

Forest Management branch

DRAFT Top of the World Timber Harvest Plan

Dawson Annual Limit Region

Date Prepared:

30/05/2014

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Executive Summary

The objective of the Top of the World Timber Harvest Plan (THP) is to provide the Dawson Region and the surrounding area with fuelwood opportunities in an integrated and balanced approach to forest management. Under the *Forest Resources Act*, all commercial harvesting must be conducted under an approved THP.

This THP has been developed using the Dawson Forest Resources Management Plan (DDFRMP) and West Dawson and Sunnydale Local Area Plan (WDSLAP) as guiding documents taking the interests and objectives of these plans into consideration. More specifically the WDSLAP aims to address wildfire hazard reduction, maintain and enhance trail systems, maintain habitat quality, develop rural residential lots and convert land to agriculture. The WDSLAP also wishes to maintain the existing lifestyle and character of the area. This THP proposes the selective removal of stems across 161.6 ha as identified in the WDSLAP.

Through partial cut techniques, reserve patches and selective removal, the objectives of the WDSLAP listed above, as well as the objectives outlined in the DFRMP, can be met, creating an aesthetically pleasing forest stand while meeting stewardship values identified for this area. This THP will manage forest resources to help address forestry directions in the WDSLAP.

This THP was developed to be consistent with the Dawson Forest Resources Management Plan as described in the THP contents. In addition, the THP must meet legislation requirements of the *Forest Resources Act* and associated Regulations.

1.0 Introduction

1.1 Background

The Top of the World Timber Harvest Plan (THP) is located approximately 3 km west of Dawson, in the West Dawson/Sunnydale area. Work has been completed on the West Dawson Sunnydale Local Area Plan, which has identified small-scale commercial fuelwood harvesting as an appropriate land use in the area identified as Open Space in the WDSLAP.

1.2 Eco-region and Drainages

This THP is located within the Boreal Cordillera Eco-zone, Klondike Plateau Eco-region and Klondike River Landscape Unit. Characteristic terrain features include smooth, un-glaciated, rolling plateau topography with moderate to deeply incised valleys and large structural basins composed of level to undulating glaciated terrain. The area is relatively flat with most grades at less than 10%. The forest is made up primarily of birch, aspen and white and black spruce.

1.3 Socio-Economic Considerations

Dawson City is home to approximately 1,300 people. The major economic drivers in the region are tourism and gold mining. The current annual demand in Dawson is approximately 3500m³ for sawlog and 1500m³ for fuel wood. The industry in 2014 consists of one sawmill and numerous fuel wood operators. The forests in the Dawson region provide significant ecological and aesthetic values, cultural and heritage values, recreational values, and other non-timber values. Dawson's forests can sustain a vibrant, small-scale forest industry that provides timber for local markets, energy, economic opportunity, and employment for the region's residents (DFRMP 2013). Many of the residents of Dawson rely on fuel wood harvesting as an economical heating alternative throughout the winter.

2.0 Planning Area Identification

This area is located along the Top of the World highway approximately 3km west of Dawson. The planning area encompasses a 5km stretch west along the highway from here (See Appendix A). The total area identified is 146.9 hectares (ha) with a maximum harvest volume of 10,509.9 m³ (Table 1).

Table 1. Area and Volume Summary

| Proposed Blocks | Estimated Volume/ Hectare (m ³ /ha) | Total Volume (m ³) | Slope (%) | Aspect | Block Size (ha) | Species Composition |
|-----------------|--|-----------------------------------|--------------|--------|--------------------|---|
| TW2A | 77.5 | 1015.3 | 22 | SW | 13.06 | W ₇ Sw ₂ Sb ₁ |
| TW-2B | 85.2 | 1141.7 | 26 | NE | 13.4 | W ₈ Sw ₂ |
| TW-2C | 84 | 613.2 | 30 | NE | 7.29 | W ₉ Sw ₁ |
| TW-3 | 99.6 | 2958.1 | 26 | W | 29.7 | W ₇ Sw ₂ A ₁ |
| TW-4 | 92.0 | 1646.8 | 13 | SE | 17.9 | W ₇ Sw ₂ Sb ₁ |
| TW-5 | 46.2 | 1704.8 | 25 | E | 36.9 | W ₅ Sw ₃ A ₂ |
| TW-6 | 50 | <u>1430</u> | 25 | NE | <u>28.6</u> | Sb ₄ Sw ₃ A ₂ W ₁ |
| | | 10509.9 | | | 146.9 | |

