Ministry of Forests and Natural Resource Operations

Minister's Office

MEMORANDUM

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AUG 16 2013

To: Sharon Hadway, Regional Executive Director, West Coast Region

Heather MacKnight, Regional Executive Director, South Coast Region

From: The Honourable Steve Thomson, Minister of Forests, Lands and Natural Resource

Operations

Re: Amendment No. 5 to the Coast Appraisal Manual

I hereby approve Amendment No. 5 to the *Coast Appraisal Manual* and attach a copy for your use. The following section has been amended:

Section 1.1 Definition added for problem forest stands.

Section 2.2.2(2) Policy added for cut blocks in problem forest stands.

Section 2.2.3 Coast problem forest stands pilot project

Section 4.2 Housekeeping.

Section 4.2.2.1(1) and (6) Housekeeping.

Section 4.2.2.2(2) Housekeeping.

(5) and (7)

Section 5.3.2 Housekeeping.

Appendix VI Housekeeping corrections for several appraisal log dumps.

This amendment will come into force on today's date. Further amendments or revisions to this manual require my approval.

Steve Thomson

Minister

Attachment

pc: Murray Stech, Director, Timber Pricing Branch



MANUAL REVISION TRANSMITTAL

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

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MANUAL TITLE

Coast Appraisal Manual

AMENDMENT ISSUE DATE
Amendment No. 5 August 16, 2013

MANUAL CO-ORDINATOR

Ashley Sasaki Publication/Administrative Co-ordinator

AUTHORIZATION Murray Stech

Director, Timber Pricing Branch

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

	(VOL.) CHAPTER-SECTION-SUBJECT		
ACTION (Remove/Insert)	TABLE OF CONTENTS	PAGE(S)	COMMENTS
Remove Insert	Table of Contents	i-ii	After Table of Contents Tab
Remove Insert	Chapter 1	3-6	After Chapter 1 Tab
Remove Insert	Chapter 2	3-6	After Chapter 2 Tab
Remove Insert	Chapter 4	3-26	After Chapter 4 Tab
Remove Insert	Chapter 5	9-10	After Chapter 5 Tab
Remove Insert	Appendix	11-12 17-18 21-22	After Appendix Tab
INSERT	Letter from Minister and Transmittal Sheet		After Amendments Tab

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"Cutting authority" means:

- (a) a cutting permit issued under a forest licence, a timber sale licence, a timber licence, tree farm licence, a community forest agreement, a community salvage licence, a woodlot licence, a master licence to cut, a forestry licence to cut, or First Nations woodland licence;
- (b) a timber sale licence that does not provide for the issuance of a cutting permit,
- (c) all other licences to cut, or
- (d) a road permit;
- "Cutting authority area" means the area where timber may be harvested under authority of;
 - (a) a cutting permit,
 - (b) a timber sale licence that does not provide for the issuance of a cutting permit,
 - (c) a licence to cut, or
 - (d) a road permit;
- "Deciduous timber" means timber that is any of the alder, birch, cottonwood and maple species;
- "Detailed engineering" means non-tabular;
- "Director" means director of Timber Pricing Branch of the Ministry of Forests, Lands and Natural Resource Operations;

"District manager" means:

- (a) Except as provided in paragraph (b) of this definition, the district manager or district manager's designate.
- (b) Where the cutting authority area being appraised or reappraised is located in a controlled recreation area designated under the *Resort Timber Administration Act*, then district manager means an employee of the Ministry to whom the minister has delegated the minister's powers and duties under section 2 of the *Resort Timber Administration Act*.
- "Effective Date" means, unless otherwise specified in the manual,
 - i. the date the stumpage rate is determined when required for advertising for competitive award, or
 - ii. the effective date of the cutting authority when the stumpage rate is determined for a cutting permit or a direct award licence;

