10,627	Ground based	Dry or Frozen
BC13	103.7	103.7	14,000	8,503	Ground based	Dry or Frozen
BC11	71.3	63	9,576	6,048	Ground based	Dry or Frozen
BC12	63.4	54.2	7,100	5,257	Ground based	Dry or Frozen

* Net area is gross area minus reserves
** Volumes based on cruise data
*** Dry or frozen ground are defined as ground where soil displacement does not reasonably occur

Buffers within the operating units have been instituted for a number of varying reasons. They could be for aesthetics, wildlife habitat, heritage or archaeological concerns, riparian reserves, patches of non-desirable timber, or inoperable terrain.

Operating Unit Details:

BC05: This unit was partially harvested in 1998. There are mature white spruce stands with a large component of dead. The road from the gravel pit accesses the south of this unit and there are established landings that already exist. Through public consultation, cross country ski trails have been identified in this unit. The integrity of these trails will be re-established after any operations, as per section 3.7.

BC06: Merchantable timber types are located in three separate patches – survivors of past forest fires. Timber types are a mix of mature spruce killed by spruce bark beetle (over 80% by volume) and young, green spruce. There is an existing logging road in the most westerly patch.

BC08: Merchantable timber types are located in two separate patches. They are a

mix of mature spruce killed by spruce bark beetle, and young, green spruce. The area in between these patches is partially logged with most of the dead spruce removed. The westerly patch is currently being logged. There is an existing logging road to the area, and an existing winter trail through the logged portion.

BC09: Timber types are a mix of mature spruce killed by spruce bark beetle (over 70% by volume), young, green spruce and pure aspen patches. There is a substantial area within this unit that has been previously logged. The terrain is mostly flat with several steep knobs up to 30% slope. The operating unit is located next to Alaska Highway and can be accessed via the decommissioned pump station site.

BC13: Timber type is a mix of mature spruce killed by spruce bark beetle, young green spruce and aspen. The terrain is mostly flat with several gentle slopes not more than 5% slope. This unit requires new access to be constructed via BC8. The new access then goes through unit BC13, leaves it, and provides access to BC12.

BC11: Timber types are a mix of mature spruce killed by spruce bark beetle, young, green spruce and pure aspen. The terrain on this unit is mostly flat with several steep knobs up to 15% slope. Substantial area within this unit has been previously logged. Operating unit is located next to Alaska Highway and can be accessed via abandoned pump station site and old pipeline right of way.

BC12 Timber types are a mix of mature spruce killed by spruce bark beetle (over 70%), young, green spruce, and pure aspen patches. The terrain is mostly flat. There is a substantial area within this unit covered with small size spruce located on wet ground. This area will form an internal reserve. This unit can be accessed either via BC11 or via BC8. In both cases, roads cross a 0.5 m wide stream. Where stream crossings occur, crossings will meet standards and guidelines defined in the Timber Harvest Planning and Operating Guidebook (THPOG) and when operational standards are in place, the THP will adhere to the approved standards.

4.2 Harvest Scheduling and Season

Harvesting will be completed by licensees under the *Forest Resources Act*. Forest harvesting licenses are a contractual arrangement with the logging company that creates legally binding terms and conditions that the licensee must meet. Cutting authority will be given to licensees by means of a cutting permit. Specific obligations of the cutting permit will be defined in the permit terms and conditions. These obligations become standards for conducting logging operations and are enforceable under the *Forest Resources Act*.

Logging operations may include hand falling or feller buncher, rubber tired skidder; manual bucking or tracked processor; tracked or wheeled loader; and logging trucks.

- All operating units are appropriate for harvesting on dry and/or frozen ground with the exception of operating unit BC08. On BC08 harvesting will take place only when the ground is frozen to minimize soil compaction.

- Dry ground conditions mean that appropriate actions and methods will be employed to limit compaction and erosion of soils.
- Specifics in the site and stand data will help to determine appropriate terms and conditions at the permitting phase.

5.0 Access Management

Table 2 lists existing and proposed new development for each operating unit.

Table 2. Amount of Existing and Proposed Road in Bear Creek Operating units.

Operating Unit	Existing Road (km)	New roads (km)	Spur road construction (km)
BC05	2.7	0	0.3
BC06	2.2	0.6	0.7
BC08	3.8	1	1
BC09	1.2	0.8	.8
BC13	0	2.7	1.4
BC11	1.6	1	0.6
BC12	0	1.9	0

The ILP and the Habitat Connectivity Planning Recommendations report outline specific access management guidelines and recommendations to help reduce the impact of sustainable resource extraction on wildlife. Those guidelines have been incorporated into this THP. The following will also be considered when developing access:

- Existing road access to and within each unit should be utilized where feasible.
- All existing roads used for access will be maintained at their current level pending operational assessment of license holders' needs regarding size and type of equipment and trucks to be used for hauling.
- Any newly constructed roads will be Forest Resource Roads (FRR). Access on FRR will be restricted as per the Act and corresponding regulations. All FRR will have a designated maintainer and will be decommissioned upon completion of operations.
- All proposed "in-block" roads will be temporary roads and will be decommissioned as per current standards.
- The Site Plans will specify the details regarding restoration, decommissioning and reclamation of specific roads and trails.

- The proposed locations of proposed roads have been identified. Final location and size of these roads may be altered to fit the operational needs of the license holder. Any alterations will be within the intent of the guidelines in this THP.
- An existing creek crossing is proposed for access into operating units 6, 8 &13. All pertinent Acts, regulations and standards and guidelines as defined in the THPOG regarding creek crossings will be adhered to for operations under this THP. In the future, when operational standards and guidelines are developed to replace the THPOG, those standards will be adhered to.

6.0 Timber Harvest Project Referral and Approval Process

This THP has been reviewed by Yukon Environment, and Champagne and Aishihik First Nations. The Department of Environment has identified known wildlife values. CAFN will work with YG Heritage Branch to conduct archaeological and heritage field assessment.

Community consultation regarding proposed areas and activities was done by means of a public meeting and ongoing conversations with interested parties or individuals. As a result of consultation, two operating units, BC19 and BC16, have been removed from further development under this THP. BC19 is in close proximately to houses and should be considered in future plans for fuel abatement activities. BC16 was considered too far from the other operating units and would unnecessarily open up access to that area. BC16 offers good harvesting opportunities and should be considered for development in future plans. Concerns regarding access would have to be identified and addressed.

Appendices

Appendix A: Bear Creek Timber Harvest Plan Overview Map

Appendix B: Bear Creek THP Operating Unit 05 Map

Appendix C: Bear Creek THP Operating Unit 06 & 08 Map

Appendix D: Bear Creek THP Operating Unit 09 & 13 Map

Appendix E: Bear Creek THP Operating Unit 11 & 12 Map

Appendix F: BC05 Site and Stand Data

Appendix G: BC06 Site and Stand Data

Appendix H: BC08 Site and Stand Data

Appendix I: BC09 Site and Stand Data

Appendix J: BC11 Site and Stand Data

Appendix K: BC12 Site and Stand Data

Appendix L: BC13 Site and Stand Data

Appendix M: Representations Summary

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[1] Information taken from *Ecoregions of the Yukon Territory, Biophysical Properties of Yukon Landscapes, 2004*

[2] Page 13, Section 3.2, Integrated Landscape Plan for the Champagne and Aishihik Traditional Territory, February 21, 200778

[3] *Page 9, Section 2.7.1b)iii)* Integrated Landscape Plan for the Champagne and Aishihik Traditional Territory, February 21, 200

348000
352000
356000
6752000
6748000
6744000
6740000

ALASKA HIGHWAY
HAINES FAIRBANKS PIPELINE RW
FOOTHILLS PIPELINE R/W
Bear Creek
Marl
TRENCH
Creek
Creek
HIGHWAY
ALASKA
115A13-097
115A13-135
115A13-033
115A13-042
115A13-040
115A13-032
115A13-097
115A13-064
-038
-039
-041
GRAVEL PIT RESERVES
GRAVEL PIT RESERVES
NPA Industrial Reserve Material Stockpile
YG Gravel Pit
Lot 8
Lot 1008
Lot 1048
GR L 1020
GR L 896
CAFN S-33FS4
CAFN S-4B1
CAFN S-39BM
CAFN S-4FS
CAFN C-1B
BC-12
BC-13
BC-11
BC-09
BC-08
BC-06
BC-05
PC-22
39
41
38
23
11
6
15
42
Nygren Subdivision
Kluane Wildlife Sanctuary
Kluane National Park of Canada
DEZADEASH

Project Specific Features

- Existing Access Route
- Proposed Access Route
- Operating Units
- Proposed Reserves
- Permanent Sampling Plots
- CFS Forest Health Plots

Administrative Features

- Surveyed Parcel
- Surveyed Easements
- Agriculture Tenure
- Land Disposition
- Notations
- Kluane National Park

First Nation Settlement Lands

- Category A
- Category B
- Fee Simple

Past Harvest

- Patch Cut
- Partial Cut
- Patch Cut with Retention
- Landing
- Island

Connectivity Corridors

- CPSG Riparian Connectivity
- Riparian Buffer

Fire History

- 1998 Fire

Date: June 2, 2011
Projection: NAD 1983 UTM Zone 8

Digital Data Sources

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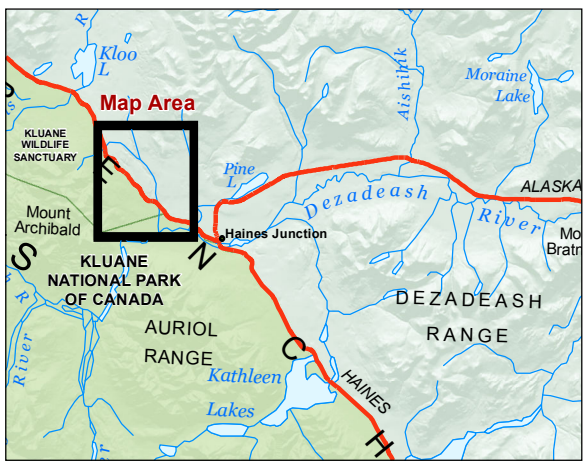
Digital Elevation Models (30 metre and 90 metre) provided by Yukon Government Geomatics spatial data warehouse - www.geomaticsyukon.ca.

