



BRITISH COLUMBIA

**Ministry of
Forests**

Office of the Minister

MEMORANDUM

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JUL 26 2007

To: Bill Warner
Regional Manager
Northern Interior Forest Region

Phil Zacharatos
Regional Manager
Southern Interior Forest Region

From: The Honourable Rich Coleman, Minister of Forests and Range

Re: Amendment No. 1 to the *Interior Appraisal Manual*

I hereby approve Amendment No. 1 to the *Interior Appraisal Manual* and attach a copy for your use. The following sections have been amended:

Section 1.3 (2): A reference to “Interior Market Pricing System Update - 2007” paper has been added.

Tables 6-1, 6-2 and 6-3: Tabular average sawlog stumpage rates by forest zone and species have been updated.

Section 7.4.1: The definition of the BC Consumer Price Index (CPI) has been updated.

In addition, some typographical errors and references have been corrected.

This amendment will come into force on August 1, 2007. Further amendments or revisions to this manual require my approval.



Rich Coleman
Minister

Attachment

pc: Bill Howard, Director, Revenue Branch



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and Range



MANUAL REVISION TRANSMITTAL

FOR FURTHER INFORMATION OR IF YOU HAVE A CHANGE OF ADDRESS, PLEASE CONTACT:

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MANUAL TITLE	
Interior Appraisal Manual	
AMENDMENT	ISSUE DATE
Amendment No. 1	August 1, 2007
MANUAL CO-ORDINATOR	
Judy Laton Manuals Co-ordinator	
AUTHORIZATION (Name, Title)	
W. Howard Director, Revenue Branch	

Please make the following changes to your copy of the above Ministry manual.

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT TABLE OF CONTENTS	PAGE(S)	COMMENTS
Remove	Table of Contents	i - iv	After Table of Contents Tab
Insert		i - iv	
Remove	Chapter 1	5 - 8	After Chapter 1 Tab
Insert		5 - 8	
Remove	Chapter 2	5 - 6	After Chapter 2 Tab
Insert		5 - 6	
Remove	Chapter 4	3 - 4 11 - 16 37 - 40 47 - 48 55 - 56	After Chapter 4 Tab
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Remove	Chapter 6	1 - 2 5 - 12	After Chapter 6 Tab
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ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT	PAGE(S)	COMMENTS
Remove	Appendix	3 – 4 13 - 14	After Appendix Tab
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1.2 Terms of Reference

1. Pursuant to section 105 of the *Forest Act* the provisions of this manual are policies and procedures to be used in the determination, redetermination and variance of stumpage rates in the Northern Interior Forest Region and in the Southern Interior Forest Region and Manning Park.

1.2.1 Responsibility for Stumpage Determination

1. The following employees of the ministry are authorized to determine, redetermine and vary rates of stumpage:
 - a. regional managers, regional timber pricing co-ordinators, and employees of the regional revenue sections, and
 - b. director and employees of Revenue Branch.

1.3 Numbering and Calculation Conventions

1. The following exemplifies the numbering system used in this manual:
 1. = Chapter.
 - 1.1 or 1.1.1. = Section.
 - 1.1.1 (2) = Section with subsection.
 - Table 4-2 = Table 2 within chapter 4.
2. The calculation of the Interior Average Market Price must be performed in accordance with the specifications contained in the documents titled: "*Specifications: Calculation of the Interior Average Market Price*" dated July 1, 2006, and "**Interior Market Pricing System Update - 2007**".
3. The calculation of the stand value index, mean value index and the base rate must be performed in accordance with the specifications in the document titled: "*Specifications: Calculation of Interior Stumpage Rates*" dated July 1, 2006.
4. Where a value is specified as a limit, for example a constraint or a requirement for an equation,
 - a. The value will be treated as an absolute value, and
 - b. An actual measurement or record will not be rounded before use unless otherwise specified in this manual.

1.4 Cutblocks within a Cutting Authority Area

1. Cutblocks within a cutting authority area must:
 - a. Constitute a logical unit,
 - b. Be within the same forest district,
 - c. Be tributary to a common point of appraisal,
 - d. Must not exceed a maximum distance of ten kilometres between the furthest boundaries of the furthest cutblocks, except when required for bark beetle epidemic blanket salvage.

1.5 Appraisal Data Requirements

1. The cruise and all other pertinent information required for the appraisal must be submitted by the licensee or BC Timber Sales with the appraisal data submission to the district manager.
2. Unless otherwise specified by the Director, cruise data must be gathered and compiled according to the approved interior standard timber merchantability specifications in Table 1-1 below and in accordance with the following Ministry publications:
 - a. *Cruising Manual* web site:
<http://www.for.gov.bc.ca/hva/manuals/cruising/>
 - b. *Cruise Compilation Manual*.
3. When requested by the district manager, a copy of the original field data must be supplied by the licensee.

Table 1-1 Interior Standard Timber Merchantability Specifications

Description	
The following standard timber merchantability specifications must be used for all appraisals.	
Stumps (Measured on the side of the stump adjacent to the highest ground.)	
no higher than	30.0 cm
Diameter (outside bark) at stump height	
lodgepole pine: all timber that meets or exceeds	15.0 cm
all other species: all timber that meets or exceeds	20.0 cm
Top diameter (inside bark or slab thickness)	
for all species and ages, except cedar older than 141 years, all timber that meets or exceeds	10.0 cm
Top diameter (inside bark or slab thickness)	
for cedar older than 141 years, all timber that meets or exceeds	15.0 cm
Minimum length	
log or slab	3.0 m

1.5.1 Comparative Cruise Data

1. Comparative cruise data is cruise data from an existing, cutting authority area that is used in the appraisal of a new cutting authority area.
2. Comparative cruise data will be chosen following procedures set out in section 2.1.2.2 of the *Cruising Manual*.

2.2.1.1 Changed Circumstance Reappraisal Procedure

1. The licensee shall submit to the district manager an interior appraisal data submission and map if the cutting authority area must be reappraised because of a changed circumstance under section 2.2.1.
2. Thereafter the changed circumstance reappraisal procedure is the same procedure as that required by section 2.1(2) through 2.1(7).

2.2.1.2 Effective Date of a Changed Circumstance Reappraisal

1. Except as provided in subsections (2) and (3) of this section, a reappraisal because of a changed circumstance is effective on the day after the effective date of the most recent appraisal or reappraisal of the cutting authority area prior to the changed circumstance reappraisal.
2. Where the changed circumstance is because of an amendment to the cutting authority area referred to in subsection 2.2.1(1)(c), the reappraisal is effective on the first day of the month following the date that the district manager approves the amendment.
3. Where the changed circumstance is a result of sudden and severe damage referred to in subsection 2.2.1(1)(d), the effective date of the reappraisal is the first day of the month following the date when the event that caused the sudden and severe damage stopped on the cutting authority area.

2.2.2 Minister's Direction

1. The Minister may direct that a stumpage rate be redetermined or varied at any time and that the redetermined or varied stumpage rate be effective on any future date.
2. The Minister may specify criteria and procedures for the redetermination or variance.

2.2.2.1 Minister Directed Reappraisal Procedure

1. The licensee shall submit to the district manager an interior appraisal data submission, and map, if requested by the district manager or their designate, within forty-five days of the minister's direction.
2. Thereafter, the ministerial direction reappraisal procedure shall be the same procedure as that required by subsections 2.1(2) through 2.1(7).