- "Executive Director, BCTS" means Executive Director, BCTS or Executive Director, BCTS' designate;
- **"Forest Professional"** means a Registered Professional Forester (RPF) or a Registered Forest Technologist (RFT) or a special permit holder acting within the scope of their permit, registered and in good standing with the Association of British Columbia Forest Professionals;
- "Harvest Area" means the area indicated for harvest on an appraisal map submitted by the licensee;
- **"Helicopter Selection"** means the harvesting of single trees within standing residual timber that have been felled and then removed using a helicopter;
- "Hogged Tree Material" means tree residues or by-products that have been shredded into smaller fragments by mechanical action and is made from post-harvest material where a waste assessment has been made. Where the post-harvest material is removed from an area that is or was a cruise based billing cutting authority, a waste assessment is not required;
- **"Immature coniferous timber"** means coniferous timber that is younger than 121 years old:
- "Licensee" means the holder of a cutting authority;
- "Low grade" means grades 'X' and 'Y' of all species and 'U' grade hemlock and balsam;
- "Main Access Road" means a long-term (i.e., in use for more than ten years) mainline road that is tributary to the appraised cutting authority area, or is used to transport bulk fuels, supplies, equipment or harvesting crews necessary to carry out day-to-day harvesting activities on that area, and has an average stabilized subgrade width greater than seven metres;
- "Manual" means Coast Appraisal Manual;
- "Mature coniferous timber" means coniferous timber that is 121 years old or older;
- "Minister" means Minister of Forests, Lands and Natural Resource Operations;
- "Ministry" means Ministry of Forests, Lands and Natural Resource Operations;
- "**Net cruise volume**" means the gross volume of all species listed in section 4.2.3(1), plus alder, birch, cottonwood and maple in the cutting authority area minus the volume of decay, waste and breakage in that timber unless otherwise specified in the *Cruising Manual*;
- "Old growth coniferous timber" means coniferous timber that is 141 years old or greater;

- **"Problem forest stands"** means a cut block approved by the district manager for inclusion in the coast problem forest stand pilot project under section 2.2.3;
- "Regional manager" means regional executive director of the Ministry or except for section 2.1.1(1)(a), regional executive director's designate;
- "**Regulations**" means regulations under the *Act*;
- "Remaining volume" means the total net cruise volume of a cutting authority area minus the total volume of timber in the billing history record of the cutting authority area on the effective date of the reappraisal of the cutting authority area;
- "Road Permit" means road permit or the timber mark for a road permit that is associated with the applicable tenure listed in Section 115(1) of the *Act*;
- **"Scale Based"** means a cutting authority where under Part 6 of the *Act*, the stumpage payable is based on a scale of the timber harvested from the cutting authority area;
- "Second growth coniferous timber" means coniferous timber that is less than 141 years old;
- "Selling price zone 51" means the table of coast market pricing system log values for old growth coniferous timber, approved by the director, Timber Pricing Branch;
- "Selling price zone 52" means the table of coast market pricing system log values for second growth coniferous timber, approved by the director, Timber Pricing Branch;
- "Skyline" means any method of yarding where the logs are fully suspended above the ground by a short span, long span, or multi-span system using a carriage with standing or running lines;
- "Timber Pricing Branch" means Timber Pricing Branch of the Ministry of Forests, Lands and Natural Resource Operations;
- "Timber Sales Manager" means the timber sales manager or the timber sales manager's designate;
- "Total net cruise volume" of a cutting authority area (tncv) is the product of the net cruise volume per hectare of the cutting authority area (ncv/ha) multiplied by the total merchantable timbered area to be harvested under the cutting authority (tmta). Expressed as an equation: $tncv = \frac{ncv}{ha} \times tmta$;
- "Tributary cutting authority area" means a cutting authority area from which timber must be transported over the road that is developed, or a cutting authority area to which bulk fuels, supplies, equipment and harvesting crews necessary to carry out the day-to-day harvesting activities on that area must be taken on a regular basis over the road that is developed;

"Unit cost" means cost estimate expressed in dollars per cubic metre;

"Woodchips" means timber that has been cut into small pieces by a chipper and is made from post-harvest material where a waste assessment has been made. Where the post-harvest material is removed from an area that is or was a cruise based billing cutting authority, a waste assessment is not required.

2.2 Numbering System

The following exemplifies the numbering system that is used in this manual.

1. = Chapter
1.1 or 1.1.1.1 = Section
1.1.1.1 (2) = Section with subsection
1.1.1 (2)(a) = Section with subsection and paragraph.
Table 4-2 = Table 2 within chapter 4

2.2.1 Calculation Conventions

- 1. Every calculation required to be performed will be performed to the full capacity of a calculating machine with the results truncated at four places of decimals and rounded to two places.
- 2. A result from 5 to 9 will be rounded upward and a result from 1 to 4 will be rounded downward.
- 3. Each calculation of a tenure obligation adjustment or specified operation adjustment expressed in dollars per cubic metre will be rounded to the nearest cent.
- 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.