Appendix A
Bear Creek Timber Harvest Plan

Overview



Yukon
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Forest Management Branch
Yukon Territory

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Kilometers

Map scale 1:50,000 when printing on 11"x17" paper.

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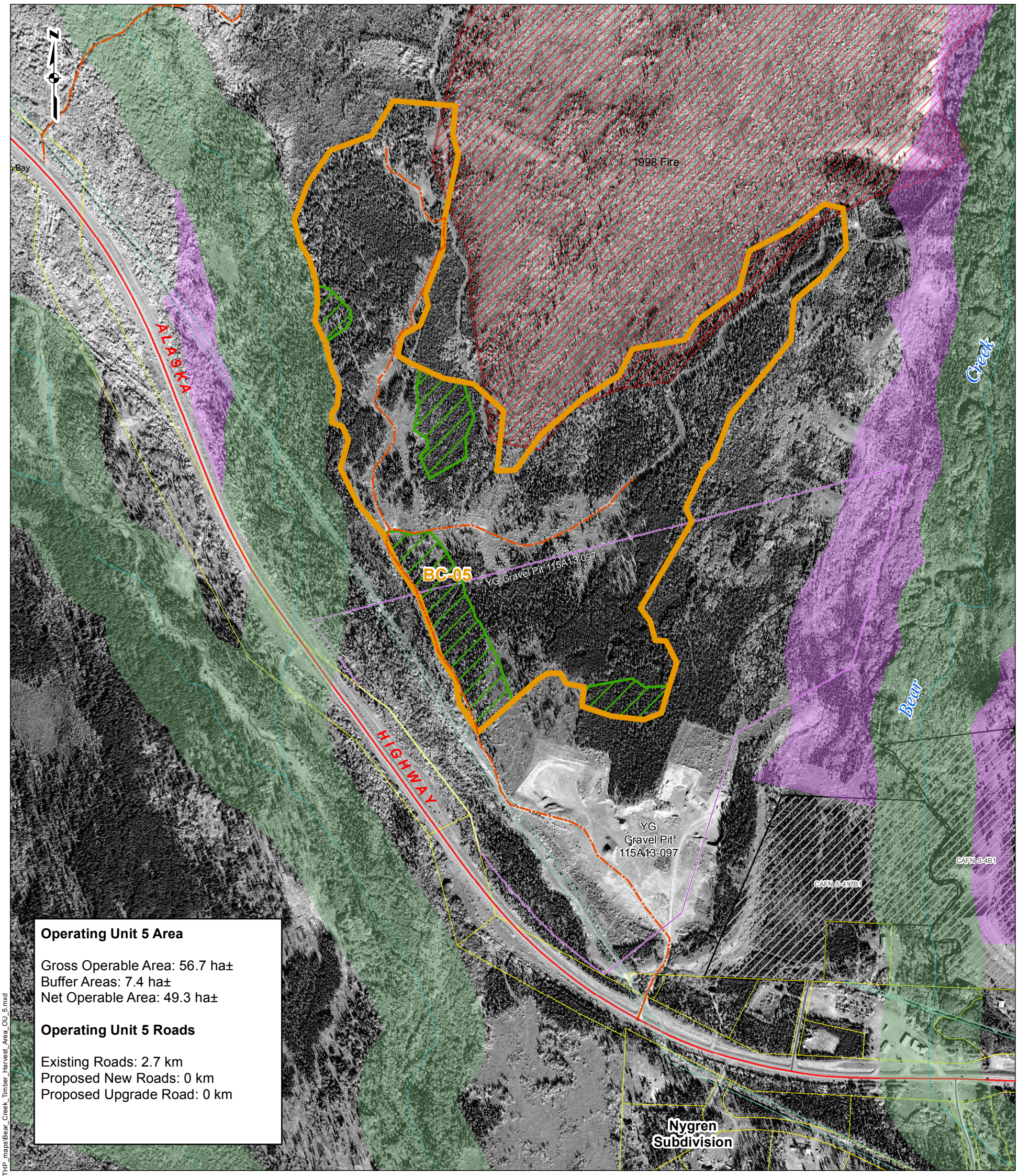

Operating Unit 5 Area

Gross Operable Area: 56.7 ha±
Buffer Areas: 7.4 ha±
Net Operable Area: 49.3 ha±

Operating Unit 5 Roads

Existing Roads: 2.7 km
Proposed New Roads: 0 km
Proposed Upgrade Road: 0 km

Project Specific Features

- Existing Access Route
- Proposed Access Route
- Operating Units
- Buffers
- Permanent Sampling Plots
- CFS Forest Health Plots

Administrative Features

- Surveyed Parcel
- Surveyed Easements
- Agriculture Tenure
- Land Disposition
- Notations

Connectivity Corridors

- CPSG Riparian Connectivity
- Riparian Buffer

First Nation Settlement Lands

- Category A
- Category B
- Fee Simple

Fire History

- 1998 Fire

Date: June 2, 2011
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Yukon
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Yukon Territory

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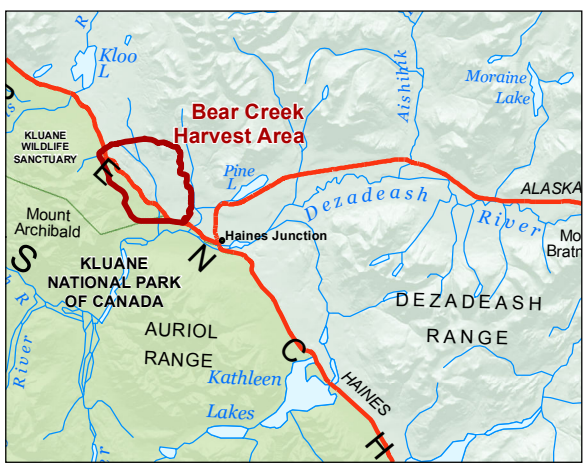
Meters

Map scale 1:8,000 when printing on 11"x17" paper.

Appendix B
Bear Creek Timber Harvest Plan

Operating Unit 5



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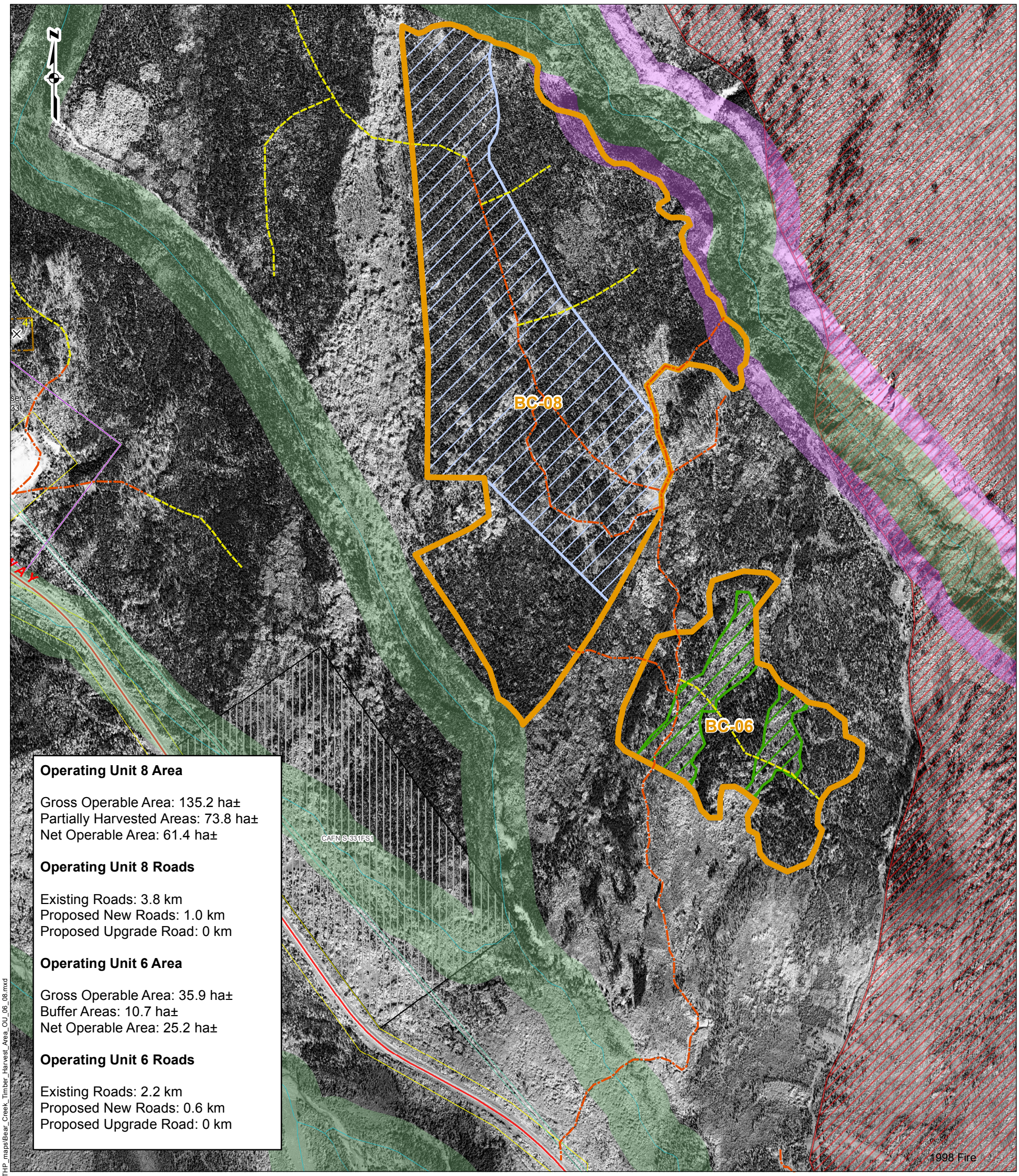