*W- white birch, Sw- white spruce, Sb-black spruce, A-aspen

2.1 Wildlife. The Characteristic wildlife species of the area include caribou, grizzly and black bear, Dall's sheep, moose, beaver, fox, wolf, hare, raven, rock and willow ptarmagin, and golden eagle. The spruce/aspen forest is also home to Great Gray Owls and Gray Jays that nest early in spring. Ruby-crowned Kinglets, Slate-coloured Juncos and Boreal Chickadees sing until late July. Recent burn areas support new growth of grasses, shrubs and berries which attract moose and black bears. Snowshoe hares use the forest for shelter from predators such as the lynx and feed in willow thickets and burn areas. Red fox and coyotes hunt for small mammals and birds eggs.

The Focal species identified in the DFRMP are woodland caribou, barren ground caribou, moose, grizzly bear, lynx, salmon and freshwater fish, as well as forest birds. Of most importance in this area is the barren ground caribou. The DFRMP gives us the following strategic direction:

“Consider the availability, quantity, and connectivity of lichen habitats within the core winter range of the Forty Mile herd when forest management activities and related guidelines are developed.

Timber harvest planning should be consistent with forestry recommendations in the “Recommendations regarding habitat protection measures for the Forty Mile Caribou Herd” document.”

This THP is in the southeastern extent of the Forty Mile caribou herd winter range. They rely heavily on the presence of reindeer lichen (*cladina* spp.) as winter forage. Due to the small footprint of the harvest areas, it is expected that there will be minimal impact to the availability of winter forage over their range. Where harvesting does occur and disturb the lichen, it is expected to regenerate within 5-10 years with potentially higher abundance in areas with <40% removal. Any sightings of caribou in the area should be reported to the regional biologist in Dawson. As well, in order to help monitor wildlife health, Tr'ondëk Hwëch'in asks that the timber harvester report any unique animal sightings to the Tr'ondëk Hwëch'in Fish and Wildlife Department. For specific management all Forest Management branch wildlife standards and guidelines will be followed. These can be found at: <http://www.emr.gov.yk.ca/forestry/442.html>.

- 2.2 Biodiversity.** Goal A of the DFRMP (section 7.1) is to conserve biological diversity. There are 3 objectives under this goal. They are to conserve ecosystem diversity, species diversity and genetic diversity. Each of these objectives that support the conservation of biological diversity have associated indicators that will be reported on to support monitoring and conservation efforts.

This area is dominated by a white spruce and birch/aspen mixed forest type on variable aspects. The natural disturbance regime for this forest area is wildfire, creating a mosaic of forest cover landscape. This situation has created even-aged early seral stands with diverse pockets of discontinuous late seral, and non-forested openings. The stands sampled ranged from 86 to 96 years old. This area displays good spatial connectivity of riparian ecosystems particularly on the north side of the Top of the World highway. Mature productive early and late seral stands are discontinuous creating a high degree of edge effect and diversity.

The cut leave pattern and retention strategy in each block will ensure that structure and function is maintained within these stands. These retention strategies will be defined in the Site Plan for each block before the time of harvest. These strategies will depend on existing structure and wind firmness.

- 2.3 Riparian and Water Resources.** The DFRMP (section 7.3.2) supports the conservation of water resources. The DFRMP sets out 5 indicators that will be reported on. Results from this THP harvesting operations will contribute to that report and be used for monitoring and conservation of water resources.

Operating units in this THP area located within the OK creek, Dawson creek, and Benson creek drainages. The only potable water reported in the area is provided by Swede creek. This plan does not have any operating units within this drainage. Water quality as it relates to fish and wildlife habitat will be maintained through FMB's established Riparian Management Standards and Guidelines that can be found at; http://www.emr.gov.yk.ca/forestry/pdf/planning_standards_riparian_management.pdf

2.4 Recreation and Visual Impacts

Recreation: The WDSLAP has identified recreation as a value that is of high importance. Much of this recreation occurs in undeveloped landscape on trail networks. The WDSLAP has also envisioned future development of trail networks for recreational purposes. All known existing trails that overlap the harvest units will be identified in the site plan, and managed accordingly to preserve and protect the trail networks. Many of the existing trails in this area occur on old mining and logging trails. It is likely that some of the trails created for skidding stems, will be excellent recreational trails. This has been seen throughout BC and Yukon on past resource

trails that are now well used aesthetic trail networks.