2.2.2 Cutblocks within a Cutting Authority Area

- 1. Except as provided for in subsection 2, all cutblocks within a cutting authority area must:
 - a. constitute a logical unit,
 - b. be tributary to the same appraised point of origin, and
 - c. be contained within the same timber supply block, or in the case of a cutting authority area under a tree farm licence, be contained within the same forest district.
- 2. A cutblock approved by the district manager under section 2.2.3:
 - a. is not constrained by 1 above,
 - b. must be located anywhere within the same timber supply area, or in the case of a tree farm licence or first nations woodland licence, be contained within the same

forest district, where the licensee is entitled to harvest under the licence that the cutting authority has been issued under, and

- c. is not eligible for an extended road amortization agreement.
- 3. Helicopter single standing stem selection as described in section 4.4.4 must not be combined with any other harvest method within the same cutting authority area.
- 4. Except as provided in subsection (3) of this section, there are no other restrictions on what types of harvest methods may be used in or which types of timber can be contained in a cutting authority area.

2.2.3 Coast Problem Forest Stands Pilot

- 1. A problem forest stand is a cutblock comprised completely of one or more of the following stand characteristics:
 - a. Poor timber types (old growth timber height class 3 or less), or
 - b. located at elevations greater than 700 metres, or
 - c. greater than 80% old growth hemlock/balsam.
- 2. A cutting authority considered for this pilot must be under a tree farm licence, a First Nations woodland licence or a replaceable forest licence and have one or more cutblocks meeting the criteria of subsection 1.
- 3. Licensees participating in this pilot must submit appraisal information allowing for the determination of the value differential in accordance with the requirements prescribed by the director.
- 4. Licensees must not exceed their value allocations for this pilot.
- 5. Cutting authority applications under this pilot will not be accepted after March 31, 2015.
- 6. The minister may terminate this pilot at anytime.

2.3 Appraisal Data Submission Requirements

2.3.1 Cruise Information

- 1. Unless otherwise specified by the director, cruise data must be gathered and compiled in accordance with the following Ministry publications and the coast timber merchantability specifications in Table 2-1:
 - a. *Cruising Manual*, at the following website: http://www.for.gov.bc.ca/hva/manuals/cruising.htm,
 - b. Cruise Compilation Manual at the following website: http://www.for.gov.bc.ca/hva/manuals/cruisecompilation.htm

Table 2-1 Coast Timber Merchantability Specifications

Description				
The following coast timber merchantability specifications must be used in all appraisals.				
	Mature	Immature		
Maximum stump height (measured from the top of the stump down to the highest ground level adjacent to the stump)	30.0 cm	30.0 cm		
Minimum slab thickness for cedar only	15.0 cm	10.0 cm		
Minimum top diameter (inside of the bark)	15.0 cm	10.0 cm		
4. Minimum length of a log or slab	3.0 m	3.0 m		

- 2. When cruise information is submitted to the district manager or the regional manager in order to determine a stumpage rate or an upset stumpage rate, that information must include:
 - a. The cruise compilation reports, and
 - b. The ASCII data files (i.e. .dat and .red or .pr).
- 3. When requested by the district manager, a copy of the original field data and traverse notes must be provided by the licensee.
- 4. a. The cutting authority area will be appraised using the total net cruise volume of timber authorized for harvest in that area.
 - b. The total area of merchantable timber in the cutting authority area is obtained from the appraisal summary of the cruise compilation report.
- 5. If the licensee or BCTS modifies its application for a cutting authority the applicant must recompile the cruise data when any of the compiled plots used in the cruise lie outside the boundaries of the proposed cutting authority area.

- 6. a. Where a boundary of a cutting authority area has been changed after the appraisal or reappraisal of the cutting authority area, every reappraisal of the cutting authority area must use the total net cruise volume of the cutting authority area as it is after the boundary has changed.
 - b. If, after a cruise compilation or recompilation was used for an appraisal or reappraisal, the total of all additions or deletions of areas containing merchantable timber made to the cutting authority area exceeds fifteen hectares or fifteen percent of the area containing merchantable timber, whichever is less, the entire cruise must be recompiled.

2.3.2 Appraisal Data Forms

- 1. Unless otherwise specified in paragraph (b) or (c) of this section, the form of appraisal data submission required by the director for:
 - a. The market pricing system is the Electronic Commerce Appraisal System (ECAS) which can be found at:

http://www.for.gov.bc.ca/hva/ECAS/index.htm

b. Miscellaneous timber pricing policies is the miscellaneous appraisal data submission (Misc ADS) which can be found at:

http://www.for.gov.bc.ca/rco/revenue

c. Community forest agreements and woodlot licences is the Tabular Rate Form for Community Forest and Woodlot (Tab Rate Form), which can be found at:

http://www.for.gov.bc.ca/rco/revenue/

A submission under subsection c) is not required to be made by a forest professional.

2.3.3 Appraisal Map

The appraisal map must be completed in accordance with the requirements of Appendix V of this manual, and must be submitted with the appraisal data submission in ECAS.