Operating Unit 8 Area

Gross Operable Area: 135.2 ha±
Partially Harvested Areas: 73.8 ha±
Net Operable Area: 61.4 ha±

Operating Unit 8 Roads

Existing Roads: 3.8 km
Proposed New Roads: 1.0 km
Proposed Upgrade Road: 0 km

Operating Unit 6 Area

Gross Operable Area: 35.9 ha±
Buffer Areas: 10.7 ha±
Net Operable Area: 25.2 ha±

Operating Unit 6 Roads

Existing Roads: 2.2 km
Proposed New Roads: 0.6 km
Proposed Upgrade Road: 0 km

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Project Specific Features

- Existing Access Route
- Proposed Access Route
- Operating Units
- Buffers
- Partially Harvested Areas
- Permanent Sampling Plots
- CFS Forest Health Plots

Administrative Features

- Surveyed Parcel
- Surveyed Easements
- Agriculture Tenure
- Land Disposition
- Notations

Connectivity Corridors

- CPSG Riparian Connectivity
- Riparian Buffer

First Nation Settlement Lands

- Category A
- Category B
- Fee Simple

Fire History

- 1998 Fire

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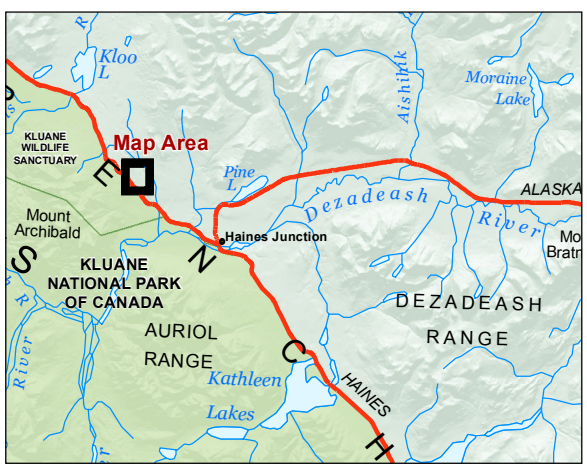
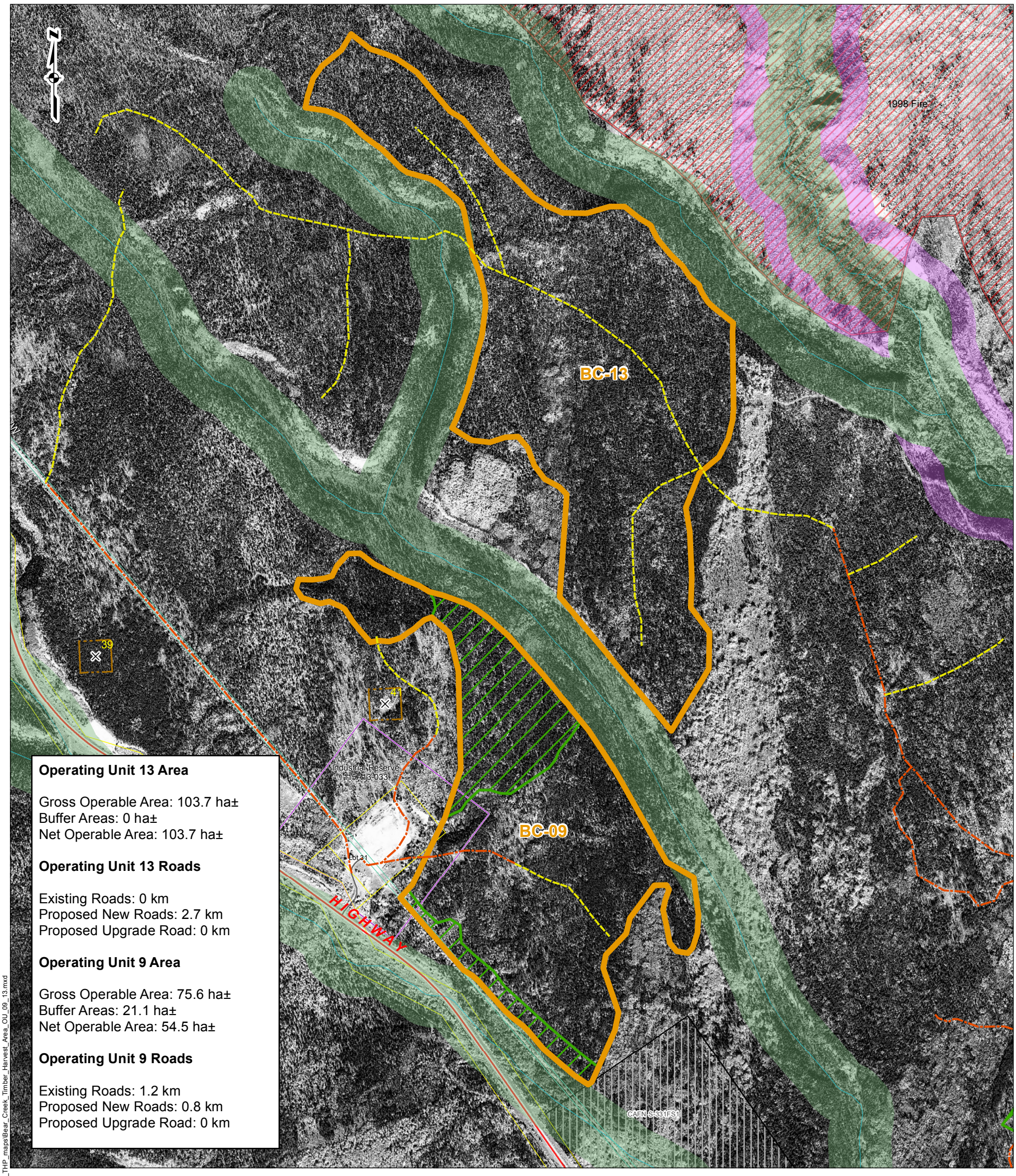
0 50 100 200 300 400 500
Meters

Map scale 1:12,500 when printing on 11"x17" paper.

Appendix C
Bear Creek Timber Harvest Plan

Operating Units 6 & 8





Operating Unit 13 Area

Gross Operable Area: 103.7 ha±
Buffer Areas: 0 ha±
Net Operable Area: 103.7 ha±

Operating Unit 13 Roads

Existing Roads: 0 km
Proposed New Roads: 2.7 km
Proposed Upgrade Road: 0 km

Operating Unit 9 Area

Gross Operable Area: 75.6 ha±
Buffer Areas: 21.1 ha±
Net Operable Area: 54.5 ha±

Operating Unit 9 Roads

Existing Roads: 1.2 km
Proposed New Roads: 0.8 km
Proposed Upgrade Road: 0 km

J:\Operations\Forest_Practices\Timber_Harvest_Project\ChampagneAshihiki\Bear Creek\MXD\Draft_BearCreek_THP_maps\Bear_Creek_Timber_Harvest_Area_OU_09_13.mxd

Project Specific Features

- Existing Access Route
- Proposed Access Route
- Operating Units
- Buffers
- Permanent Sampling Plots
- CFS Forest Health Plots

Administrative Features

- Surveyed Parcel
- Surveyed Easements
- Agriculture Tenure
- Land Disposition
- Notations

Connectivity Corridors

- CPSG Riparian Connectivity
- Riparian Buffer

First Nation Settlement Lands

- Category A
- Category B
- Fee Simple

Fire History

- 1998 Fire

Date: June 2, 2011
Projection: NAD 1983 UTM Zone 8

Digital Data Sources

1:50,000 Canvec features downloaded from spatial data warehouse - www.geogratis.gc.ca. Her majesty the Queen in Right of Canada, Department of Natural Resources. All rights reserved.

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Digital Elevation Models (30 metre and 90 metre) provided by Yukon Government Geomatics spatial data warehouse - www.geomaticsyukon.ca.

Yukon
Energy, Mines and Resources

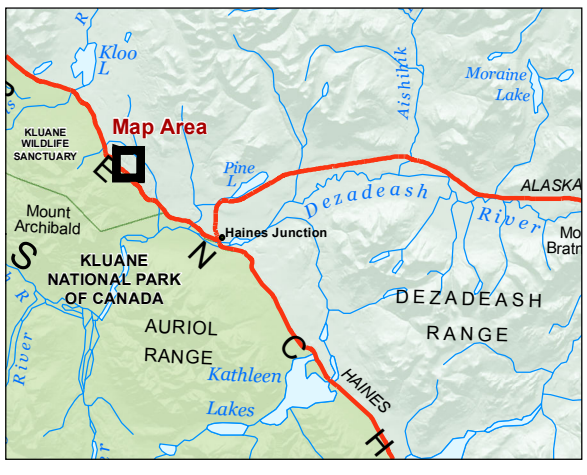
Forest Management Branch
Yukon Territory