Visual impact- The DFRMP (section 5.6) supports management of forest viewscales as it contributes to tourism and recreational values. The strategic direction provided in the DFRMP is to:

“Integrate management of valued viewscales into planning along the Dempster and North Klondike highway corridors and major recreational and historic trails and routes including waterways.

Design harvest blocks that simulate natural forest openings and blend into the landscape to reduce the visual impacts.”

Although this area does not have any defined visual objectives the Department of Tourism and Culture wishes to maintain a natural look to areas that see high tourist use. Some of the operating units are visible from the Top of the World highway; however, mitigation of visual effects will be achieved through irregular boundaries, small openings, high amounts of in block retention, and block shape. A visual buffer will also be maintained adjacent to the highway where operationally feasible. These operating units will have visual effect on less than 5% of the landscape.

2.5 Cultural Values. The DFRMP supports the maintenance and enhancement of cultural values as it relates to forest resources in section 7.4.1, 7.4.2, and 7.5.1. The West Dawson and Sunnydale area has significant interest from the Tr’ondek Hwech’in. The WDSLAP has zoned space primarily for traditional use activities that have been identified for this purpose. Harvesting of timber was included as part of the WDSLAP separate from the zoned traditional use area, however these harvested units will also be available for many traditional use activities.

2.6 Other. The WDSLAP has identified risk of wildfire as a concern, and treatment such as fire smart fuel abatement as a viable mitigation option. Much of this can be achieved through controlled timber removal outlined in this plan, which will help alleviate the need to treat the area with a costly firesmart treatment. Fuel abatement activities will be addressed at the block level in the site plan.

2.7 Stand Level Issues

- 2.7.1 Ecosystem and Stand Composition.** The operating units consist of an upland even aged forest type ranging from 500 to 850m elevation. Soils are dominated by silts and sands, and very few clays. The operating units target non-riparian stands that are near the end of their productive lifespan, and offer good fuelwood and sawlog opportunities. Much of this timber is showing signs of heartrot and is expected to be viable for less than 5 years.
- 2.7.2 Silviculture System.** The natural disturbance regime for this forest area is wildfire, creating a mosaic of forest cover landscape. This situation creates even-aged early seral stands with diverse pockets of discontinuous late seral, and non-forested openings. The silviculture system used will be a retention system where stand structure, complexity and diversity will be maintained. Details of the retention will be outlined in the site plan and tailored for each block. Retention targets will be both in clumps and uniformly spread across the operating units. A minimum 20% retention will be targeted within these units, with some units retaining up to 50% of the gross volume. Natural regeneration will be the preferred regeneration method, particularly the coppicing of birch. Fill planting will occur where needed.
- 2.7.3 Cultural Heritage and Archeological Sites.** A heritage resources overview assessment has been completed for the area and no conflicts or areas of high archaeological potential were identified. The WDSLAP includes a birch harvesting area that is outside of Block 2a. Commercial harvesting will not interfere with traditional birch cutting in this identified zone.
- 2.7.4 Soils Conservation.** All harvesting operations must follow the soil conservation standard. The standard will ensure that the integrity of soils are maintained across all sites. Harvesting will only be permitted during dry summer or winter conditions in order to mitigate any risks to soil. Utilizing existing access in the area will help minimize any soil compaction in the harvest areas. This will need to be closely monitored by operators to ensure that they are within the soil conservations standards set by the FMB.
- 2.7.5 Traditional Land Users.** Consultation with the Tr'ondek Hwech'in (TH) has been carried from the beginning of the planning process. The TH has outlined that they feel that timber harvest may not be appropriate in areas identified for new residential subdivision in the WDSLAP such as block 1a and 1b. This area is within trapping concession 23 and the community trapline as zoned in the WDSLAP. There has been no response from trapping concession holder to date. Block 1a and 1b are no longer being considered for timber harvest, and there is commercial wood cutting proposed within the area zoned as community trapping. If future needs dictate the need for harvesting within this area, TH will be consulted and their best practices will be adhered to as outlined in the WDSLAP.