4.2 Market Pricing System (MPS) Variables

STUMPAGE PRICE The stumpage price for the cutting authority expressed in \$/m³.

ALP Average coniferous log selling price estimate expressed in \$/m³.

This is based upon a consideration of log grades and species for the cutting authority area, and schedules of log market values

collected and published by the Revenue Branch.

DFIR2G If selling price zone in the appraisal data submission is 52, then

DFIR 2G is the fraction of the coniferous cruise volume that is Douglas-fir. If the selling price zone is not 52, then DFIR 2G = 0.

DFIR2G is in decimal form, rounded to 2 decimal places.

CEDARCYPRESS The fraction of the coniferous cruise volume that is cedar and

cypress. CEDARCYPRESS is in decimal form, rounded to 2

decimal places.

SLOPE The average side slope percentage for that part of the cutting

authority area that will not be helicopter yarded.

NHSVPH Non-helicopter selection volume per hectare is the cruise volume

of coniferous timber per hectare for that part of the cutting authority area that will not be harvested by a helicopter selection method or helicopter single standing stem selection. NHSVPH is expressed

in m³/ha and is rounded to 2 decimal places.

HS The fraction of the total net cruise volume, including deciduous

volume, of timber in a cutting authority area that will be harvested by a helicopter selection method (excluding helicopter single standing stem selection). HS is in decimal form, rounded to 2

decimal places.

HSSS The fraction of the total net cruise volume, including deciduous

volume, of timber in a cutting authority area that will be harvested by helicopter single standing stem selection (section 4.4.4). HSSSS is in decimal form, rounded to 2 decimal places.

VPH [1 – (HS + HSSSS)] ⋅ NHSVPH + (HS + HSSSS) ⋅ 308

VPH is expressed in m³/ha and is rounded to 2 decimal places.

PIECESIZE The cruise coniferous net volume per 10 m log. PIECESIZE is

expressed in m³ and is rounded to 2 decimal places.

HELI The fraction of the total net cruise volume, including deciduous

volume, of timber in a cutting authority area that must be helicopter yarded or yarded by skyline where logs are fully suspended more than 600 m in a straight line to the centre of the closest possible landing. This is calculated by dividing the total volume of timber that must be helicopter yarded or skyline yarded over 600 m by the total net cruise volume of the cutting authority area. HELI is in

decimal form, rounded to 2 decimal places.

VOL That part of the total net cruise volume in the cutting authority area

that is coniferous timber except that where the cutting authority is a

timber licence or is issued under a licence with an AAC greater than $10\ 000\ m^3$, then VOL = 27 300. VOL is expressed in m^3 ,

rounded to the nearest whole number.

CPI Monthly BC Consumer Price Index (CANSIM 326-0020,

2002 = 100) multiplied by 1.1787.

CPIF CPI divided by 109.3.

ISOLATED An isolated cutting authority area is one where all parts of the

cutting authority area are not connected, or the service landings used to support the yarding of timber from a cutting authority area by helicopter are not connected, by a road suitable for motor vehicles to the centre of the nearest community. The nearest community must be a city, district municipality, town or village and must have retail food and gasoline services located nearby. This includes all communities serviced by public ferry. ISOLATED = 1 if

cutting authority area is isolated, otherwise ISOLATED = 0.

LOCATION The net cruise volume weighted average straight line distance

based on a BC Albers projection measured in kilometres between the geographic centre of each part of a cutting authority area and the BC Albers Coordinate listed in table 4-1 (which lists the major centres) that is closest to that part of the cutting authority area.

2G If selling price zone in the appraisal data submission is 52, then

2G = 1, otherwise 2G = 0.

CRUISE If cruise is used as source of log grades for the appraisal for

greater than 50 percent of the total net cruise volume, then

CRUISE = 1, otherwise CRUISE = 0

Table 4-1: BC Albers Coordinates

BC Albers			
Northing Easting		At or Near	Code
555,923	1,053,751	Campbell River	CARV
471,591	1,297,829	Chilliwack	CHWK
1,042,589	957,885	Houston	HOUS
580,589	1,373,908	Merritt	MERR
463,314	1,149,638	Nanaimo	NANA
1,041,636	719,914	Prince Rupert	PRRU
1,060,362	832,121	Terrace	TERR
476,584	1,211,198	Vancouver	VANC
381,554	1,196,533	Victoria	VICT

GAMBDIST	POA distance is the average straight line distance based on a BC Albers projection, weighted by net cruise volume, between the geographic centre of each cutblock in the cutting authority area and Gambier Island. GAMBDIST is measured and rounded to the nearest kilometre.
	The Gambier Island BC Albers coordinate is northing 499,955 and easting 1,185,166.
GAMBDIST400	Where GAMBDIST is equal to 400 or greater and district is not Haida Gwaii, GAMBDIST400 = 1, otherwise GAMBDIST400 = 0
DISTAVGNBID	The average number of bidders for the forest district within which the cutting authority area is located is listed in Table 4-2.