2.2.3 Reappraisals Due to Insect Damage

1. a. A cutting authority with an adjustable stumpage rate may be reappraised on or after April 1, 2006 only once under this section during the term and all extensions of the cutting authority on the basis of a revised appraisal data submission if the licensee submits a revised appraisal data submission to the District Manager.

b. The revised appraisal data submission is the appraisal data submission that was used in the most recent appraisal or reappraisal of the cutting authority area prior to the revision, hereinafter referred to in this section as the original ADS, with changes permitted only to the cruise data in the original ADS in accordance with the paragraphs (c) and (d) of this subsection.

c. The licensee may either:
 - i. Update the insect attack code information from the field for each species of timber in the cruise data for codes 1, 2, 3, 5, 6, 7 and 8 as defined in the *Cruising Manual* and recompile the cruise for the cutting authority area by using the cruise data from the cruise in the original ADS for the plots in that part of the cutting authority area where timber has been harvested and combining that with the cruise data with updated insect attack codes for the plots in that part of the cutting authority area where timber has not been harvested, or

ii. Recompile the cruise data that was in the cruise in the original ADS.
 - ii. Recompile the cruise data that was in the cruise in the original ADS.
- d. Notwithstanding any other paragraph of this section, other data must be changed if it is required by the manual in effect at the time of the reappraisal and was not submitted in the original ADS.

2.2.3.1 Insect Damage Reappraisal Procedure

1. The insect damage reappraisal procedure is the procedure required by section 2.1(2) through 2.1(7).

2.2.3.2 Effective Date of an Insect Damage Reappraisal

1. The effective date of an insect damage reappraisal is the first day of the month following the month in which the District Manager receives the revised appraisal data submission.

2. The point of appraisal that when used in the calculation of the operating cost estimate produces the least cost total development, harvesting and transportation determination of the operating cost estimate unless:
 - a. five years have passed from the date that a milling facility was permanently rendered incapable of producing lumber and chips, and
 - b. it was the only milling facility associated with that point of appraisal.
3. Where a point of appraisal cannot be selected under subsection (2) of this section because of the conditions of paragraphs (a) and (b) of that subsection, the point of appraisal that produces the next lowest total development, harvesting and transportation estimate must be used in the determination of the operating cost estimate in accordance with the requirements of subsection (2) of this section.
4. The process in subsection (3) of this section is continued until a point of appraisal can be selected without being excluded by the conditions of paragraphs (2)(a) and (b).
5. For the purposes of determining the least cost total harvesting, development and transportation estimate, the locations that were used in measurement of cycle time for each point of appraisal in Table 4-1 as of October 1, 2003 will be used.
6. The manufacturing costs and average market values for the selling price zone in Table 4-1 for the least cost point of appraisal selected under paragraphs 2, 3 or 4 must be used in the appraisal.

Table 4-1 Points of Appraisal

Northern Interior (Zone 5, 15, 25 & 35)			
Bear Lake Burns Lake Clear Lake Engen	Fort St. James Fraser Lake Houston Isle Pierre	Mackenzie Prince George Quesnel	Smithers Strathnaver Upper Fraser Vanderhoof
Skeena (Zone 6, 16, 25 & 36)			
Terrace	Carnaby	Hazelton	Kitwanga

Southern Interior (Zone 7, 17, 25 & 37)			
Adams Lake	Galloway	Merritt	Thrums
Armstrong	Grand Forks	Midway	Valemount
Canal Flats	Kamloops	Okanagan Falls	Vavenby
Canoe	Kelowna	Park Siding	Westbank
Castlegar	Lavington	Princeton	Ymir
Craigellachie	Louis Creek	Radium	
Creston	Lumby	Revelstoke	
Elko	McBride	Slocan	
South Cariboo (Zone 8, 18, 25 & 38)			
100 Mile House	Chasm	Lytton	Squamish Williams Lake Boston Bar
Fort Nelson - Peace (Zone 9, 19 & 25)			
Chetwynd	Fort Nelson	Fort St. John	Taylor

7. The following Points of Appraisal will expire on the dates indicated: Upper Fraser (June 30, 2008), Taylor (July 31, 2008), Louis Creek (August 1, 2008), Carnaby (February 24, 2010).

4.3.2 Tabular Cost Estimates

Tabular costs are determined using the procedures and criteria in this section for the total length of road that the submitting professional certifies is required to remove the timber from the cutting authority area.

4.3.2.1 Subgrade Construction

The subgrade construction cost estimate includes:

- clearing,
 - grubbing,
 - stripping,
 - debris disposal,
 - stump removal,
 - ditch construction,
 - turnout construction (not landings),
 - material costs, and
- installation of culverts with diameters up to 950 mm or the equivalent cross-section area or single log abutment culverts up to 3.4 m span.

Right-of-way felling and logging is excluded.

4.3.2.2 Subgrade Construction Variables

For appraisal purposes the following subgrade construction variables are recognized:

1. Section length: (L)
 - a. Each section should be representative of a single moisture class. Section lengths are recorded to the nearest 0.1 km. Each section should be 1 km or longer, although some individual section lengths less than 1 km but greater than or equal to 0.100 km are acceptable for extreme variations of slope or percent rock. The section length includes that portion traversing through landings. For ground skidding, short roads (up to and including 100 m long) that access single landings are included in the tree-to-truck cost estimates (section 4.4) and are not eligible for development cost estimates.
 - b. All road segments less than 0.100 km, excluding short ground skidding spurs less than 0.100 km, are to be aggregated with other adjacent road segments, making appropriate adjustments to average site conditions using the distance-weighted averages for the site variables for that section.
 - c. A short spur road less than 0.100 km that does not access a single landing may be aggregated with a similar stand-alone non-adjacent road section.

2. Road Types :

- Snow/Ice Road (WINTER): - A single lane seasonal road including turnouts, with a flat road profile that is built with a combination of snow, ice and dirt, on a surface that may or may not have been stumped. The driving surface is built up using multiple layers of snow and ice such that extra stabilizing material costs are not applicable. A flat road profile means the side slope is less than or equal to 15% and there is minimal side cut. Minimal means, cuts into mineral or organic soil must not exceed 0.5 m in depth for distances up to 0.1 km. Seismic lines being used for roads, that have not previously been used as roads, will be considered as new construction and qualify as snow/ice roads provided they fall within the above criteria.
- Long Term (LT) - A long term road is a road that is planned to be used for harvesting and/or hauling for more than two years.
- Short Term (S) - A short term road is a road that is neither temporary or long term.
- Temporary (T) - A temporary road is a road that is planned to be used for harvesting and/or hauling for less than one year.

3. Uphill Side Slope: (SLOPE %)

Uphill side slope percent may show a variation (+/- 15% about the average) within any section length and represents the average of all slopes in the section to a maximum of 50%. To derive an average for uphill side slope percent, several representative cross-section measurements are taken along the section length and the sum of one-half of the distance on each side of the measurement is applied as a weight against the measurement at that cross-section. The uphill side slope percent is measured at right angles to the road centreline and is recorded to the nearest integer. Where the road is located on a bench, the uphill side slope of the bench is used.

4. Percent Rock: (ROCK %)

Rock includes bedrock and large boulders (each greater than 1.5m in diameter). It may be rippable or may require drilling and blasting. Rock percent may show a variation (+/- 15% about the average) within any section length and represents the average of all rock percents in the section to a maximum of 50%. To derive an average percent rock, representative cross-section measurements are taken along the section length and the percent rock calculated. The sum of one-half of the distance on each side of where the measurements were taken is applied as a weight against the percent rock calculated at that cross-section. The percent rock is determined as follows:

$$\text{ROCK \%} = \frac{h^2}{H^2} * 100$$

Where:

h = the vertical cut height of all rock measured from the bottom of the ditch.

H = the total vertical cut height of all materials above the bottom of the ditch.

To determine the percent rock for roads not yet constructed, constructed roads on similar land/rock forms are used as a guide. Alternately, where estimates of rock volume from commercial road design programs are available for tabular sections, that information may be used to estimate the rock percent.

5. Soil Moisture Regime (SMR):

Those biogeoclimatic zones/subzones with site series identified as "M", "VM" or "W" in the shaded area of the table in Appendix III are considered "Wet" for appraisal purposes.