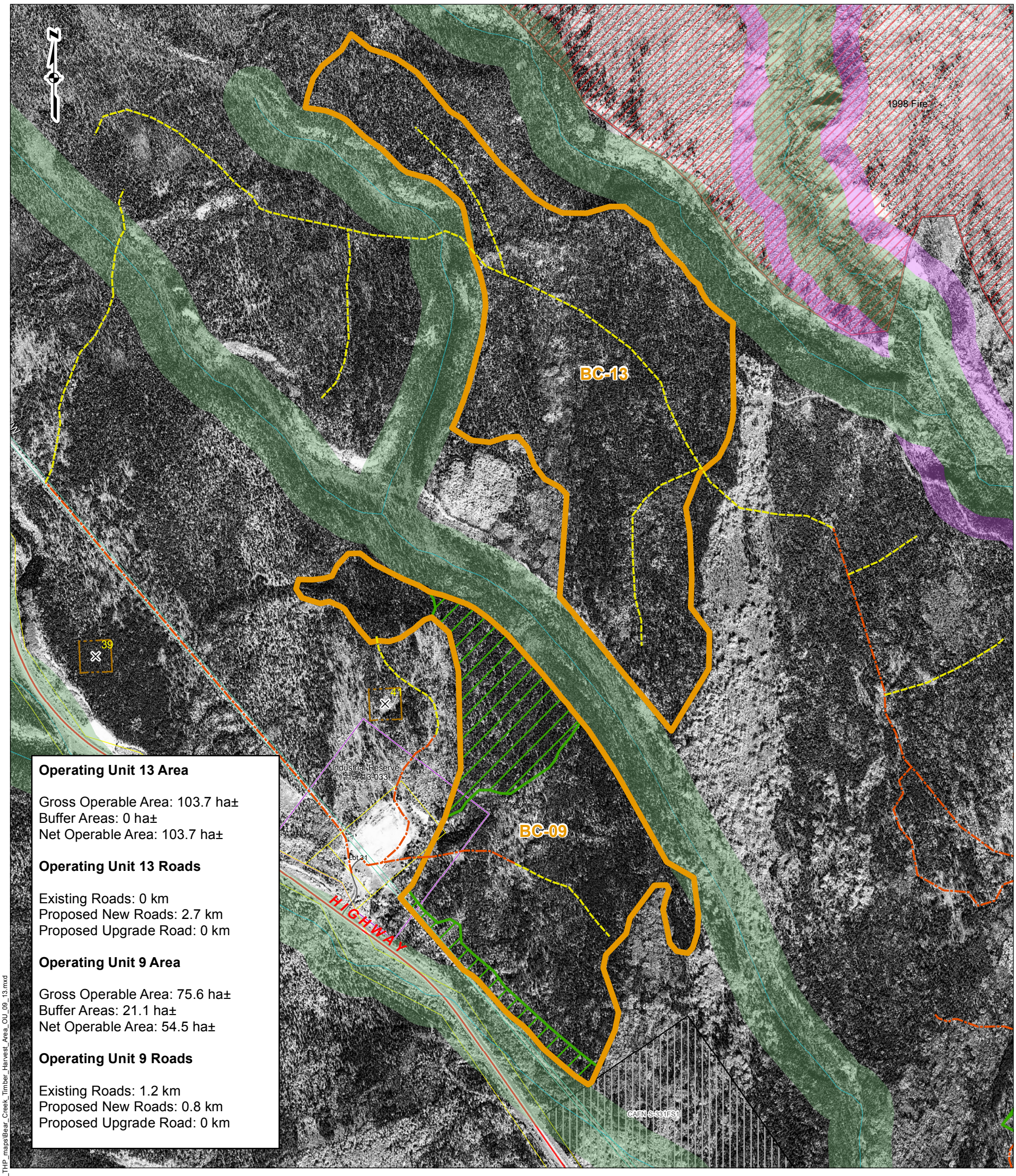
0 50 100 200 300 400 500
Meters

Map scale 1:12,500 when printing on 11"x17" paper.

Appendix D
Bear Creek Timber Harvest Plan

Operating Units 9 & 13





Operating Unit 13 Area

Gross Operable Area: 103.7 ha±
Buffer Areas: 0 ha±
Net Operable Area: 103.7 ha±

Operating Unit 13 Roads

Existing Roads: 0 km
Proposed New Roads: 2.7 km
Proposed Upgrade Road: 0 km

Operating Unit 9 Area

Gross Operable Area: 75.6 ha±
Buffer Areas: 21.1 ha±
Net Operable Area: 54.5 ha±

Operating Unit 9 Roads

Existing Roads: 1.2 km
Proposed New Roads: 0.8 km
Proposed Upgrade Road: 0 km

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Project Specific Features

- Existing Access Route
- Proposed Access Route
- Operating Units
- Buffers
- Permanent Sampling Plots
- CFS Forest Health Plots

Administrative Features

- Surveyed Parcel
- Surveyed Easements
- Agriculture Tenure
- Land Disposition
- Notations

Connectivity Corridors

- CPSG Riparian Connectivity
- Riparian Buffer

First Nation Settlement Lands

- Category A
- Category B
- Fee Simple

Fire History

- 1998 Fire

Date: June 2, 2011
Projection: NAD 1983 UTM Zone 8

Digital Data Sources

1:50,000 Canvec features downloaded from spatial data warehouse - www.geogratis.gc.ca. Her majesty the Queen in Right of Canada, Department of Natural Resources. All rights reserved.

Original map design by EDI Environmental Dynamics Inc. Fall 2009.

Digital Elevation Models (30 metre and 90 metre) provided by Yukon Government Geomatics spatial data warehouse - www.geomaticsyukon.ca.

Yukon
Energy, Mines and Resources

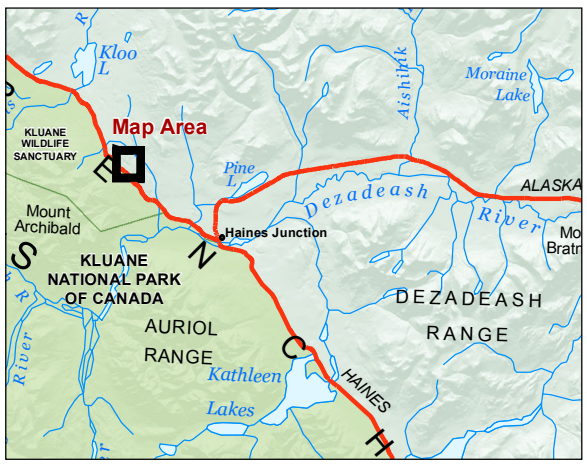
Forest Management Branch
Yukon Territory

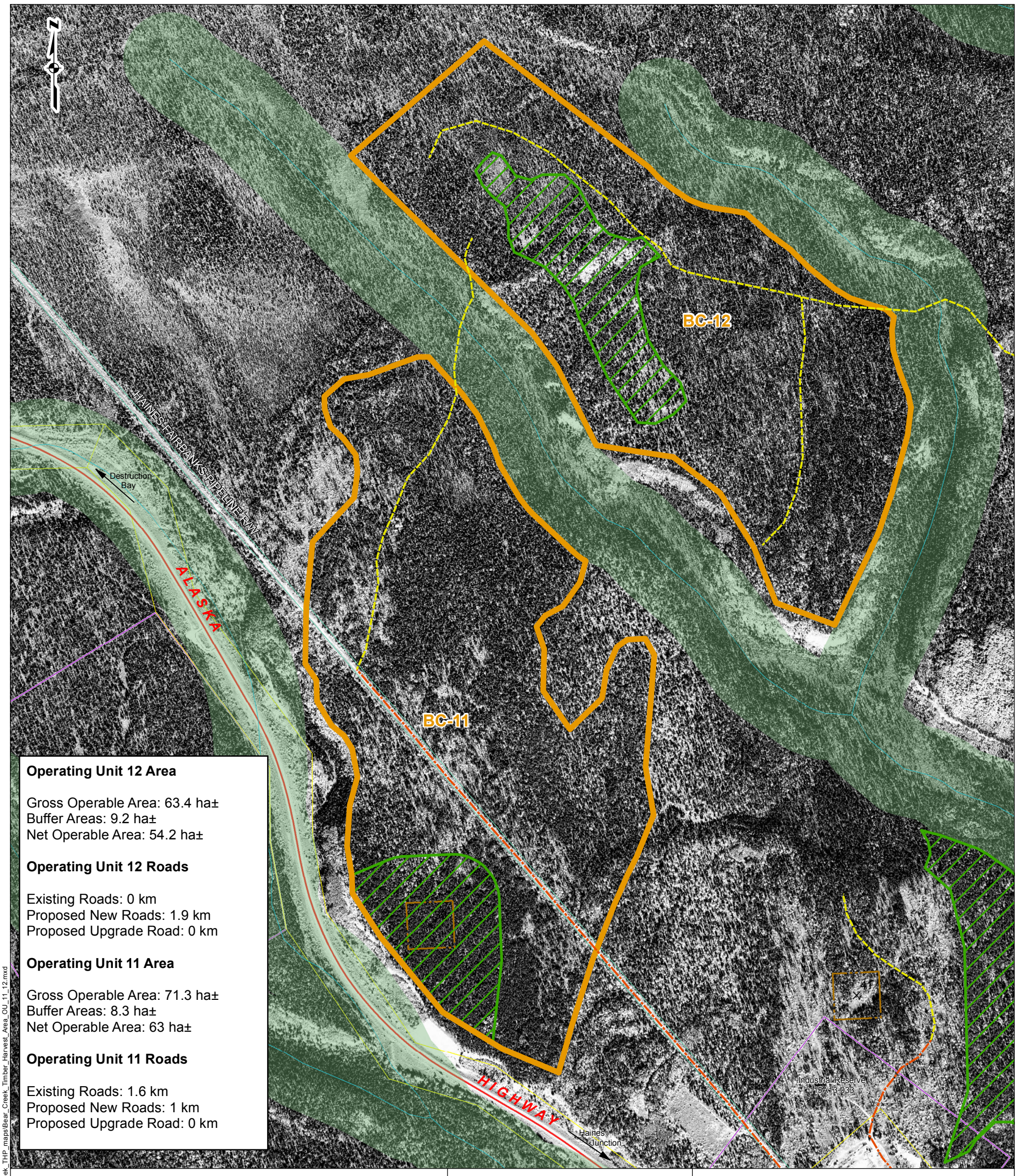
0 50 100 200 300 400 500
Meters

Map scale 1:12,500 when printing on 11"x17" paper.

Appendix D
Bear Creek Timber Harvest Plan

Operating Units 9 & 13





Operating Unit 12 Area

Gross Operable Area: 63.4 ha±
Buffer Areas: 9.2 ha±
Net Operable Area: 54.2 ha±

Operating Unit 12 Roads

Existing Roads: 0 km
Proposed New Roads: 1.9 km
Proposed Upgrade Road: 0 km

Operating Unit 11 Area

Gross Operable Area: 71.3 ha±
Buffer Areas: 8.3 ha±
Net Operable Area: 63 ha±

Operating Unit 11 Roads

Existing Roads: 1.6 km
Proposed New Roads: 1 km
Proposed Upgrade Road: 0 km

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Project Specific Features

- Existing Access Route
- Proposed Access Route
- Operating Units
- Proposed Reserves
- Permanent Sampling Plots
- CFS Forest Health Plots

Administrative Features

- Surveyed Parcel
- Surveyed Easements
- Agriculture Tenure
- Land Disposition
- Notations

Connectivity Corridors

- CPSG Riparian Connectivity
- Riparian Buffer

First Nation Settlement Lands

- Category A
- Category B
- Fee Simple

Date: June 2, 2011
Projection: NAD 1983 UTM Zone 8

Digital Data Sources

1:50,000 Canvec features downloaded from spatial data warehouse - www.geogratis.gc.ca. Her majesty the Queen in Right of Canada, Department of Natural Resources. All rights reserved.