Table 4-2 Average Number of Bidders by Forest District

Forest District	Average Number of Bidders
Haida Gwaii Forest District	2.83
Chilliwack Forest District	3.07
Squamish Forest District	2.96
Sunshine Coast Forest District	3.00
South Island Forest District	5.09
Campbell River Forest District	5.53
North Island- Central Coast Forest District	4.52
North Coast Forest District	1.00

4.2.1 Log Selling Prices

- 1. The Timber Pricing Branch shall:
 - a. Compile invoiced free on board log market values using prime, domestic, arm's-length sales reported to the Timber Pricing Branch prior to sixty days before the stumpage rate adjustment date that have occurred in areas adjacent to:
 - i. the Strait of Georgia;
 - ii. the Strait of Juan de Fuca;
 - iii. Alberni Inlet east of a line drawn south from Amphitrite Point;
 - iv. Quatsino Sound;
 - v. Johnstone Strait;

- vi. the Queen Charlotte Strait south of a line drawn west from Cape Caution; and
- vii. Fraser River west of the bridge at the confluence of the Pitt River.
- b. Subject to subsection 2 of this section compile schedules of average log market values by species and log grade using sales data for each one-month reporting period. The data shall be summarized into a three-month schedule of average log market values by species and log grade for old growth timber stumpage rate determinations. A three-month schedule of average log market values by species and log grade for second growth stumpage determinations shall also be produced. These schedules can be found at:

http://www.for.gov.bc.ca/hva/parameters.htm

- 2. The volumes and prices of alder, birch, cottonwood and maple shall not be included in the schedules of average log market values.
- 3. The director shall approve schedules of average log market values for use in stumpage appraisals, reappraisals and quarterly adjustments.

4.2.1.1 Coniferous Timber

- 1. The volume of old growth coniferous timber and the volume of second growth coniferous timber in a cutting authority area will each be compiled from the timber cruise of the cutting authority area on a tree by tree basis.
- 2. Where the volume of second growth coniferous timber in a cutting authority area is at least eighty percent of the volume of all of the coniferous timber in that cutting authority area, the cutting authority area will be appraised and reappraised as if all of the coniferous timber in that cutting authority area were second growth coniferous timber.

4.2.2 Log Grade Percentages

Log grade percentages are obtained for each species of timber in each cutting authority area being appraised or reappraised as described in section 4.2.2.1, 4.2.2.2, 4.2.2.3, 4.2.2.3.1, 4.2.2.3.2 and 4.2.2.4.

4.2.2.1 Billing History Record

- 1. Except as provided in sections 4.2.2.2 (5) and (6), and 4.2.2.4, the billing history record that will be used in an appraisal or reappraisal of a cutting authority area will be determined using either Table 4-3 or Table 4-4 as may be required by this manual.
- 2. The date of issue of a stumpage invoice shall determine the period for which the log scale data in that invoice will be included in a billing history record.
- 3. Except as provided in sections 4.2.2.3.1(8) and 4.2.2.3.2(8), the billing history record shall be for a period of two years.

Table 4-3: Billing History Record Dates

Column 1 Date of Appraisal or Reappraisal	Column 2 Billing History Record Ends on the Preceding
January 1 to March 31	November 30
April 1 to June 30	February 28/29
July 1 to September 30	May 31
October 1 to December 31	August 31

- 4. Except as provided in subsection (6) of this section, where the effective date of the appraisal or reappraisal falls within the period of the year listed in Column 1 of Table 4-3, the two-year billing history record shall be for the two-year period ending on the corresponding date in Column 2 of Table 4-3 which immediately precedes the effective date of the appraisal or reappraisal.
- 5. Where the log grade percentages must be determined in accordance with section 4.2.2.3.1(8) or 4.2.2.3.2(8) and the effective date of an appraisal or reappraisal falls within the period of the year listed in Column 1 of Table 4-3, the five-year billing history record shall be for the five-year period ending on the corresponding date in Column 2 of Table 4-3 which immediately precedes the effective date of the appraisal or reappraisal.
- 6. Where the log grade percentages must be determined in accordance with section 4.2.2.2(8)(e) and where the effective date of the appraisal or reappraisal falls within the period of the year listed in Column 1 of Table 4-4, the two-year billing history record shall be for the two-year period ending on the corresponding date in Column 2 of Table 4-4 which immediately precedes the effective date of the appraisal or reappraisal.