6. Biogeoclimatic Zones

BWBS	-	Boreal White and Black Spruce
SBS	-	Sub Boreal Spruce
ESSF	-	Engelmann Spruce - Subalpine Fir
MS	-	Montane Spruce
ICH	-	Interior Cedar Hemlock

4.3.2.3 Subgrade Cost Estimate

For each road type, except snow/ice roads, the subgrade cost estimate in \$/km is determined from the equation for the appropriate road group.

Road Group	Equation
1	Refer to subsection 4.3.3(5)(n)
2	$14206 + (195 * \text{SLOPE\%})$
3	$5505 + (78 * \text{SLOPE \%}) + (3978 * \text{LT}) - (2761 * \text{T})$
4	$5607 + (117 * \text{SLOPE\%}) + (5032 * \text{ESSF})$
5	$5886 + (109 * \text{ROCK\%}) + (3615 * \text{SMR}) + (4810 * \text{LT})$
6	$4631 + (97 * \text{SLOPE\%}) + (213 * \text{ROCK\%}) + (2285 * \text{SMR}) + (4784 * \text{LT})$
7	$5907 + (112 * \text{SLOPE\%}) + (174 * \text{ROCK\%}) + (3381 * \text{LT}) - (5200 * \text{T})$ (\$2198/km set as minimum. If equation yields less than \$2198 then use \$2198)
8	$2412 + (58 * \text{SLOPE\%}) + (2906 * \text{LT}) + (1058 * \text{SBS})$
9	$1249 + (196 * \text{SLOPE\%}) + (5929 * \text{LT}) + (3159 * \text{MS}) + (6153 * \text{ESSF}) + (4045 * \text{ICH})$ (\$1509/km set as minimum. If equation yields less than \$1509 then use \$1509)
10	$4547 + (260 * \text{SLOPE\%}) + (292 * \text{ROCK\%}) + (5147 * \text{ESSF/MS}^1)$ ¹ ESSF/MS = 1 if biogeoclimatic zone is either ESSF or MS
11	$11147 + (430 * \text{SLOPE\%}) + (831 * \text{ROCK\%}) - (5371 * \text{ESSF})$ (\$9088/km set as minimum. If equation yields less than \$9088 then use \$9088)
12	$221 + (575 * \text{SLOPE\%}) + (8137 * \text{LT})$ (\$2580/km set as minimum. If equation yields less than \$2580 then use \$2580)

Where:

Road groups are defined in Table 4-3.

LT	=	1 if a long term road, otherwise = 0
T	=	1 if a temporary road, otherwise = 0
SMR	=	1 if Soil Moisture Regime is “wet”. Otherwise SMR = 0
ESSF	=	1 if road construction is within this biogeoclimatic zone. Otherwise ESSF = 0
SBS	=	1 if road construction is within this biogeoclimatic zone. Otherwise SBS = 0
MS	=	1 if road construction is within this biogeoclimatic zone. Otherwise MS = 0
ICH	=	1 if road construction is within this biogeoclimatic zone. Otherwise ICH = 0

Snow and Ice Roads (winter)

The subgrade cost estimate for new snow and ice roads (winter) is \$5628/km.

Table 4-3 Road Groups

Road Group #	Districts Included	Within the Geographic Boundary of a TSA, SB and TFL
1	Kalum	
2	Skeena Stikine	
3	Nadina	
4		Williams Lake TSA, SBs J, K & L Prince George TSA, SBs G & H, TFLs 30, 53 Quesnel TSA, SBs E, F, G, H & I, TFL52 100 Mile House TSA, SBs, G & H
5	Vanderhoof	Prince George TSA, SBs C, E, F & I, TFL5, TFL 42
6		Mackenzie TSA, SBs G through P, Prince George TSA SB's A & B
7	Peace Fort Nelson	Mackenzie TSA, SBs A through F
8	Chilcotin	Williams Lake TSA, SBs E, F, G, H, and I Quesnel TSA, SBs A, B, C & D 100 Mile House TSA, SBs A, B, C, D, E, F
9	Kamloops Cascades	TFL 15, 49 Okanagan TSA, SBs 1, 2, 3, 4, 5
10	Rocky Mountain	Boundary TSA, TFL 8
11	Columbia Kootenay Lake	Arrow TSA, TFL 23, 3
12	Headwaters	Williams Lake TSA, SBs M & N Okanagan TSA, SBs, 6,7,8,9, TFL 33

Woodlot and Timber Licence cutting authorities are assigned to the road group for the area in which they are geographically located.

- iii. if the conditions under 4.5.1 (1)(c) are met, then
 - the place that would have been the point of appraisal if the timber had been harvested in the area from which the current cutting rights are transferred from.
- e. add this to the average weighted cycle time from paragraph 'c' above.

The cycle consists of loading, hauling, weighing, unloading, return time, and unavoidable delays. The cycle time will normally be determined by taking into consideration all the factors that may affect it: distance, expected rate of speed, necessary delays, expected standard of roads and their maintenance, traffic density, and seasonal weather conditions.

In many cases standard cycle time schedules from specific road junctions to the point of appraisal have been developed and should be used (Sector times) .

Unavoidable delays are periods when the truck is on the job but not operating due to unpredictable delays such as; tightening binder chains, minor repairs made by driver, checking and adjusting brakes, minor delays prior to loading and unloading, refuelling, etc. Unavoidable delay time does not include any breakdown which requires shop repair, the services of a skilled mechanic, or a spilled load of logs. The time for load, unload and unavoidable delay is set at 75 minutes for cable yarding systems (see section 4.4.3 (4)) and 60 minutes for all other systems (see section 4.4.3 (1), (2), & (3))

3. Haul Method

Cost estimates do not recognize different types of logging trucks. The estimate is based upon the possible haul method, either highway or off-highway and not specifically on the licensee's particular method.

Highway hauling is assumed when loaded logging trucks must travel in part over roads administered under the Highway Act, without truck-to-truck transfer, to the point of appraisal, or on roads administered under the Industrial Road Act and Forest Service Roads as defined in Forest Act where prolonged known road restrictions prevent the use of oversize loads, or in all instances where the volume per tree is less than 0.20 m³.

Off-highway hauling is assumed when loaded logging trucks can travel over roads administered under the Industrial Road Act and Forest Service Roads as defined in Forest Act to the point of appraisal, or to a recognized reload. Where prolonged known restrictions (e.g., bridge load limit, narrow road, through rock cut, WCB Regulations, etc.) prevent the use of oversize loads, highway haul is assumed.

4.5.2 Truck Haul Cost Estimates

4.5.2.1 Primary Haul

The primary truck haul cost estimate is determined from the following equation.

1. Highway Haul

For all highway haul equations if the CT is greater than 0 then the minimum is \$1.26/m³. If CT = 0 then \$/m³ = 0.

$$\$/m^3 = \text{CONSTANT} + (1.90 * \text{CT}) + (0.41 * \text{BA\%}/100) + (2.32 * \text{DE\%}/100) + (0.87 * \text{FI\%}/100) + (3.21 * \text{HE\%}/100) + (0.47 * \text{LO\%}/100)$$

Where:

REGION	:	Cariboo	FNP	Nelson	Prince Rupert	Other
CONSTANT	=	0.05	0.95	0.22	-0.64	-0.26

2. Off-Highway Haul

For all off-highway haul equations if CT is greater than 0 then the minimum is \$1.38/m³. If CT = 0 then \$/m³ = 0.

$$\$/m^3 = \text{CONSTANT} + (1.36 * \text{CT}) + (0.76 * \text{BA\%}/100) + (1.38 * \text{HE\%}/100) - (0.38 * \text{SP\%}/100)$$

Where:

REGION	:	Kamloops	Nelson	FNP	Other
CONSTANT	=	1.47	0.72	1.81	0.40

For highway, off-highway and secondary transportation:

CT = Cycle time to the nearest 0.1 hours

BA = Balsam HE = Hemlock

DE = Deciduous Species (all) LO = Lodgepole Pine

FI = Fir SP = Spruce

Region constants:

FNP	= Fort Nelson & Peace Forest Districts
Prince George	= Fort St. James, Mackenzie, Prince George, and Vanderhoof Forest Districts
Prince Rupert	= Kalum, Nadina and Skeena Stikine Forest Districts
Kamloops	= Cascades, Kamloops, Headwaters and Okanagan Shushwap Forest Districts
Cariboo	= Chilcotin, 100 Mile House, Central Cariboo and Quesnel Forest Districts
Nelson	= Arrow Boundary, Columbia, Kootenay Lake and Rocky Mountain Forest Districts

4.5.2.2 Secondary Haul

The secondary haul cost estimate is made when logs must be truck hauled between the dewater and reload site to the appraisal point.

$$\$/m^3 = 1.625 * CT$$

4.5.3 Water Transportation Cost Estimate

A water transportation cost estimate is made when logs must be transported by water between the cutting authority and the point of appraisal or reload. The estimate includes the costs of strapping logs on the truck, dumping, booming, developing and operating dumping and booming grounds, and towing. The cost estimate for reservoir lakes applies to all marine appraisals and to Arrow, Kinbasket, Ootsa, Revelstoke and Williston Lakes. All other lakes receive the natural lake cost estimate.

1. Dump and Boom:

Reservoir Lakes and Marine:	$\$/m^3 = \4.78
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Natural Lakes:	$\$/m^3 = \2.13
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2. Tow:

All	$\$/m^3 = \$2.1894 + 0.002633 * d$
-----	------------------------------------

Where d = one way tow distance in kilometres.

3. Dewater and Reload:

All	$\$/m^3 = \1.51
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Only considered if the mill infeed is not located on the same lake, or a dam transfer is required. Otherwise dewatering is part of the manufacturing cost estimate.

4.5.4 Special Transportation Systems

A special transportation system is recognized in the appraisal where geographic conditions dictate its use.

The cost estimates include all costs associated with servicing the appropriate cutting authorities, excluding all on-site costs of owning and operating a camp facility.

The recognized special transportation systems are as follows:

1. Railway

a. Truck-to-Rail Transfer

When logs are appraised by railway for part of the way between the cutting authority and the point of appraisal, the cost estimate for the truck-to-rail transfer part of the phase is:

All \$/m³ = \$3.68

b. Railway Transportation

The railway transportation cost estimate is based on the following table for the points of origin shown. Otherwise, the best information on hand is used.

Table 4-6 Rail Log Transportation

Origin	Cost Estimate (\$/m ³)	Point of Appraisal
Leo Creek	\$9.45	Fort St. James
Lovell	\$12.42	Fort St. James
Bear Lake	\$17.55	Fort St. James
Minaret Creek	\$19.12	Fort St. James
Niteal	\$16.67	Fort St. John

- d. have full time camp staff, and
 - e. be outside of a support centre listed in section 4.4.2(6).
3. Where a cutting authority area, serviced by a camp, may be accessed only by rail, the camp cost estimate for that cutting authority area is \$2.66/m³, otherwise the cost estimate is \$2.41/m³.

4.8.3 Low Volume Cost Estimate

All fully appraised cutting authorities are eligible for a specific low volume cost estimate in addition to all other phase cost estimates.

1. Where the licence to which the cutting authority belongs has an allowable annual cut of Crown timber greater than 0 m³ and less than 3 000 m³:

$$\$/m^3 = 8.35$$

2. Where the licence to which cutting authority belongs has an AAC of 3 000 m³ or greater and the net cruise volume for the cutting authority is less than 3 000 m³:

The cost estimate is: (prorated by volume)	Ground Skidding	\$0.91/m ³
	Highlead & Grapple	\$1.03/m ³
	All Other	\$0.00/m ³

4.9 Basic Silviculture Cost Estimate

1. Basic silviculture treatment cost estimates include all treatment costs that are required to achieve free-growing obligations. Basic silviculture may not be required on some cutting authorities where:
 - a. this intent has been specified in the licence, cutting authority, or by applicants agreement, or,
 - b. the basic silviculture work is funded by any Crown agency.

When either of the above circumstances exist, the basic silviculture cost estimate is not included in the appraisal, except as noted in section 5.6.4 of this manual.

2. The area to be appraised for silviculture is the net merchantable area (NMA) from the cruise. The area must be the same as the area directly attributed to the appraised Net Merchantable Volume (NMV) of the cutting authority. Where deciduous harvest volume is included in an appraisal the area for the deciduous must also be included as part of the net merchantable area.
3. Table 4-9 lists the associated cost estimates (\$/ha) for Biogeoclimatic Ecosystem Classification (BEC) zone, subzone, and variant combinations across the interior. Where the subzone/variant combination is not listed in the table, the BEC undifferentiated subzone “un” cost estimate is used.
4. Where a cutting authority area includes more than one BEC/zone/subzone/variant combination, a prorated BEC zone/subzone/variant cost estimate will be determined by prorating the cost estimates from Table 4-9 for the primary and secondary BEC combination identified in the appraisal data submission based on their respective percent by net merchantable area identified in the appraisal data submission.
5. The cutting authority silviculture cost estimate is calculated as follows:

$$\$/m^3 = [NMA(\text{ha}) * [\text{Prorated BECzone/subzone/variant cost}(\$/\text{ha}) * (\text{CAPCUT \%}/100)*1.25]] / \text{NMV}(m^3)$$

Untrended Manufacturing Cost Estimates (\$/m³) 2004 Cost Survey Base		
	Species	Manufacturing cost (\$/m³) 0% Decay
Southern Cariboo (Zone 8)	LO	33.60
	SP	30.33
	BA	35.22
	FI, LA, WH, YE	48.86
	CE	42.35
	HE	42.26

Fort Nelson/Peace (Zone 9)	LO	35.13
	SP	31.93
	BA	36.17

To derive the manufacturing cost estimate for decay % from 1 to 50, use the above table values in the following equation:

The cost estimate is calculated to four decimal places, then rounded to the nearest cent. Where decay exceeds 50 percent, the manufacturing cost estimate for 50 percent decay is used.

$$\text{Manufacturing cost } (\$/\text{m}^3) = \text{decay \%} * 0.1704 + \text{base value from table.}$$

For a list of points of appraisal by zone, refer to section 4.1.1

4.10.1 Manufacturing Cost Estimate Adjustment

For each species of timber except lodgepole pine:

$$\text{Adjusted Species MC} = \text{Species MC} - \text{MCAF}$$

Where:

Species MC is the species manufacturing cost calculated according to section 4.10.

MCAF is the manufacturing cost estimate adjustment factor from Table 4-11 for the point of appraisal of the cutting authority area being appraised or reappraised.

Adjusted Species MC is the adjusted species manufacturing cost estimate for that species of timber.

Miscellaneous Timber Pricing

Policies

6

6.1 Average Stumpage Rates by Forest Zone and Species

1. Each of the following forest zones referred to in Tables 6-1, 6-2 and 6-3 is made up of the corresponding forest district areas:
 - a. North Central Zone - Fort St. James, Mackenzie, Nadina, Prince George, Quesnel and Vanderhoof Forest Districts.
 - b. North West Zone - Kalum and Skeena Stikine Forest Districts.
 - c. North East Zone - Fort Nelson and Peace Forest Districts.
 - d. South East Zone - Arrow Boundary, Columbia, Headwaters, Kamloops, Kootenay Lake, Okanagan Shuswap and Rocky Mountain Forest Districts.
 - e. South West Zone - 100 Mile House, Cascades, Central Cariboo and Chilcotin Forest Districts.

Where a species of timber is not listed in Table 6-1, the rate that shall be used for that species of timber is the rate listed in the column headed as OTHER.