2.7.6 Rare Plants. The West Dawson and Sunnydale area contains two plant species identified in the WDSLAP of regional and territorial importance. There is a significant population of the orchid *Cypripedium guttatum* (Spotted Lady's Slipper) within the planning area that may be vulnerable to poaching. In addition to the *Cypripedium guttatum*, there is also a population of the rare plant *Minuartia yukonensis* (Yukon tichwort). The protected area in the WDSLAP is intended to protect these plants, and there is to be no timber harvesting within the protected area. If any of these plants are found within active harvest areas, the Department of Environment will be contacted as soon as possible to manage accordingly.

3.0 Harvesting Section. The plan area has had harvesting in the past and will utilize existing access structures such as roads and skid trails. These trails along with new trails will be cleared of debris and can be used for recreational trails following harvest completion. Harvest methods will be ground based with both hand and mechanical falling and will be bound to disturbance levels outlined in the Forest Management branch soil standards. The soils standard will dictate the soil condition and season that harvesting will be authorized in. Operations will aim to minimize damage to existing regeneration and retention trees. These details will be outlined in the site plan for each block.

3.1 Harvesting. The following table shows species composition and retention targets for each of the operating units in this THP.

Table 2. Operating Unit (OU) Area and Volume Summary

| <i>OU</i> | <i>Area (ha)</i> | <i>Vol/ha (m³)</i> | <i>Gross Vol (M³)</i> | <i>*Species Composit ion</i> | <i>Harvest Season</i> | <i>Retention Targets (%)</i> |
|--------------|----------------------|-----------------------------------|--------------------------------------|---|---------------------------|--------------------------------------|
| <i>TW-2A</i> | <i>13.1</i> | <i>77.5</i> | <i>1015.3</i> | <i>W₇Sw₂Sb₁</i> | <i>Dry/Frozen</i> | <i>>20%, W, Sw</i> |
| <i>TW-2B</i> | <i>13.4</i> | <i>85.2</i> | <i>1141.7</i> | <i>W₈Sw₂</i> | <i>Dry/Frozen</i> | <i>>20%, W, Sw</i> |
| <i>TW-2C</i> | <i>7.3</i> | <i>84</i> | <i>613.2</i> | <i>W₉Sw₁</i> | <i>Dry/Frozen</i> | <i>>20%, W, Sw</i> |
| <i>TW-3</i> | <i>29.7</i> | <i>99.6</i> | <i>2958.1</i> | <i>W₇Sw₂A₁</i> | <i>Dry/Frozen</i> | <i>>20%, W, Sw, A</i> |
| <i>TW-4</i> | <i>17.9</i> | <i>92.0</i> | <i>1646.8</i> | <i>W₇Sw₂A₁</i> | <i>Dry/Frozen</i> | <i>>20%, W, Sw</i> |
| <i>TW-5</i> | <i>36.9</i> | <i>46.2</i> | <i>1704.8</i> | <i>W₅Sw₃A₂</i> | <i>Dry/Frozen</i> | <i>>20%, W, Sw, A</i> |
| <i>TW- 6</i> | <i>28.6</i> | <i>50</i> | <i>1430</i> | <i>Sb₄Sw₃A₂W₁</i> | <i>Dry/Frozen</i> | <i>>20%, Sb, Sw, A, W</i> |
| <i>Total</i> | <i>146.9</i> | | <i>10509.9</i> | | | |

*W- white birch, Sw- white spruce, A-aspen. Subscript numbers after each species symbol indicates the percent composition. Eg, W₁₀ indicates a stand of 100%White birch.

3.2 Silviculture System. A minimum of 20% retention will be reserved within these blocks to maintain vertical and horizontal structure and complexity, while maintaining aesthetics and contributing to coarse woody debris in the future. Retention of all aspen, immature spruce, as well as mature spruce and birch will be maintained as in block variable retention. The site plan prepared pre-harvest for each block will outline how this will be achieved. The mature spruce that are retained will continue to increase in height and diameter, and may provide excellent opportunities for future harvest in 10 to 50 years.

3.3 Reforestation. Natural regeneration of this stand is the preferred method of reforestation, and will be achieved mostly through coppicing of cut birch. Some areas have white spruce understory consisting of saplings and poles, which will be reserved where operationally feasible and contribute to the future stand. The minimum stocking standards for each block will be outlined in each site plan prepared prior to harvest, and assessed post-harvest. If these standards are not met then fill planting will occur. Although some alder growth is expected as a post-harvest response, it is not expected to out-compete natural or artificial seedlings.