Table 4-4: Billing History Record Dates

Column 1 Date of Appraisal or Reappraisal	Column 2 Billing History Record Ends on the Preceding
January 1 to 31	November 30
February 1 to 28/29	December 31
March 1 to 31	January 31
April 1 to 30	February 28/29
May 1 to 31	March 31
June 1 to 30	April 30
July 1 to 31	May 31
August 1 to 31	June 30
September 1 to 30	July 31
October 1 to 31	August 31
November 1 to 30	September 30
December 1 to 31	October 31

4.2.2.2 Log Grade Percentage Criteria

The person who determines the stumpage rate will apply the following criteria when determining the log grade percentages to be used for the cutting authority area being appraised or reappraised:

- 1. The log grade percentage is the percentage by volume that a log grade is of the total net cruise volume for the species of timber being considered.
- 2. Except as provided in subsection (5) and (6) of this section and section 4.2.2.4, the log grade percentages for a species of timber are derived from the billing history record.
- 3. The source of log grade percentages may vary by species of timber.
- 4. (a) Except as provided in paragraph (b) of this subsection, before a two year billing history record for a species of timber can be used in an appraisal or reappraisal, the volume of that species of timber in that two year billing history record must be at least 25 percent of the net cruise volume of that species in

- the cutting authority area being appraised or reappraised, or 2 000 m³, whichever is greater.
- (b) Where the cutting authority area being appraised or reappraised is outside of a tree farm licence area and has been authorized for harvest under a cutting authority issued under a timber licence, then before a two-year billing history record for a species of timber can be used in an appraisal or reappraisal the volume of that species of timber in the two-year billing history record must be at least 25 percent or 2 000 m³ for each species of timber that comprises at least 20 percent of the cutting authority area's total net cruise volume.
- 5. The log grade percentages for each species of timber will be derived from the cruise compilation algorithm (loss factor) predictions when:
 - (a) at least eighty percent of the timber in a cutting authority area being appraised or reappraised is second growth coniferous timber,
 - (b) the entire net cruise volume of the cutting authority area being appraised or reappraised will be harvested using helicopter single standing stem selection, or
 - (c) the cutting authority area has been authorized for harvest under:
 - i. a cutting permit entered into with a timber sales manager,
 - ii. a licence that is entered into with a timber sales manager,
 - iii. a cutting permit issued under a replaceable timber sale licence,
 - iv. a woodlot licence that does not have its stumpage rates determined under section 7.2(1).
- 6. If a cutting authority has been approved for the coast cruise based billing pilot the cruise and log grade percentages for each species of timber will be based on the call grade net factor cruise method.
- 7. If a cutting authority is not a tree farm licence or First Nations woodland licence and has been approved for the coast problem forest stand pilot project under section 2.2.3 and is located in the geographic area of a timber supply area, the log grade percentages will be determined as described in section 4.2.2.3.2 based on the timber supply block where the majority of the cutting authority area's net cruise volume is located.
- 8. Where the cutting authority area is not a cutting authority area referred to in subsection (5)(c) of this section and the timber in the cutting authority area has been authorized for harvest under:
 - (a) a cutting authority issued under a licence awarded under section 47.3 of the *Act*,
 - (b) a forestry licence to cut with cutting permits, or
 - (c) a cutting authority issued under a woodland licence awarded under section

43.54 of the *Act*,

the log grade percentages for each species of timber will be derived from,

- (d) the two year billing history record of all cutting authority areas of the licence authorizing harvest, if the two-year billing history record for that cutting authority includes at least 25 percent of the cutting authorities' net cruise volume of that species or 2 000 m³, whichever is greater, or
- (e) where there is no such billing history record, the person determining the stumpage rate will proceed to:
 - i. section 4.2.2.3.1(6) if the cutting authority area is within the boundaries of a tree farm licence, or
 - ii. section 4.2.2.3.2(6) if the cutting authority area is within the boundaries of timber supply area.
- 9. Where a forest licence is subdivided or forest licences are consolidated into one or more forest licences under section 19 of the *Act*, then for a period of two years after the date of the subdivision or consolidation the log grade percentages for a cutting authority area being appraised or reappraised that are determined under section 4.2.2.3.2 will be the combined billing history record of the licence or licences that existed before the subdivision or consolidation and that exist after the subdivision or consolidation.
- 10. Where a tree farm licence is subdivided or tree farm licences are consolidated into one or more tree farm licences under section 39 of the *Act*, then for a period of two years after the date of the subdivision or consolidation the log grade percentages for a cutting authority area being appraised or reappraised that are determined under section 4.2.2.3.1 will be the combined billing history record of the licence or licences that existed before the subdivision or consolidation and that exist after the subdivision or consolidation.