Table 6-1 Average Sawlog Stumpage Rates by Forest Zone and Species

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	Y. PINE	SPRUCE	OTHER
North Central	23.29	18.29	23.21	18.74	-	21.01	-	23.87	21.77
North West	4.92	4.82	-	5.26	-	8.37	-	6.07	5.43
South East	16.00	10.71	13.45	7.10	11.13	17.20	13.23	16.44	15.58
South West	17.59	12.67	14.74	8.80	20.39	16.24	19.39	17.50	16.34
North East	7.19	-	-	-	10.58	10.93	-	12.94	11.89

2. a. The sawlog stumpage rate for each species of coniferous timber harvested under a community forest agreement entered into under the *Forest Act* or an associated road permit, will be 15 percent of the sawlog stumpage rate for that species in Table 6-1.
 - b. The stumpage rate determined under paragraph (a) of this subsection shall be redetermined on August 1st of each year in accordance with this subsection.
3. Sections 6.2 through 6.7 do not apply to community forest agreements and associated road permits.

- i. the cruise data that is used in the appraisal may be from the cruise of the cutting authority area or from the cruise of a comparable cutting authority that has similar stand and terrain characteristics,
- ii. the district manager may require the selection of a comparable cutting authority to be in accordance with procedures set out in section 2.1.2.2 of the *Cruising Manual*, and
- iii. except as provided in sections 2.3(5) and 7.2.1(2) the total stumpage rate is adjustable for the term of the cutting authority and all extensions.

6.3 Road Permits

1. In this section the area of a forest district or the area of a timber supply area does not include the area of a park located within that district or timber supply area.
2. Except as provided in subsections 3 and 6 of this section, the stumpage rate for a road permit shall be the weighted average sawlog stumpage rate for:
 - a. all cutting authorities, other than road permits, that authorize the harvesting of timber in the same forest district in which the road permit cutting authority area is located, and that are issued under the licence that entitles the licensee to apply for the road permit, or
 - b. if the licence permitting the granting of the road permit has an allowable annual cut of 3 000 m³ or more per year, and there are no records from which the weighted average sawlog stumpage rate may be determined under:
 - i. paragraph (a), then all the cutting authorities, other than road permits, that authorize the harvesting of timber on land located in the smaller of the area of the same forest district or the area of the same timber supply area in which the road permit cutting authority area is located, or
 - ii. paragraph (a) or (b)(i), then all the cutting authorities, other than road permits, that authorize the harvesting of timber on land located in the larger of the area of the same forest district or the area of the same timber supply area in which the road permit cutting authority area is located, or
 - c. if the licence permitting the granting of the road permit has an allowable annual cut of less than 3 000 m³ per year, and there are no records from which the weighted average sawlog stumpage rate may be determined under:
 - i. paragraph (a), then all of the cutting authorities, other than road permits, that are for licences that have an allowable annual cut of less than 3 000 m³ in the smaller of the area of the same forest district or the area of the same timber supply area in which the road permit cutting authority area is located, or
 - ii. paragraphs (a) or (c)(i), then all of the cutting authorities, other than road permits, that are for licences that have an allowable annual cut of less than 3 000 m³ in the larger of the area of the same forest district or the area of the same timber supply area in which the road permit cutting authority area is located, or
 - iii. paragraphs (a), (c)(i) or (c)(ii) then all the cutting authorities, other than road permits, that authorize the harvesting of timber on land located in the smaller of the area of the same forest district or the area of the same timber supply area in which the road permit cutting authority area is located, or
 - iv. paragraphs (a), (c)(i), (c)(ii), or (c)(iii) then all of the cutting authorities, other than road permits, that authorize the harvesting of timber on land

located in the larger of the area of the same forest district or the area of the same timber supply area in which the road permit cutting authority area is located.

3. If there are no records from which the weighted average sawlog stumpage rate may be determined under paragraphs a, b or c of subsection 2 of this section, then the stumpage rate, subject to section 6.2(1)(b), is the rate in Table 6-1 for the forest zone in which the road permit cutting authority area is located.
4. a. In paragraph (a) of subsection (2) of this section, the weighted average sawlog stumpage rate that is in effect for the period between June 1 of one year in this subsection hereinafter referred to as the first year, and May 31 of the following year is determined as follows:

$$\$/m^3 = \frac{(\text{sum of Grade 1 value billed}) + (\text{sum of Grade 2 value billed})}{(\text{sum of Grade 1 volume billed}) + (\text{sum of Grade 2 volume billed})}$$

- b. Volumes **and values** in the formula above are taken from the billing records of Revenue Branch for coniferous sawlogs during the 12-month billing period ending on March 31 in the first year, if the volume of those coniferous sawlogs is greater than 500 cubic metres.
5. a. In paragraphs (b) and (c) of subsection (2) of this section, the weighted average sawlog stumpage rate that is in effect for the period between June 1 of one year in this subsection hereinafter referred to as the first year, and May 31 of the following year is determined as follows:

$$\$/m^3 = \frac{(\text{sum of Grade 1 value billed}) + (\text{sum of Grade 2 value billed})}{(\text{sum of Grade 1 volume billed}) + (\text{sum of Grade 2 volume billed})}$$

- b. Volumes **and values** in the formula above are taken from the billing records of Revenue Branch for coniferous sawlogs during the 12-month billing period ending on March 31 in the first year.
6. The stumpage rate for a road permit granted to the holder of a timber sale licence entered into under section 20 of the *Forest Act* will be the same as the stumpage rate for the timber sale licence which entitled the licensee to apply for the road permit.
7. Except as provided in Appendix VI, the stumpage rate for a road permit shall be redetermined on June 1 of each year in accordance with the procedure in this section.
8. The costs of roads constructed under road permits are eligible for inclusion as development cost estimates under section 4.3 in the appraisal of the licensees' first fully appraised tributary cutting authority. These roads will not be considered as existing roads under section 4.3.1.1.3(2).

6.3.1 Blanket Salvage Cutting Permits

1. In this section the area of a forest district or the area of a timber supply area does not include the area of a park located within that district or timber supply area.
2. Except as provided in subsection 3 of this section the stumpage rate for a blanket salvage cutting permit shall be the weighted average sawlog stumpage rate for:
 - a. all the cutting authorities other than blanket salvage cutting permits, that authorize the harvesting of timber in the same forest district as is the land in which the blanket salvage permit cutting authority area is located, and that have been issued under the same licence, or
 - b. if the licence permitting the granting of the blanket salvage permit has an allowable annual cut of 3 000 m³ or more per year, and there are no records from which the weighted average sawlog stumpage rate may be determined under:
 - i. paragraph (a), then all the cutting authorities, other than blanket salvage permits, that authorize the harvesting of timber on land located in the smaller of the area of the same forest district or the area of the same timber supply area in which the blanket salvage permit cutting authority area is located, or
 - ii. paragraphs (a) or (b)(i), then all the cutting authorities, other than blanket salvage permits, that authorize the harvesting of timber on land located in the larger of the area of the same forest district or the area of the same timber supply area in which the blanket salvage permit cutting authority area is located, or
 - c. if the licence permitting the granting of the blanket salvage permit has an allowable annual cut of less than 3 000 m³ per year, and there are no records from which the weighted average sawlog stumpage rate may be determined under:
 - i. paragraph (a), then all of the cutting authorities, other than blanket salvage permits, that are for licences that have an allowable annual cut of less than 3 000 m³ in the smaller of the area of the same forest district or the area of the same timber supply area in which the blanket salvage permit cutting authority area is located, or
 - ii. paragraphs (a) or (c)(i), then all of the cutting authorities, other than **blanket salvage** permits, that are for licences that have an allowable annual cut of less than 3 000 m³ in the larger of the area of the same forest district or the area of the same timber supply area in which the blanket salvage permit cutting authority area is located, or
 - iii. paragraphs (a), (c)(i) or (c)(ii) then all the cutting authorities, other than blanket salvage permits, that authorize the harvesting **of** timber on land located in the smaller of the area of the same forest district or the area of the same timber supply area in which the blanket salvage permit cutting