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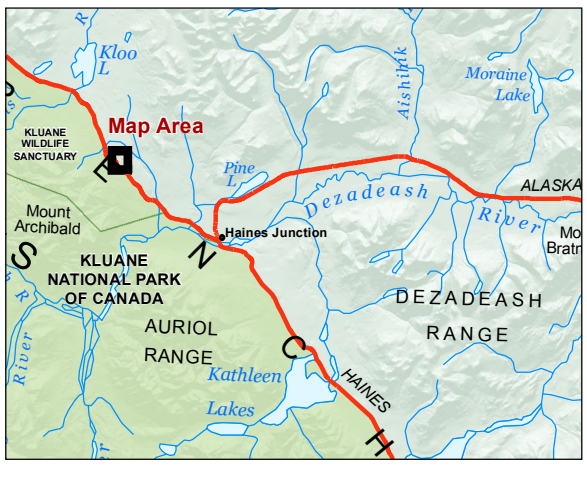
Digital Elevation Models (30 metre and 90 metre) provided by Yukon Government Geomatics spatial data warehouse - www.geomaticsyukon.ca.

Appendix E
Bear Creek Timber Harvest Plan

Operating Units 11 & 12



Yukon
Energy, Mines and Resources

Forest Management Branch
Yukon Territory

0 50 100 200 300 400
Meters

Map scale 1:8,500 when printing on 11"x17" paper.

Yukon
Energy, Mines and Resources
Forest Management Branch

Appendix F

BC05 SITE and STAND DATA

1. LOCATION

Development Area	rating Unit Number	Geographic Location Name
Planning Area # 9 Kloo Lake East Bear Creek Blocks	BC05	Haines Junction Area – Bear Creek

District	FMU	Map sheet	Latitude	Longitude
Kluane	Y06	115A13	60-48-40.0	137-40-.35.5

2. ECOLOGY AND SITE CONDITION

Eco-Region
Ruby Range / Southern Lakes

Soil Order	il Texture horizon)	l Texture horizon)	Coarse Fragments	Moisture Regime	LFH pth (cm)	Compaction Hazard
utric Brunisol	Silt	lt Loam	0-20	Fresh	7	Mod. - High

Mature Stems/ha	Poles ems/ha	aplings ems/ha	egeneration Stems/ha	Predominant under story vegetation
411	N/A	N/A	N/A	Willow / white spruce

3. OPERATING UNIT AREA SUMMARY

oss Area (ha)	eserves/ Buffers (ha)	m. Roads landings (ha)	Area to reforest (ha)	ation (m)	e (%)	spect	errain	ope Position
56.7	7.4	0	49.3	731	-5	SE	Flat	Level

4. STAND DESCRIPTION

pecies	vn Closure	e (years)	Avg. ight (m)	g. DBH (cm)	Mortality by volume	Vol/Ha (m^3/ha)	Est. eadVol/Ha (m^3/ha)
Sw9 A1	0-30	100	12.7	25.3	40-50	67	37

Total Estimated Net Harvest Volume (m^3): 3,303

Notes

Comments: *(location, terrain, timber quality, condition of poles, saplings, regen, wildlife, heritage, stand attributes, other issues)*
This area was partially harvest in 1998 and left to regenerate naturally. Since the first salvage harvest, mortality has increased in the remaining trees. Although the timber is scattered, this unit has not been planted, and does not appear to have a significant amount of ingress. It would be appropriate to harvest this entire unit and convert to a mixed stand. 50% of merchantable stems dead.

Road Access: *(proposed and existing access, upgrades)*
This unit is located northwest of Haines Junction, on the eastside of the AK Hwy, across from Nygren Subdivision. A road from the gravel pit accesses the bottom of the block, and there are established landings within the unit boundary. There is a deactivated cat guard within the unit that could be re-used to complete harvesting this unit.

Recommendations: *(boundary modifications, reserves, proposed roads, silviculture system, summer*

harvest, reforestation, other issues to address) Approximately 50% of the merchantable stand is dead, there are relatively high volumes, very easy access, no creeks and it is within the Fuel Abatement Landscape Zone.

Appendix G:
BC06 Site and Stand Data

1. LOCATION

Development Area	Operating Unit Number	Geographic Location Name
Planning Area # 9 Kloo Lake East Bear Creek Blocks	BC06	Haines Junction Area Bear Creek

District	FMU	Map sheet	Latitude	Longitude
Kluane	Y06	115A13	60-49-25.9	137-41-53.6

2. ECOLOGY AND SITE CONDITION

Eco-Region
Ruby Range / Southern Lakes

Soil Order	Soil Texture (B horizon)	Soil Texture (C horizon)	Coarse Fragments	Moisture Regime	LFH Depth (cm)	Compaction Hazard
Eutric Brunisol	Silt	Silt Loam	0-0	Fresh	10	High

Mature Stems/ha	Poles Stems/ha	Saplings Stems/ha	Regeneration Stems/ha	Predominant under story vegetation
514	0	400	933	White spruce- good form and vigor

3. OPERATING UNIT AREA SUMMARY

Gross Area (ha)	Reserves / Buffer (ha)	Perm. Roads landings (ha)	Net Area to reforest (ha)	Elevation (m)	Slope (%)	Aspect	Terrain	Slope Position
35.9	10.7	1	24.2	830	6	SE	Flat	Level

4. STAND DESCRIPTION

Species	Crown Closure	Age (years)	Avg. Height (m)	Avg. DBH (cm)	% Mortality by volume	Est. Vol/Ha (m^3/ha)	Est. DeadVol/ Ha (m^3/ha)
Sw9A1	30	100	14.3	28.8	84	156	130

Total Estimated Net Harvest Volume (m^3): 3,775

Notes

Comments: *(location, terrain, timber quality, condition of poles, saplings, regen, wildlife, heritage, stand attributes, other issues)*
Merchantable timber types are located in three separate patches – survivors of past forest fires. They are a mix of good size spruce, killed by spruce bark beetle (over 80% by volume), and young, green spruce. Natural regeneration of spruce is at a density of 933 stems per ha.

Road Access: *(proposed and existing access, upgrades)*
There is an existing logging road in the most westerly patch. Proposed road to the two other patches is not located in the field and could be laid out at time of permit issuance.

Recommendations: *(boundary modifications, reserves, proposed roads, silviculture system, summer*

harvest, reforestation, other issues to address)

Fine soils in B and C horizons with often low amount of coarse fragments- especially in horizon B - are prone to soil compaction, therefore, this unit should be logged:

- in winter over 30 cm of snow pack and/or over frozen ground, or
- under dry summer conditions, or
- any time in summer with low ground pressure equipment only

Appendix H:
BC08 Site and Stand Data

1. LOCATION

Development Area	Operating Unit Number	Geographic Location Name
Planning Area # 9 Kloo Lake East Bear Creek Blocks	BC08	Haines Junction Area – Bear Creek

District	FMU	Map sheet	Latitude	Longitude
Kluane	Y06	115A13	60-50-21.3	137-42-37.8

2. ECOLOGY AND SITE CONDITION

Eco-Region
Ruby Range / Southern Lakes

Soil Order	Soil Texture (B horizon)	Soil Texture (C horizon)	Coarse Fragments	Moisture Regime	LFH Depth (cm)	Compaction Hazard
Eutric Brunisol	Silty Clay	Clay	0-0	Fresh	8	High

Mature Stems/ha	Poles Stems/ha	Saplings Stems/ha	Regeneration Stems/ha	Predominant under story vegetation
505	350	400	600	White spruce- good form and vigor

3. OPERATING UNIT AREA SUMMARY

Gross Area (ha)	Buffers/ Partial Harvest (ha)	Perm. Roads landings (ha)	Net Area to reforest (ha)	Elevation (m)	Slope (%)	Aspect	Terrain	Slope Position
135.2	0 /73.8	0	61.4	800	10	SW	Flat	Middle

4. STAND DESCRIPTION

Species	Crown Closure	Age (years)	Avg. Height (m)	Avg. DBH (cm)	% Mortality by volume	Est. Vol/Ha (m^3/ha)	Est. DeadVol/Ha (m^3/ha)
Sw9A1	30	120	12.8	30.3	47	139	65

Total Estimated Net Harvest Volume (m^3): 8,535

Notes

Comments: *(location, terrain, timber quality, condition of poles, saplings, regen, wildlife, heritage, stand attributes, other issues)*

Merchantable timber types are located in two separate patches. They are a mix of mature sized spruce, killed by spruce bark beetle, and young, green spruce. Natural regeneration of spruce is at density of 600 stems per ha. Area in between these patches is partially logged with most of dead spruce removed.

Road Access: *(proposed and existing access, upgrades)*

There is an existing logging road to the area, and existing winter trail through the logged portion.