4.0 Access Management. The DFRMP addresses access and access management in section 5.7. It outlines the primary objective of access management is to minimize environmental issues while providing access for forest resources and sets out the following strategic direction:

“Incorporate access management into development planning. The primary objective is to minimize creation of long term access and ensure that deactivation and decommissioning of access is addressed.

When possible utilize existing access and integrate with other forest land users (i.e. mining sector and tourism).

Consider available methods of access control and management to minimize indirect negative impacts (i.e. gates, natural barriers, hunting restrictions and seasonal restrictions).”

Existing road and trail infrastructure will be utilized where possible and new construction will commence along proposed road locations outlined in Appendix A. Any new development proposed with forest harvesting applications shall be built to standards recognized by the *Forest Resources Act* for construction, maintenance and decommissioning.

These roads will be built and maintained as forest resource roads with the objectives of the WDSLAP in mind. Forest resource roads restrict access to permit holders only, and cannot be used by the public. These roads will be low impact and can be used as trails to benefit the community following completion of harvesting.

All proposed harvesting will require site plans approved by FMB, which contain standards for soil conservation and disturbance levels within the harvest block. All new road construction will be assessed to address erosional concerns and access following completion. Access along newly developed roads may be restricted to timber resource license holders to reduce negative environmental impacts, for reasons of safety or other considerations. A brief description of each road is outlined below.

- 4.1 Operating Units 2a,b,c** - There is an existing access route that leads to OU 2a and 2b. Approximately 1.2km of new class 3 all season road construction will be required on slopes less than 25%. All wood will come out to the existing access and onto the highway from this existing road.
- 4.2 Operating Unit 3** - There is an existing trail from the Top of the World highway into this unit where harvesting previously occurred. Approximately 1.0km of class 3 all season additional new access will be required. Moderate side slopes will dictate cut and fill construction. Permits will be required to gain access onto the highway from this point.
- 4.3 Operating Unit 4** – Approximately 0.9km of new class 3 all season road is proposed approximately 320m north of the OU 2 access on the Top of the World highway. Side slopes are generally less than 25%, and will not require cut and fill construction.
- 4.4 Operating Unit 5** – There is an old existing road below the gravel pit that has been used for incidental firewood extraction in the past. Much of this old road is now grown over with mature trees. This access will be followed where it exists, and due to the age of the road, will closely resemble new road construction. There is approximately 3.5km of road to be constructed. Much of this is on side slopes greater than 25%, and will deploy cut and fill construction techniques.
- 4.5 Operating Unit 6** – There is an existing road just off of the Sunnydale road that provides access adjacent to this operating unit. The road has grades less than 17% where it is adjacent to the claim. New road construction will be completed under the authority of the Placer Mining Act.

5.0 Mining and Forestry

The DFRMP (section 5.4) supports the use of commercial timber on mining claims, the DFRMP sets out the following strategic direction:

“Ensure that the higher value timber in riparian areas where placer mining activity is occurring is accessible and is being utilized by the forest industry or other users.

If possible reduce or remove forest management guidelines and standards for riparian management if placer activity is planned or is occurring in the riparian management area so that the forest industry operators can salvage the forest resource before it is impacted by placer activity.

Ensure that clarity and proper approvals are sought from regulatory authorities pertaining to rights to harvest timber on mining claims.”

This THP includes operating unit 6 which is a placer mining claim. It is included in this THP to allow for commercial use of the timber that will be cleared on the mining claim. It should be noted that the authority to cut timber on any placer mining claim comes from the *Placer Mining Act*. This THP does not have the authority to determine placer mining activities in this operating unit.

6.0 References

Dawson Forest Resources Management Plan. Department of Energy Mines and Resources, Forest Management Branch. March 2013.

West Dawson and Sunnydale Local Area Plan. Tr’ondek Hwech’in, Department of Energy Mines and Resources. August 2013.

Recommendations regarding habitat protection measures for the Forty Mile Caribou Herd. Forty Mile Caribou Herd working Group. January 19, 2009.

Klondike Valley District Land Use Plan. Yukon Community and Transportation services. September 1988.

Acronyms

- WDSLAP- West Dawson and Sunnydale Local Area Plan**
- DFRMP- Forest Resource Management Plan**
- THP- Timber Harvest Plan**
- FMB- Forest Management Branch**
- EMR- Energy Mines and Resources**
- TH - Tr’ondëk Hwëch’in**

7.0 Appendices

Appendix A: 1:35,000 Timber Harvest Plan Map

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Appendix B: Representation Summary

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