- authority area is located, or
- iv. paragraphs (a), (c)(i), (c)(ii), or (c)(iii) then all of the cutting authorities, other than blanket salvage permits, that authorize the harvesting of timber on land located in the larger of the area of the same forest district or the area of the same timber supply area in which the blanket salvage permit cutting authority area is located.
3. If there are no records from which the weighted average sawlog stumpage rate may be determined under paragraphs a, b or c of subsection 2, then the stumpage rate must be determined, subject to section 6.2(1)(b), using Table 6-1 for the forest zone in which the blanket salvage cutting authority area is located.
 4. a. In paragraph (a) of subsection (2) of this section, the weighted average sawlog stumpage rate that is in effect for the period between June 1 of one year in this subsection hereinafter referred to as the first year, and May 31 of the following year is determined as follows:

$$\$/m^3 = \frac{(\text{sum of Grade 1 value billed}) + (\text{sum of Grade 2 value billed})}{(\text{sum of Grade 1 volume billed}) + (\text{sum of Grade 2 volume billed})}$$

- b. Volumes **and values** in the formula above are taken from the billing records of Revenue Branch for coniferous sawlogs during the 12-month billing period ending on March 31 in the first year, if the volume of those coniferous sawlogs is greater than 500 cubic metres.
5. a. In paragraphs (b) and (c) of subsection (2) of this section, the weighted average sawlog stumpage rate that is in effect for the period between June 1 of one year in this subsection hereinafter referred to as the first year, and May 31 of the following year is determined as follows:

$$\$/m^3 = \frac{(\text{sum of Grade 1 value billed}) + (\text{sum of Grade 2 value billed})}{(\text{sum of Grade 1 volume billed}) + (\text{sum of Grade 2 volume billed})}$$

- b. Volumes **and values** in the formula above are taken from the billing records of Revenue Branch for coniferous sawlogs during the 12-month billing period ending on March 31 in the first year.
6. Except as provided in Appendix VI, the stumpage rate for a blanket salvage cutting permit shall be redetermined on August 1 each year in accordance with the procedure in this section.

6.4 Salvage Timber Stumpage Rates

1. This section applies to cutting authorities issued under licences which do not have an allowable annual cut. Salvaged timber is either post harvest material or damaged timber:
2. Post Harvest Material is either:
 - a. wooden culverts and bridges, or
 - b. post logging residue.
3. Damaged Timber is timber that:
 - a. Has been blown down,
 - b. Has been damaged by fire, disease, snow press, or
 - c. Will die within one year, as determined by the district manager, as a result of the affects of the mountain pine beetle, or other forest pests.
4. The criteria and methodology for the calculation of salvaged timber stumpage rates are:
 - a. Post harvest material may not be combined in the same cutting authority area with damaged timber.
 - b. Except where damage to adjacent or contiguous timber occurs after harvesting is completed on the adjacent primary logging cutting permit area and the harvesting equipment has been demobilized from the area, damaged timber salvage cutting authority areas must be scattered, and not be adjacent to or contiguous with an existing cutting authority area.
 - c. Except as provided in subsection (4)(d) of this section the total area of a clearcut salvage harvesting area shall not exceed 1 hectare.
 - d. Where salvage of only damaged stems through partial cutting will leave a stand that meets minimum stocking standards, the area harvested may be larger than 1 hectare.
 - e. Salvage logging stumpage rates may only be determined for a cutting authority where more than one-third of the volume of coniferous timber to be harvested in the cutting authority area is damaged timber.
 - f. Post harvest salvage may only occur after primary logging has been satisfactorily completed and residue and waste assessments have been submitted to and accepted by the Ministry.

- g. Salvage cannot occur on a road right-of-way which has an active timber mark associated with it.
 - h. Except as provided in Appendix VI, the stumpage rate will be fixed for one year from the effective date of the stumpage rate. The stumpage rate will be redetermined annually in accordance with the procedure in this section.
5. Where salvaged timber is damaged timber,
- a. the stumpage rate for each species of the salvaged timber will be determined using the schedule of Sawlog Stumpage Rates for Salvage of Damaged Timber by Forest Zone and Species found in Table 6-2.
 - b. effective April 1, 2007, where the licensee is not required to establish a free growing crop of trees on the cutting authority area, the stumpage rate for each species of timber shall be the sum of rate determined under paragraph (a) of this subsection and the silviculture levy determined under section 5.6.4.
6. Where the source of the salvaged timber is post harvest material, the stumpage rate for each species of timber will be determined using the schedule of Sawlog Stumpage Rates of Post Harvest Material by Forest Zone and Species found in Table 6-3.
7. Where a species of timber is not listed in Table 6-2 and 6-3, the rate that shall be used for that species of timber is the rate listed in the column headed as OTHER.

Table 6-2 Average Sawlog Stumpage Rates for Salvage of Damaged Timber by Forest Zone and Species (\$/m³)

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	Y. PINE	SPRUCE	OTHER
North Central	13.97	16.46	20.89	11.24	-	15.76	-	21.48	13.06
North West	2.95	4.34	-	3.15	-	6.28	-	5.46	3.26
South East	9.60	9.64	12.11	4.26	10.02	12.90	9.92	14.80	9.35
South West	10.55	11.40	13.27	5.28	18.35	12.18	14.54	15.75	9.80
North East	4.32	-	-	-	9.52	8.20	-	11.65	7.14

Table 6-3 Average Sawlog Stumpage Rates for Salvage of Post Harvest Material by Forest Zone and Species (\$/m³)

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	Y. PINE	SPRUCE	OTHER
North Central	5.82	14.63	11.60	4.68	-	10.51	-	11.94	5.44
North West	1.23	3.86	-	1.31	-	4.19	-	3.04	1.36
South East	4.00	8.57	6.73	1.77	5.57	8.60	6.61	8.22	3.89
South West	4.40	10.13	7.37	2.20	10.19	8.12	9.70	8.75	4.08
North East	1.80	-	-	-	5.29	5.47	-	6.47	2.97

6.5 Partially Harvested Timber

Where decked timber, or timber which has been felled and bucked, such as on right-of-way, is sold without competition; and where the volume exceeds 300 m³, a full cost estimate appraisal is completed upon an "as is, where is" basis.

Phase costs may be based on borrowed data from a representative cutting permit, adjusted for partial phase.

If the timber volume is being sold competitively, the timber may be priced according to the procedures in section 6.2, or for BCTS, sections 6.2(3) or 7.5.1(4).

7.4 Market Price Calculation

The market price is calculated as detailed in this section. It is assumed that the market price will approximate the final stumpage rate, including the bonus bid, based on the variables used.

7.4.1 Market Price Variables

PMP	= Preliminary MP.
MP	= Market Price for the cutting authority in (\$/m ³).
RSP	= Real Stand Selling Price (\$/m ³). See section 7.3.
VPH	= Total net coniferous cruise volume divided by net merchantable area (m ³ /ha).
PC	= Fraction of harvest method volume that is appraised as partial cut. PC = (100 – CAPCUT %)/100. See section 4.9 for definition of CAPCUT %. The 80% limit in section 4.9 does not apply.
FIR	= Fraction of net coniferous cruise volume that is Douglas fir.
VOL	= Net coniferous cruise volume (m ³).
CY	= Fraction of total harvest method volume that is appraised as overhead cable yarding.
HP	= Fraction of total harvest method volume that is appraised as helicopter yarding.
HORSE	= Fraction of total harvest method volume that is appraised as horse yarding.
FIRE	= Fraction of net coniferous cruise volume that is fire damaged.
CYCLE	= Hauling round trip cycle time from the landing to the point of appraisal or water dumpsite and return (hrs.). See section 4.5.1.
HB	= Fraction of net coniferous cruise volume that is hemlock and balsam.
CEDAR	= Fraction of net coniferous cruise volume that is cedar.
SAL	= Where greater than one-third of the net coniferous cruise volume is attacked by mountain pine beetle or other pests. SAL = 1, otherwise 0.