Recommendations: *(boundary modifications, reserves, proposed roads, silviculture system, summer harvest, reforestation, other issues to address)*

Fine soils in B and C horizons with low amount of coarse fragments- especially in horizon B are prone to soil compaction therefore this unit should be logged:

- in winter over 30 cm of snow pack and/or over frozen ground, or

- under dry summer conditions, or
- any time in summer with low ground pressure equipment only

Appendix I:
BC09 Site and Stand Data

1. LOCATION

Development Area	Operating Unit Number	Geographic Location Name
Planning Area # 9 Kloo Lake East Bear Creek Blocks	BC09	Haines Junction Area – West/Bear Creek

District	FMU	Map sheet	Latitude	Longitude
Kluane	Y06	115A13	60-49-48.7	137-44-00

2. ECOLOGY AND SITE CONDITION

Eco-Region
Ruby Range / Southern Lakes

Soil Order	Soil Texture (B horizon)	Soil Texture (C horizon)	Coarse Fragments	Moisture Regime	LFH Depth (cm)	Compaction Hazard
Eutric Brunisol	Silt	Silt Loam	0-50	2	13	High

Mature Stems/ha	Poles Stems/ha	Saplings Stems/ha	Regeneration Stems/ha	Predominant under story vegetation
1605	100	200	700	White spruce- good form and vigor

3. OPERATING UNIT AREA SUMMARY

Gross Area (ha)	Buffers/ Reserves (ha)	Perm. Roads landings (ha)	Net Area to reforest (ha)	Elevation (m)	Slope (%)	Aspect	Terrain	Slope Position
75.6	21.1	0	54.5	830	6	S	Flat	Level

4. STAND DESCRIPTION

Species	Crown Closure	Age (years)	Avg. Height (m)	Avg. DBH (cm)	% Mortality by volume	Est. Vol/Ha (m^3/ha)	Est. DeadVol/ Ha (m^3/ha)
Sw9A1	30	180	12.6	24.0	70	283	195

Total Estimated Net Harvest Volume(m^3): 15,424

Notes

Comments: *(location, terrain, timber quality, condition of poles, saplings, regen, wildlife, heritage, stand attributes, other issues)*

Terrain is mostly flat with several steep knobs up to 30% steep. Timber types are a mix of good size spruce killed by spruce bark beetle (over 70% by volume), young, green spruce, and pure aspen patches. There is a substantial area within this block previously logged. This area has low volume of dead spruce.

Road Access: *(proposed and existing access, upgrades)*

Block is located next to Alaska Hwy, and can be accessed via abandoned pump station site.

Recommendations: *(boundary modifications, reserves, proposed roads, silviculture system, summer harvest, reforestation, other issues to address)*

Fine soils in B and C horizons with often low amount of coarse fragments- especially in horizon B are prone to soil compaction therefore this block should be logged:

- in winter over 30 cm of snow pack and/or over frozen ground, or

- under dry summer conditions, or
- any time in summer with low ground pressure equipment only

Appendix J:

BC11 Site and Stand Data

1. LOCATION

Development Area	Operating Unit Number	Geographic Location Name
Planning Area # 9 Kloo Lake East Bear Creek Blocks	BC11	Haines Junction Area – Bear Creek

District	FMU	Map sheet	Latitude	Longitude
Kluane	Y06	115A13	60-50-28.2	137-45-28.7

2. ECOLOGY AND SITE CONDITION

Eco-Region
Ruby Range / Southern Lakes

Soil Order	Soil Texture (B horizon)	Soil Texture (C horizon)	Coarse Fragments	Moisture Regime	LFH Depth (cm)	Compaction Hazard
Eutric Brunisol	Silt Loam	Silt Loam	0-50	Fresh	13	High

Mature Stems/ha	Poles Stems/ha	Saplings Stems/ha	Regen Stems/ha	Predominant under story vegetation
984	400	666	633	White spruce- good form and vigor

3. OPERATING UNIT AREA SUMMARY

Gross Area (ha)	Buffers/ Reserves (ha)	Perm. Roads landings (ha)	Net Area to reforest (ha)	Elevation (m)	Slope (%)	Aspect	Terrain	Slope Position
71.3	8.3	0	63	910	2-15	Easter	Flat	Level

4. STAND DESCRIPTION

Species	Crown Closure	Age (years)	Avg. Height (m)	Avg. DBH (cm)	% Mortality by volume	Est. Vol/Ha (m^3/ha)	Est. DeadVol/Ha (m^3/ha)
Sw9A1	30	80	11.6	26.6	63	152	96

Total Estimated Net Harvest Volume(m^3): 9,576

Notes:

Comments: *(location, terrain, timber quality, condition of poles, saplings, regen, wildlife, heritage, stand attributes, other issues)*
Terrain is mostly flat with several steep knobs up to 15% steep. Timber types are a mix of good size spruce killed by spruce bark beetle (over 60% by volume), young, green spruce, and pure aspen patches. There is a substantial area within this unit previously logged. This area has low volume of dead spruce, but is included as logging opportunities still exist.
Natural regeneration is sparse with average stems per ha at 633.

Road Access: *(proposed and existing access, upgrades)*
Block is located next to Alaska Hwy, and can be accessed via abandoned pump station site, and old pipeline right of way.

Recommendations: *(boundary modifications, reserves, proposed roads, silviculture system, summer harvest, reforestation, other issues to address)*
Several proposed sections of this unit were removed due to poor volume. External reserves were not proposed, but can be added. These buffers contain less desirable timber types, mostly younger, green spruce mixed with aspen, as well as a research plot site.
Fine soils in B and C horizons with often low amount of coarse fragments- especially in horizon B are prone to soil compaction therefore this block should be logged:

- in winter over 30 cm of snowpack and/or over frozen ground, or
- under dry summer conditions, or

- any time in summer with low ground pressure equipment only

Appendix K:
BC12 Site and Stand Data

1. LOCATION

Development Area	Operating Unit Number	Geographic Location Name
Planning Area # 9 Kloo Lake East Bear Creek Blocks	BC12	Haines Junction Area – Bear Creek

District	FMU	Map sheet	Latitude	Longitude
Kluane	Y06	115A13	60-50-51.4	137-44-59.9

2. ECOLOGY AND SITE CONDITION

Eco-Region
Ruby Range / Southern Lakes

Soil Order	Soil Texture (B horizon)	Soil Texture (C horizon)	Coarse Fragments	Moisture Regime	LFH Depth (cm)	Compaction Hazard
Eutric Brunisol	Silt Loam	Clay Loam	5-40	Fresh	12	High

Mature Stems/ha	Poles Stems/ha	Saplings Stems/ha	Regen Stems/ha	Predominant under story vegetation
463	100	700	1233	White spruce- good form and vigor

3. OPERATING UNIT AREA SUMMARY

Gross Area (ha)	Buffers/ Reserves (ha)	Perm. Roads landings (ha)	Net Area to reforest (ha)	Elevation (m)	Slope (%)	Aspect	Terrain	Slope Position
63.4	9.2	0	54.2	910	2-8	Eastern	Flat	Level

4. STAND DESCRIPTION

Species	Crown Closure	Age (years)	Avg. Height (m)	Avg. DBH (cm)	% Mortality by volume	Est. Vol/Ha (m^3/ha)	Est. DeadVol/Ha (m^3/ha)
Sw9A1	30	90	13.2	31.8	74	131	97

Total Estimated Net Harvest Volume(m^3): 7,100

Notes:

Comments: *(location, terrain, timber quality, condition of poles, saplings, regen, wildlife, heritage, stand attributes, other issues)*

Terrain is mostly flat. Timber types are a mix of good size spruce killed by spruce bark beetle (over 70% by volume), young, green spruce, and pure aspen patches. There is a substantial area within this block covered with small size spruce located on wet ground. This area will form an internal reserve. This area has low volume of desirable, dead spruce

Natural regeneration is abundant with 1233 stems per ha.

Road Access: *(proposed and existing access, upgrades)*

Recommendations: *(boundary modifications, reserves, proposed roads, silviculture system, summer harvest, reforestation, other issues to address)*

Several proposed sections of this unit were removed due to poor volume and wet ground. External reserves were not proposed, but can be added as a mapping exercise. These reserves contain less desirable timber types, mostly younger, green spruce mixed with aspen, as well as a research plot site. One internal reserve is proposed.

Fine soils in B and C horizons with often low amount of coarse fragments- especially in horizon B are prone to soil compaction therefore this block should be logged:

- in winter over 30 cm of snow pack and/or over frozen ground, or
- under dry summer conditions, or
- any time in summer with low ground pressure equipment only

Appendix L:
BC13 Site and Stand Data

1. LOCATION

Development Area	Operating Unit Number	Geographic Location Name
Planning Area # 9 Kloo Lake East Bear Creek Blocks	BC13	Haines Junction Area – Bear Creek

District	FMU	Map sheet	Latitude	Longitude
Kluane	Y06	115A13	60-50-51.8	137-43-53.9

2. ECOLOGY AND SITE CONDITION

Eco-Region
Ruby Range / Southern Lakes

Soil Order	Soil Texture (B horizon)	Soil Texture (C horizon)	Coarse Fragments	Moisture Regime	LFH Depth (cm)	Compaction Hazard
Eutric Brunisol	Silt	Clay Loam	0-40	Fresh	7	High

Mature Stems/ha	Poles Stems/ha	Saplings Stems/ha	Regen Stems/ha	Predominant under story vegetation
616	343	314	1800	White spruce- generally good form and abundant

3. OPERATING UNIT AREA SUMMARY

Gross Area (ha)	Buffers/ Reserves (ha)	Perm. Roads landings (ha)	Net Area to reforest (ha)	Elevation (m)	Slope (%)	Aspect	Terrain	Slope Position
103.7	0	0	103.7	900	2	South	Flat	Level

4. STAND DESCRIPTION

Species	Crown Closure	Age (years)	Avg. Height (m)	Avg. DBH (cm)	% Mortality by volume	Est. Vol/Ha (m^3/ha)	Est. DeadVol/Ha (m^3/ha)
Sw8A2	30	110	12.3	28.8	61	135	82

Total Estimated Net Harvest Volume(m^3): 14,000

Notes:

Comments: *(location, terrain, timber quality, condition of poles, saplings, regen, wildlife, heritage, stand attributes, other issues)*

Terrain is mostly flat with several gentle slopes not more than 5% steep. Timber types within proposed harvestable areas are a mix of good size spruce killed by spruce bark, young, green spruce, and aspen.
Throughout the harvestable area, there are dispersed, small (0.1 ha) patches with horse tail.
Spruce regeneration shows good form and is at the level of 1800 stems/ha

Road Access: *(proposed and existing access, upgrades)*

Recommendations: *(boundary modifications, reserves, proposed roads, silviculture system, summer harvest, reforestation, other issues to address)*

Fine soils in B and C horizons with low amount of coarse fragments are prone to soil compaction therefore this block should be logged:

- in winter over 30 cm of snow pack and/or over frozen ground, or
- under dry summer conditions, or
- any time in summer with low ground pressure equipment only

Bear Creek Timber Harvest Plan

Prepared: June 13, 2011
Prepared by: Colin Urquhart

Appendix M:

Representation Summary

A total of two (2) respondents' submitted comments during the notification period on the Bear Creek Timber Harvest Plan held from April 15, 2011 to May 16, 2011.