4.2.2.3 Source of Log Grade Percentages for Each Cutting Authority Area

- 1. Except for those harvest methods, cutting authorities or cutting authority areas referred to in subsection 4.2.2.2(5), 4.2.2.2(6),4.2.2.2(7), 4.2.2.2(8), 4.2.2.2(9), and 4.2.2.2(10) the log grade percentages for each species of timber for the cutting authority area being appraised or reappraised will be determined in accordance with:
 - a. Section 4.2.2.3.1, where the cutting authority area is entirely within the geographic boundaries of one tree farm licence, or
 - b. section 4.2.2.3.2, where the cutting authority area is entirely within the geographic boundaries of one timber supply area.

4.2.2.3.1 Log Grade Percentages for a Cutting Authority Area Within the Geographic Boundaries of a Tree Farm Licence

Where the cutting authority area being appraised or reappraised is entirely within the geographic boundaries of a single tree farm licence area, the log grade percentages for the cutting authority area will be determined in the following manner:

- 1. a. Where at least eighty percent of the timber in the cutting authority area is second growth coniferous timber, the log grade percentages for that cutting authority area will be determined in accordance with the requirements of subsection 4.2.2.2(5).
 - b. Where at least eighty percent of the timber in the cutting authority area is not comprised of second growth coniferous timber, the person determining the stumpage rate will proceed to subsection 2 of this section.
- 2. a. Where the cutting authority area is the only cutting authority area in the cutting authority and is entirely within the geographic boundaries of a single timber licence, the person determining the stumpage rate will proceed to subsection 3 of this section.
 - b. Where subsection 2 (a) of this section is not applicable, the person determining the stumpage rate will proceed to subsection 4 of this section.
- 3. a. Where the species being considered has a billing history record for cutting permits issued under the timber licence under which the cutting permit that authorizes harvesting on the cutting authority area being appraised or reappraised has been issued that meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection 4 of this section.
- 4. a. Where the species being considered has a billing history record derived from cutting permits issued under the tree farm licence or licence to cut and their associated road permits authorizing harvest in that part of the tree farm licence area that lies within the geographic boundaries of the forest district that contains the cutting authority area being appraised or reappraised and that billing history record meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection (5) of this section.
- 5. a. Where the species being considered has a billing history record derived from cutting permits issued under the tree farm licence or licence to cut and their associated road permits authorizing harvest and that billing history meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the

source of the log grade percentages for that species.

- b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection (6) of this section.
- 6. a. Where the species being considered has a billing history record for cutting authority areas in that part of the tree farm licence area that lies within the geographic boundaries of the forest district that contains the cutting authority area being appraised or reappraised that meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection (7) of this section.
- 7. a. Where the species being considered has a billing history record for cutting authority areas in a tree farm licence area that contains the cutting authority area being appraised or reappraised that meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection (8) of this section.
- 8. a. Where the species being considered has a five-year billing history for cutting authority areas in a tree farm licence area that contains the cutting authority area being appraised or reappraised, and that record includes at least 100 m³ of scale for that species then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will use the log grade percentages for that species from the cruise compilation.

4.2.2.3.2 Log Grade Percentages for a Cutting Authority Area Within a Timber Supply Area

Where the cutting authority area being appraised or reappraised is entirely within the geographic boundaries of a single timber supply area, the log grade percentages for the cutting authority area will be determined in the following manner:

- 1. a. Where at least eighty percent of the timber in the cutting authority area is second growth coniferous timber, the log grade percentages for that cutting authority area will be determined in accordance with the requirements of subsection 4.2.2.2(5).
 - b. Where at least eighty percent of the timber in the cutting authority area is not second growth coniferous timber the person determining the stumpage rate will proceed to subsection 2 of this section.