VPT	= Cutting permit average volume per tree from cruise (m^3).
DECID	= Net deciduous cruise volume (m^3) / (net deciduous cruise volume (m^3) + net coniferous cruise volume (m^3)).
SLOPE	= Cutting permit average slope from cruise (%).
DANB	= Average number of bidders by district from the auction dataset (see Table 7-2).
DECAY	= Prorated species decay (%) from cruise/100.
Z9	= Fort Nelson - Peace selling price zone variable. Z9 = 1 if cutting authority is appraised with selling price zone 9, otherwise Z9 = 0.
AUC2006	= 2006 Auctions variable. AUC2006 = 1.
DECK	= Fraction of the timber sale total net coniferous cruise volume that has been felled and decked.
DECK_VOL	= The volume of decked timber in the Timber Sale (m^3).
ER	= Exchange Rate (\$US/\$C). Bank of Canada three-month average rate beginning five months prior to the stumpage rate effective date, as published by Revenue Branch.
CPI	= Monthly B.C. Consumer Price Index (CANSIM 326-0020, 2002 = 100) $\times 1.1787$.
CPIF	= CPI/109.3.

Table 7-2 District Average Number of Bidders (DANB)

Forest District	DANB	Forest District	DANB
100 Mile House	5.1	Kootenay Lake	4.0
Arrow Boundary	3.7	Mackenzie	2.3
Cascades	5.2	Nadina	4.9
Central Cariboo	4.6	Okanagan Shuswap	4.8
Chilcotin	2.0	Peace	3.6
Columbia	3.7	Prince George	3.5
Fort Nelson	2.8	Quesnel	5.0
Fort St. James	2.6	Rocky Mountain	4.4
Headwaters	5.6	Skeena Stikine	2.8
Kalum	3.0	Vanderhoof	2.9
Kamloops	5.9		

7.4.2 Market Price Equation

Using the variables defined in section 7.4.1, the selling price calculated in section 7.3.2 and the equation below, calculate the market price (MP).

$$\text{MP} = [41.22 + 0.214 * \text{RSP} + 5.92 * (\text{VPH}/1000) - 2.91 * \text{PC} + 7.98 * \text{FIR} + 2.67 * \ln((\text{VOL} - \text{DECK_VOL})/1000) - 9.51 * \text{CY} - 40.90 * \text{HP} - 10.11 * \text{HORSE} - 17.78 * \text{FIRE} - 2.11 * \text{CYCLE} - 15.83 * \text{HB} + 28.35 * \text{CEDAR} - 3.41 * \text{SAL} - 1.41 * (1/\text{VPT} * (1 - \text{HB})) - 12.83 * \text{DECID} - 0.0241 * \text{SLOPE} + 0.768 * \text{DANB} - 36.21 * \text{DECAY} - 3.31 * \text{Z9} - 4.07 * \text{AUC2006} + 6.05 * \ln(\text{VPT}) + 159.64 * \text{DECK} - 17.48 * \text{ER}] * \text{CPIF}$$

If MP less than \$0.25 then MP = \$0.25

7.4.3 Specified Operations

The following only are identified as specified operations. Cost estimates from the current *Interior Appraisal Manual* are used for 1, 2 and 3 below.

1. Rail Haul

Rail haul including truck to rail transfer and rail transport.

2. Barge/Ferry

Barge/ferry used for truck haul (private).

Barge/ferry not used for truck haul (private).

3. Dump, Boom, Tow, Dewater, Reload

Dump, boom

Tow

Dewater and reload.

4. Camp Costs

Cost estimate is \$2.43/m³.

5. Skyline Yarding

Cost estimate is \$8.07/m³ for the volume appraised as skyline.

6. High Development Cost

Where the development cost (DC) borne by the Licensee is greater than \$4.02 the high development cost specified operations (HDC) estimate is calculated as follows:

$$\text{HDC } \$/\text{m}^3 = \text{DC} - 1.42$$

If DC <= 4.02 HDC = 0

7.5 MPS Stumpage Rate

7.5.1 MPS Upset Stumpage Rate

1. Except as provided in subsections (2), (3), (4), (5), (6) and (8), the MPS upset stumpage rates for timber sale licences advertised on or after December 2, 2005, shall be equal to the upset stumpage rate determined under section 7.5.2 by the person who determines the stumpage rate.
2. Where applications for a timber sale licence with an MPS upset stumpage rate determined under section 7.5.1(1) have been invited but no applications have been received, the MPS upset stumpage rate shall be equal to the variable cost per cubic metre of preparing the timber for sale when that is requested by the Timber Sales Manager.
3. Where the director of BC Timber Sales does not anticipate that applications for a timber sale licence with an MPS upset stumpage rate determined under section 7.5.1(1) will be received because of market conditions, the MPS upset stumpage rate shall be equal to the variable cost per cubic metre of preparing the timber for sale when that is requested by the Timber Sales Manager.
4. The MPS upset stumpage rate for timber that has been decked for over three years and is administered by the Timber Sales Manager, shall be the prescribed minimum stumpage rate when that is requested by the Timber Sales Manager.
5. The MPS upset stumpage rate for timber sale licences with a minimum deciduous content of seventy percent of the net cruise volume, will be the greater of:
 - a. The variable cost per cubic metre of preparing the timber for sale, or
 - b.
$$\$/m^3 = \frac{0.70 [(NCV \text{ deciduous } (m^3) \times 0.50 (\$/m^3)) + (NCV \text{ coniferous } (m^3) \times 18.77 (\$/m^3))]}{TNCV (m^3)}$$

where: NCV = net cruise volume (cubic metres)

TNCV = Net cruise volume deciduous + net cruise volume coniferous

6. The variable cost per cubic metre of preparing the timber for sale shall be calculated by the Timber Sales Manager.
7. Not notwithstanding anything else in this section the MPS upset stumpage rate must not be lower than the prescribed minimum stumpage rate.

7.5.2 Upset Stumpage Rate Calculation

The upset stumpage rate (USR) is calculated as follows:

$$\text{USR} = (\text{MP} - \text{SO}) \times (1-\text{DF})$$

Where:

USR = Upset stumpage rate

MP = Market Price as defined in section 7.4.2

SO = Specified operations as defined in section 7.4.3.

DF = 0.00 if the cutting authority being appraised was entered into under section 47.6(3) of the *Forest Act*, otherwise DF = 0.30