Comments that were received from the notification process:

- Government of Yukon - Environment
- Champagne and Aishihik First Nation

The following table contains a summary of the comments received during the notification process, with responses to comments and how the comments have been addressed.

Topic	Name / Organization	Comment	Consultation Comment Response	How comment/s have been addressed.
General	CAFN	CAFN has pointed out, "That there is no existing Trappers' compensation policy in place as contemplated under Chapter 16 of the CAFN Final Agreement."	A draft trapper compensation process is currently under development by Yukon government. CAFN and other Yukon First Nations will have the opportunity to review and comment on the draft process. Until the trapper compensation process under section 16.11.13 of the First Nation Final Agreements is in place, FMB is willing to work with First Nations, affected trappers and licencees, to ensure their site specific concerns are identified and addressed, both within the context of the CAFN final agreement section 16.11.13 and section 3.9 of ILP. FMB will be developing standards that will apply to the harvest licence issued within this THP area which will set-up a consultation process consistent	Commitment by FMB to continue to work with CAFN, Trappers and licensees to ensure concerns are identified and addressed.

			with the guidance of these documents. Prior to the issuance of cutting permits, the director is required by section 27 of the Forest Resources Act to consider the impacts of cutting timber on the specific rights granted to Trappers under the trapping licence.	
	CAFN	Disagrees with adding more operating units to the Pine Lake and Canyon planning units (as defined in SFMP). "Perhaps the biggest concern we have with these plans is with the additional blocks proposed in the Marshall Creek area after we went through a planning exercise for this Landscape Unit (Pine) under the Pine Canyon THP."	The two overriding plans that give direction on forest development in the CATT are the SFMP and ILP. These two documents describe where THP's may be considered for development. The Bear Creek THP meets all guidelines and follows direction given from these two upper level plans. Amendments to THP's are limited to reasons outlined in FRA Regulations section 8(1).	
Executive Summary				
1.0 Introduction				
1.1 Planning Area				
1.2 Background				
1.3 Eco-region				

2.0Strategic Forest Planning	CAFN	It should be noted the reference to "**Proposed Areas for forest development within the CATT"** was shared with CAFN staff after its development, but we were not directly involved with its development. Nor have we agreed with all the direction that it provides. When this document was shared with us, it was the first time that further consideration of developing THPs within the Pine Canyon Timber Harvest Plan area was known to us. Soon after, we have expressed a lack of support to develop THPs in areas that we already planned out. In other words, we recognize this document points to Marshall Creek as a possible area for development, but we explained that we did not support this at the time, except for the conclusion of activities for the few small volume wood cutters located in the west Marshall Creek area (block 3).	The referred to document was developed by FMB and was intended to guide where THP development should be considered next based on existing direction given from higher level plans; the SFMP and ILP. The Bear Creek THP is within the scope of direction given in these upper level plans.	No further Operating Units will be removed from development under this THP
3.0 Measures to Protect Forest Resources				
3.1 Resource Management Guidelines	CAFN	There are only a few blocks proposed within both THPs that should have **reducing the fuel load** in stands as a primary objective. We acknowledge that there is some value in timber harvesting within a reasonable proximity of communities and other values at risk; however, most of the blocks in these THPs will have a	The ILP states that a management priority within the Landscape Zone is "Fire hazard reduction through fuel management and integration of other values." Not all of the Bear Creek Operating Units are within the Haines	Clarify wording of objectives to better reflect guidance given from the ILP.

		very limited value for providing primary means of reducing threat to surrounding communities and values at risk. We view that is critical to address fuel hazards within the community and interface zone well before trying to address it within the landscape zones. For these THPs, the primary objectives should be the other three points, and fuel abatement should be considered a secondary objective. The exception could be made for Bear Creek block #5. This should provide needed flexibility for "slash management" and CWD objectives.	Junction Landscape Zone. Wording will be restated to clarify that areas within the LZ will have fuel reduction as a primary objective. Fuel abatement will be a secondary objective in areas outside of Fuel Abatement zones, as per the ILP.	
3.2 Silviculture Systems	CAFN	Further to the point made above (3.1), the silvicultural objectives for these stands should look very different if the intention includes fuel abatement as a primary objective (i.e. do not plan to regeneration to spruce or mixedwood forest – possibly do not plan to re-forest). Otherwise, this section is reasonable if it is agreed that fuel abatement is a secondary objective.	The silvicultural system describe at the cutting permit phase will take into consideration the individual operating unit objectives as reflected in the discussion regarding section 3.1. This is a requirement of the FRA section 27(4).	
3.3 Land Use Coordination	CAFN	This section should also include: trapping, outfitting, and possibly visual quality objectives if a "user group" could be associated with this value. Specific to trappers' interests, it would be beneficial to specify the mechanism by which those concerns outlined in the introduction will be addressed. It should provide a description of the mechanism that	A draft trapper compensation process is currently under development by Yukon government. CAFN and other Yukon First Nations will have the opportunity to review and comment on the draft process.	Commitment by FMB to continue to work with CAFN. Trappers and licensees to ensure concerns

		will be used for notifying trappers prior to issuance of permits, and notification process prior to timber harvesting operations commencing. The trapping section should consider the maintenance / protection of suitable habitat types that are reasonably accessible within the registered trapping concession. For context, the trapper affected by the Marshall Creek proposed blocks, there has been a considerable impact of human activity in the last 15-20 years resulting in few if any good places left to trap.	Until the trapper compensation process under section 16.11.13 of the First Nation Final Agreements is in place, FMB is willing to work with First Nations, affected trappers and licencees, to ensure their site specific concerns are identified and addressed, both within the context of the CAFN final agreement section 16.11.13 and section 3.9 of ILP. FMB will be developing standards that will apply to the harvest licence issued within this THP area which will set-up a consultation process consistent with the guidance of these documents. Prior to the issuance of cutting permits, the director is required by section 27 of the Forest Resources Act to consider the impacts of cutting timber on the specific rights granted to trappers under the trapping licence.	are identified and addressed.
3.4 Fuel Abatement Guidelines	CAFN	See comments in section 3.1 re: fuel abatement as a primary objective. Although	The THP will be updated to clarify primary and secondary	The THP will be updated to

		we agree that this issue should be considered, in the given context of block location, location of values at risk, and the greater priority on addressing fuel hazards closer to community, this aspect should be of lesser importance than addressing other principle objectives. This will provide more flexibility into site plans and management of in block retention and coarse woody debris objectives. In general, the bulleted strategies are reasonable, but greater clarification should be made on what is meant by (excess) slash reduction. Excess can only be defined if a clear CWD objective is defined for each site.	objectives as per the ILP. Specific site plans will be developed with issuance of cutting permits and will work to ensure client needs can be met as well as meeting all requirements from the THP and FRA.	clarify primary and secondary objectives as per the ILP.
3.5 Wildlife and Biological Diversity	Yukon Government - Environment	Add a couple sentences on wildlife values. Environment confirmed that the THP area is occupied by several species of wildlife, including moose, grizzly and black bears and furbearers. The proposed blocks are also located within an identified moose over-wintering area.	Agreed. YE has pointed out that although this area is not listed as Key Wildlife habitat, moose do use the area to overwinter.	Section will be updated as per recommendations.
	CAFN	It is good to incorporate the recommendations of the wildlife working group – connectivity recommendations, but it should be noted that these are landscape level recommendations and when developing timber harvest plans, more localized planning is required. We would be curious to see what YG Environment may have recommended at this scale, and assume	Recommendations made by the wildlife working group are considered in Forest Management Planning.	No actions required.

		they had the opportunity to do so.		
	CAFN	With additional timber harvesting came access development, at an estimated 12.8 km (in block roads and spurs). Marshall Creek already has a network of access trails and logging roads. Despite best efforts to gate roads and the introduction of the forest road regulations, we believe people will continue to access the land through the easiest means possible (such as walking or using ATV's along routes) in high use areas (e.g., Marshall Creek). This will have negative effects on wildlife. It is for this reason (people will use roads despite attempts to gate or block access) that we developed the ILP threshold for road density. Although we have not done a quick calculation of the road density, we highly suspect this proposed development would exceed the ILP threshold of .16 km/km^2 for the Landscape Unit, and/or 0.4 km/km^2 local road density. If this is the case, then we should at least carry out further discussion of this threshold and planning for the area.	Any new roads developed in this THP will be Forest Resource Roads and will have restricted access as per the FRA. Forest Resource Roads are not public roads and are temporary in nature. New resource roads will be gated, will have a designated maintainer, and will be decommissioned upon completion of operations. Not all roads in the THP need be developed at once. It is a requirement of the FRA that the Director must consider if the proposed activity is consistent with the Strategic Forest Management Plan and this THP prior to issuance of cutting permits. The ILP section 3.10(9) states that "…forestry planning should consider…" access density and FMB is committed to do so.	FMB will continue to work with YE and CAFN on access management issues and options.
	CAFN	We support the concept of starting at the farthest point required and then pulling back. What is not mentioned in either of the Draft THPs is the recognition of sequencing operations such that there are no simultaneous operations on adjacent sides of a valley. This	The FRA and regulations provides guidance on Forest Resource Roads. Road construction activities are required to be screened through YESAB and scheduling of operations will also	FMB will continue to work with YE and CAFN on access management