7.5.3 Prescribed Minimum Stumpage Rate

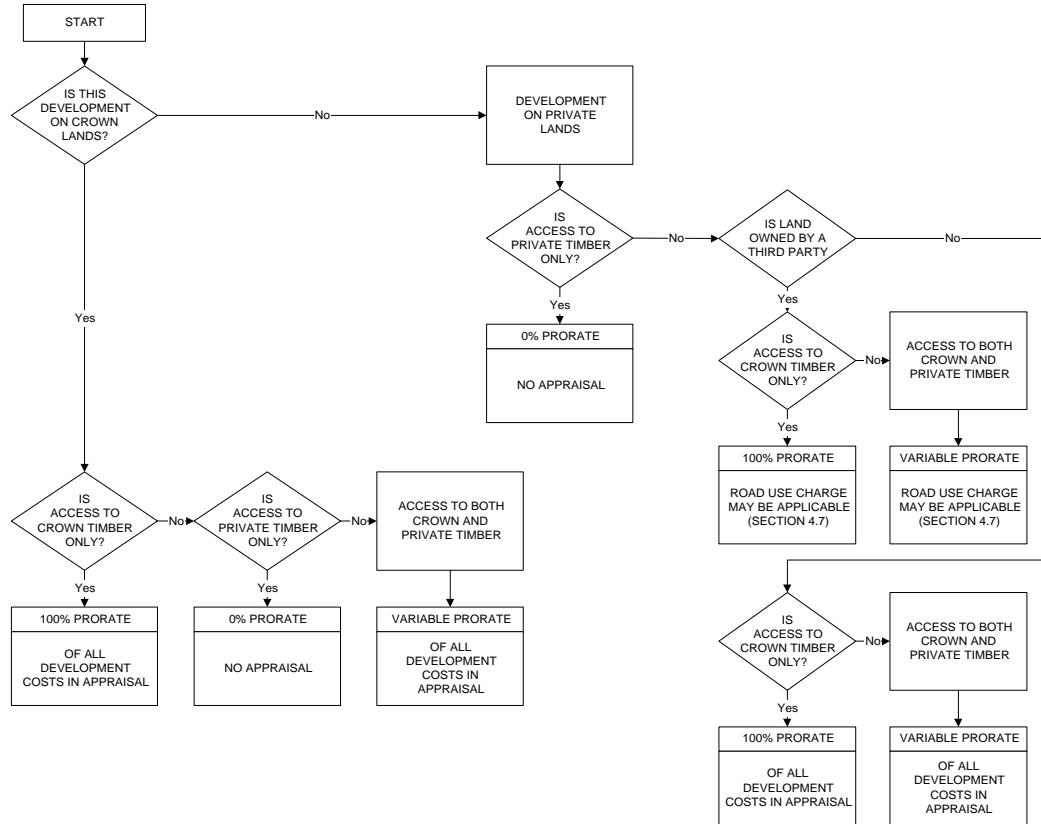
The minimum stumpage rate is prescribed by the minimum stumpage rate regulation (BC Regulation 354/87). The current minimum stumpage rate is \$0.25 per cubic metre.

7.5.4 Total MPS Stumpage Rate

1. The total MPS stumpage rate is the sum of the MPS upset stumpage rate and the bonus bid.
2. Where the MPS upset stumpage rate is determined under subsections (1), (2), (3), and (4) of section 7.5.1, or section 7.5.2, the total MPS stumpage rate applies to Grade Code 1 and 2 coniferous sawlogs.
3. Where the MPS upset stumpage rate is determined under section 7.5.1(5), the total MPS stumpage rate applies to Grade Code 1 and 2 coniferous and deciduous sawlogs.

1. Except as provided in (6), the rates shown in Appendix I will be used for all detailed engineering cost estimates made under section 4.3.3 of this manual.
2. The machine rate includes labour for the operator (all found). There are no additions.
3. Notwithstanding (4) and (5), crew transportation, supervision and camp / cookhouse costs where applicable are included in this manual and no additions are permitted.
4. Licensees that incur camp costs (as defined in section 4.8.2(2)) and recovers the said camp costs from a contractor and credits an account, in the books of the licensee, are permitted \$50.00 per person day for staying at the camp.
5. Licensees that incur costs for crew transportation and/or accommodation as part of Detailed Engineering Cost Estimates, which are not included in the standard phase costs of this manual are permitted \$50.00 per person day.
6. Use of equipment rates not listed in this appendix must be approved by the Regional Timber Pricing Co-ordinator.

Appendix II Development Cost Allocation



Crown Timber = Appraised timber including appraised Timber Licences

Private Timber = Non-appraised timber

Variable Prorate = A tributary-volume type prorate between appraised and non-appraised timber

Appendix VI April 1, 2006 Stumpage Rate Adjustments

1. a. The stumpage rates for a cutting authority will be adjusted on April 1, 2006 in accordance with this subsection if that cutting authority:
 - i. has an effective date prior to April 1, 2006,
 - ii. expires on or after April 1, 2006, and
 - iii. has an adjustable stumpage rate.
- b. The total stumpage rate for a cutting authority with an adjustable stumpage rate calculated under the Comparative Value Pricing System (CVP), will be redetermined by recalculating the information used in the most recent appraisal or reappraisal of the cutting authority area prior to April 1, 2006 except that:
 - i. the adjusted species manufacturing cost will be determined in accordance with section 4.10.1,
 - ii. the adjusted species manufacturing cost will also be calculated for and be applicable to Lodgepole pine, and
 - iii. the species manufacturing cost used in the recalculation will be the species manufacturing cost that was used in the most recent appraisal or reappraisal.
- c. i. The total stumpage rate for a cutting authority with an adjustable stumpage rate calculated using the Market Pricing System (MPS) will be redetermined by reappraising the cutting authority effective April 1, 2006, except that the MPS upset stumpage rate used in the reappraisal will be the MPS upset stumpage rate that is calculated in the reappraisal adjusted by the amount in Table A6-2 that applies to that cutting authority.
 - ii. where a cutting authority described in subsection 1(c)(i) of this section is not listed in Table A6-2, the stumpage rate for that cutting authority will be redetermined using the procedure outlined in subsection 1(c)(i) of this section except that the MPS upset stumpage rate used in the reappraisal will be the MPS upset stumpage rate that is calculated in the reappraisal adjusted by an amount that is calculated by Revenue Branch.
2. a. The stumpage rate for a cutting authority will be adjusted on April 1, 2006 in accordance with this subsection if that cutting authority:
 - i. has an effective date prior to April 1, 2006,
 - ii. expires on or after April 1, 2006, and

- iii. has a fixed or non-adjusting stumpage rate.
- b. Where a timber sale licence was advertised for sale prior to December 2, 2005 and expires on or after April 1, 2006, and where the licensee applies in writing to the Timber Sales Manager for the adjustment, the MPS upset stumpage rate may be adjusted in accordance with the following algorithm:

$$MPS\ Upset\ ADJ = MPS\ Upset\ OLD - \left(Total\ Rate\ OLD \left[1 - \frac{grade\ code\ blank\ (m^3)}{grade\ code\ blank\ (m^3) + grade\ 3\ (m^3)} \right] \right)^*$$

$$Total\ Rate\ NEW = Upset\ Rate\ NEW + Bonus\ Bid$$

Where:

Total Stumpage Rate _{NEW}	is the new total stumpage rate effective April 1, 2006 and applicable to sawlog of grade code 1 and 2.
MPS Upset _{NEW}	is the greater of the MPS Upset _{ADJ} or the prescribed minimum stumpage rate.
Bonus Bid	is the bonus bid for the TSL prior to April 1, 2006.
MPS Upset _{ADJ}	is the adjusted MPS upset stumpage rate.
MPS Upset _{OLD}	is the MPS Upset Stumpage rate for the TSL prior to April 1, 2006.
Total Stumpage Rate	is the total stumpage rate for the TSL prior to April 1, 2006.

* Using the best information available as determined by the Timber Sales Manager.

- c. Where the stumpage rates for a cutting authority were previously determined using the procedures in chapter 6 or sections 2.3.2.3 or 7.5.1(6) of this manual, or changed to a non-adjusting stumpage rate under section 2.3(5), the reserve stumpage rates for that cutting authority will be adjusted on April 1, 2006 in accordance with the following algorithm:

$$\text{Adjusted Reserve Stumpage Rate} = \text{Old Reserve Stumpage Rate} - (1 - \text{POA GLF}) \times \text{Old Total Stumpage Rate}$$

Where:

Old Reserve Stumpage Rate	is the reserve stumpage rate for the cutting authority area.
POA GLF	is the green log fraction from Table A6-1 for the point of appraisal for the cutting authority area.
Old Total Stumpage Rate	is the total stumpage rate for the cutting authority area.

- 3. Notwithstanding anything contained in this appendix, a stumpage rate that is determined under this appendix must not be lower than the prescribed minimum stumpage rate.

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