		will be important for both Marshall Creek and the Bear Creek plans. The proximity of blocks on either side of the tributary creeks running south and into Bear Creek are very close and they should not have operations carried out at the same time.	be considered during the harvest licence application phase.	issues and options.
	CAFN	The scale at which the connectivity working group carried out the mapping does not appear to fit well with the scale that the draft site maps indicate (1:250,000 vs. 1:10,000). Boundaries are out of alignment and should be corrected. We also have some recommendations about the configuration of block and buffer boundaries in Part 2 – separate document.	FMB is currently in the process of cleaning and correcting spatial data.	Continue cleaning and correcting spatial data.
3.6 Riparian and Water Resources	CAFN	The riparian buffers are good for all proposed blocks. This section should provide detail on the crossings anticipated for Bear Creek (access).	The creek crossing referred to is on an existing road which falls under the Highways Act. Any upgrades undertaken on this crossing will adhere to all acts and regulations pertaining to creek crossings. If necessary, the upgrade will be screened through YESAB and all necessary permits and authorizations will be obtained.	Details of creek crossing not required or appropriate at this stage of planning.
	CAFN	There is no mention in either draft THP on the analysis of the ILP threshold for protecting watersheds. The rough indicator tells us that a hydrologic assessment should be carried out if	The Director may refuse to issue a cutting permit if the permit is not consistent with the applicable Forest Resource Management	Continue to ensure commitments in upper level

		and when there is any proposed forestry operations that would meet or exceed 20% of the forested area disturbed within a given watershed. This guideline was set in place to protect watershed integrity. The Marshall Creek burn is probably still a long way off from a point of hydrologic recovery. Adding the proposed THPs will likely meet or exceed this 20% threshold. We acknowledge there is considerable uncertainty whether or not there would be much impact from salvage harvesting, but there is certainly evidence from elsewhere (BC Pine Beetle) that salvage harvesting does add to increased runoff, has an effect on changes to the timing of peak flows, etc. If there is still interest in including all of the proposed blocks, and if this total area meets or exceeds the 20% threshold, then we expect that we should be conducting a hydrologic assessment for the area.	Plan or Timber Harvest Plan (Timber Regulations section 27(4)). Section 3.6 of the ILP provides specific guidance to this issue and proposed forest harvesting will be considered in this context.	plans are being met.
3.7 Recreation, Tourism and Viewscape	CAFN	Bear Creek: Visual Buffers. We generally agree that taking out the dead trees may improve the aesthetics of the forest at the roadside, but point out for the Bear Creek plan, the bullet that states that "only dead trees will be removed from the visual buffer". From our viewpoint, that is the objective for all of the blocks (salvage of spruce beetle killed trees/ incidental harvest of green) so it begs the	There are many reasons why buffers may be included in Operating Units of a THP. Some reason include: archaeological & heritage, wildlife habitat, riparian management and for aesthetic reasons. Management strategies for the specific buffer must be matched with why the buffer is in	Wording in THP will remain the same.

		question what is getting buffered? It should probably state something like: "machine free zone" or "heightened understorey and live tree protection", or perhaps the choice to simply treat them as a no harvest zone type buffer.	place. The strategy for visual buffers in this THP is to provide a visually pleasing buffer between the highway and operating units. Removal of dead standing trees within the buffer will assist in achieving this strategy. Final decisions will be made at the site plan level based on site and stand characteristics and safety to the public and harvesting operations.	
	CAFN	Not sure this THP is consistent with draft Standards with respect to trails. For some trails, it may be appropriate to explicitly buffer for them and not have harvesting within the proximity that there ever would be logging debris affecting existing users of those trails.	Standards are being developed under the FRA. When they are approved they will apply to operations conducted under this THP.	Continue work on Standards.
3.8 Heritage Culture	CAFN	Reads well. Might want to tone down the language in the first sentence about "highly valuable". Where the word "sites" is used, please add "and values". Please also remove the word "comprehensive" from the second sentence.	Agreed.	Adopt recommended wording changes into final THP.
4.0 Harvest Section	CAFN	It would be useful to provide some level of planning on establishment of camps. The long term presence of operators on these sites is sometimes one of the bigger issues. Camp	The intent of forestry operations is not to provide long term residency options. Temporary warming shacks are common practice on	Consider terms and conditions for specific cutting permits,

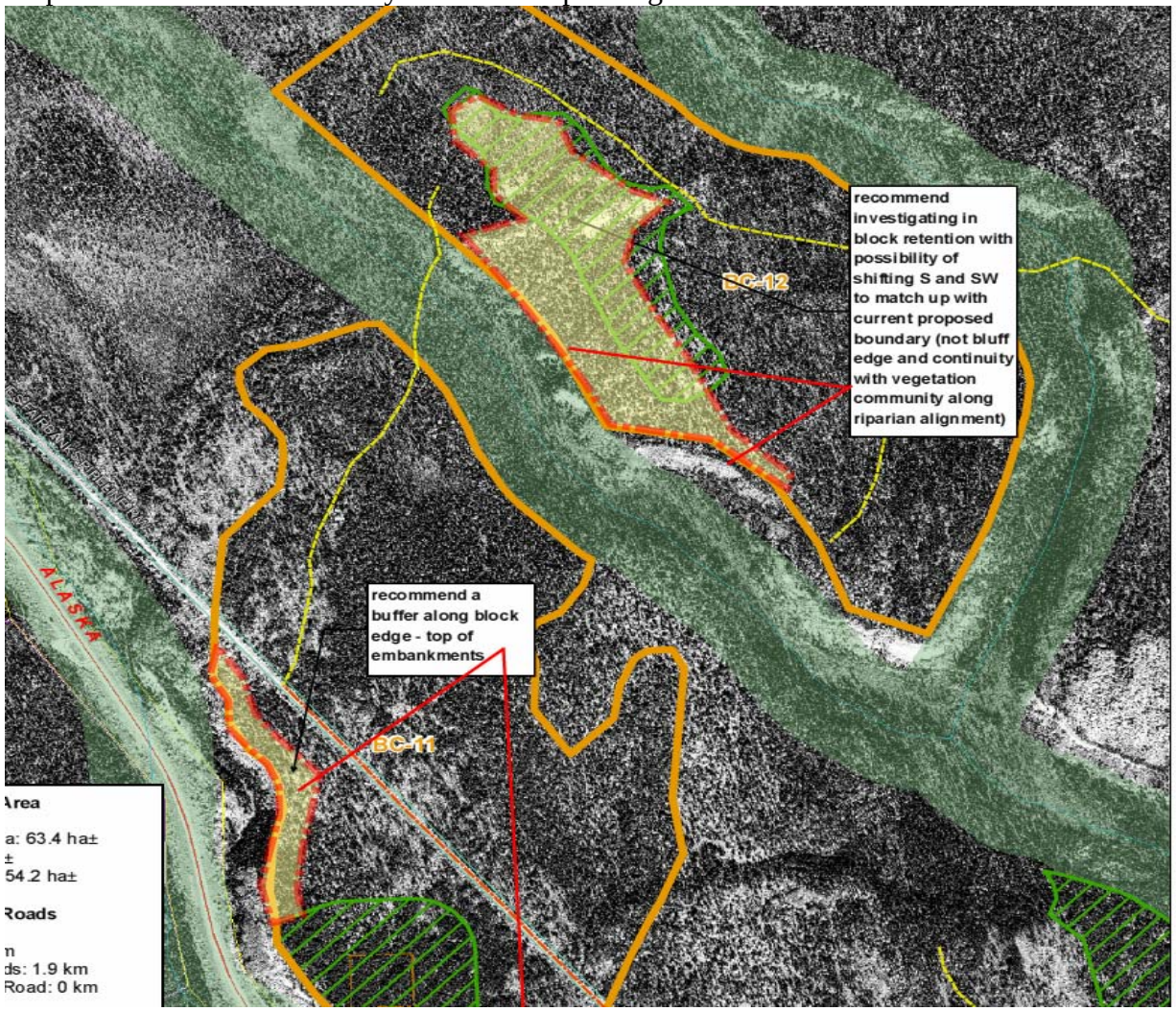
		establishment and management should be regulated carefully. A recent complaint came in to us that an operator set up camp and blocked a publicly used old road in the Marshall Creek area. No one was around to get camp equipment and vehicles out of the way preventing the citizen from being able to access further up the valley.	forestry operations in the Yukon. Camps are regulated under the Territorial Lands Act. Wording in cutting permit terms and conditions can speak to temporary structures on harvesting licence areas if required.	regarding use of camps.
4.1 Operating Unit Area and Volume Summaries				
4.2 Harvest Scheduling and Season	Yukon Government - Environment	The description of harvest timing is somewhat vague and non-prescriptive. Environment would prefer to have operators complete harvesting under a specific temporal scope (2-3 years permit duration) followed by immediate implementation of road and site decommissioning/deactivation. This would provide assurance that operators will get in and then get out in a timely manner, such that land uses won't persist and decommissioning can occur.	Due to operational requirements of clients in the forest industry it is difficult to put restrictive measures on timing into a THP. Expectation will be set at the cutting permit phase to ensure operators are actively operating under their Harvest Licence to ensure the activities get conducted in a timely manner. The FRA directs that roads must have a maintainer which has a corresponding cost associated with that. This is another incentive to conduct operations in a timely manner. Section 27(2) of the FRA restricts cutting permit lengths to "a term not exceeding three years".	

	CAFN	This section would be a good place to describe the intent to follow the connectivity recommendations about sequencing of operations to ensure minimal impact to overwintering moose in the areas.		FMB will continue to work with colleagues at YE to ensure negative impacts of forestry operations is minimized on wildlife populations.
5.0 Access Management				
6.0 Timber Harvest Project Referral and Approval Process				
CAFN comments specifically for operating units BC11, BC12 & BC 13	CAFN	See Maps 1 & 2 Below	Operating units will be further designed into blocks at the cutting permit phase. The cut block design will be consistent with this THP and all upper level plans and will take into consideration operational requirements of the licencee.	Recommendations specific to cut block design will be considered at the cutting permit phase.

Bear Creek Timber Harvest Plan

June 13, 2011

Map 1. Comments submitted by CAFN for Operating Units 11 & 12 of the Bear Creek THP



Map 2. Comments submitted by CAFN for Operating Unit 13 of the Bear Creek THP