- 2. a. Where the cutting authority area is entirely within the geographic boundaries of one or more timber licences, the person determining the stumpage rate will proceed to subsection 3 of this section.
 - b. Where the cutting authority area is not entirely within the geographic boundaries of one or more timber licences, the person determining the stumpage rate will then proceed to subsection 4 of this section.
- 3. a. Where the cutting authority area being appraised or reappraised is authorized for harvest under a cutting permit issued under a timber licence, and the species being considered has a billing history record for cutting permits issued under that timber licence and any other timber licence with which that licence has been amalgamated and approved by the district manager that meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection 6 of this section.
- 4. a. Where the cutting authority area in a timber supply block being appraised or reappraised is authorized for harvest under a cutting permit issued under either a forest licence or licence to cut, and the species being considered has a billing history record for cutting permits issued under the licence authorizing harvest in that same timber supply block and associated road permits, and that billing history record meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection 5 of this section.
- 5. a. Where the cutting authority area in a timber supply area being appraised or reappraised is authorized for harvest under a cutting permit issued under either a forest licence or licence to cut, and the species being considered has a billing history record for the cutting permits issued under the licence authorizing harvest in that same timber supply area and associated road permits and that billing history record meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection 6 of this section.
- 6. a. Where the cutting authority area being appraised or reappraised is authorized for harvest under a licence to cut or under a cutting permit issued under either a forest licence, timber licence or licence to cut, or First Nations woodland licence and the species being considered has a billing history record for all cutting authority areas that have been authorized for harvest in that timber supply block that meets the criteria of subsection 4.2.2.2(4), then that billing

history record will be the source of the log grade percentages for that species.

- b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection 7 of this section.
- 7. a. Where the cutting authority area being appraised or reappraised is authorized for harvest under a licence to cut or under a cutting permit issued under either a forest licence, timber licence or licence to cut, or a First Nations woodland licence and the species being considered has a billing history record for all cutting authority areas that have been authorized for harvest in that timber supply area that meets the criteria of subsection 4.2.2.2(4), then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will proceed to subsection 8 of this section.
- 8. a. Where the cutting authority area being appraised or reappraised is authorized for harvest under a licence to cut or under a cutting permit issued under either a forest licence, timber licence or a licence to cut, or a First Nations woodland licence and the species being considered has a five-year billing history for cutting authority areas in a timber supply area that contains the cutting authority area being appraised or reappraised, and that record includes at least 100 m³ of scale for that species then that billing history record will be the source of the log grade percentages for that species.
 - b. Where there is no such billing history record, the person determining the stumpage rate will use the log grade percentages for that species from the cruise compilation.

4.2.2.4 Damaged Timber

Where the regional manager determines that timber in a cutting authority area is suddenly and severely damaged, then notwithstanding section 4.2.2.1, 4.2.2.2, 4.2.2.3, 4.2.2.3.1 and 4.2.2.3.2 the log grade percentages for the cutting authority area being appraised or reappraised may be estimated from available site-specific information.

4.2.3 Stand Selling Price

1. The stand selling price shall be calculated in an appraisal or reappraisal by using the net cruise volumes and species selling prices of the following species of timber:

Balsam Lodgepole Pine
Cedar White Pine
Cypress Sitka Spruce

Fir Engelmann Spruce

Hemlock

4.2.3.1 Stand Selling Price Calculation

- 1. Subject to subsection 2 of this section:
 - a. a species grade value for a species of timber in a cutting authority area is the product of the percentage of that grade of that species as derived from section 4.2.2 multiplied by the average log market value for that grade of that species of timber,
 - b. a species selling price for a species of timber in a cutting authority area is the sum of all of the species grade values for that species of timber in the cutting authority area,
 - c. the rounded species selling price is the species selling price for a species of timber in a cutting authority area rounded to the nearest cent,
 - d. a species value is the product of the rounded species selling price multiplied by the species net cruise volume in the cutting authority area, and
 - e. the stand selling price is the quotient of the sum of all of the species values in a cutting authority area divided by the total net cruise volume of all of the species in the cutting authority area.
- 2. For the purposes of determining a stand selling price:
 - a. in the Pemberton, Yale and Nahatlatch timber supply blocks:
 - i. all spruce is deemed to be Engelmann spruce, and
 - ii. the hemlock and balsam species grade average log market values will be used to determine the species grade values for all spruce in the cutting authority area,
 - b. where outside the Pemberton, Yale and Nahatlatch timber supply blocks:
 - i. Engelmann spruce is identified as the predominant spruce species in the cruise of the cutting authority area, or
 - ii. the district manager determines that Engelmann spruce is the predominant spruce species in the cutting authority area,
 - the hemlock and balsam species grade average log market values will be used to determine the species grade values of all spruce in the cutting authority area,
 - c. where a cutting authority area is located on Cortes Island or on an Island between Vancouver Island and the British Columbia mainland west of a line drawn between Grief Point near Powell River and the Tsawwassen ferry terminal, and south of 50 degrees north latitude, the second growth Douglas-fir species grade average log market values will be used to calculate the species selling price for all Douglas-fir timber.

4.2.4 Haul Distance

- 1. Haul distance does not contribute to the calculation of a stumpage rate but must be determined and reported on the appraisal data submission.
- 2. The haul distance for a cutting authority area being appraised or reappraised shall be determined as follows:
 - a. For each cutblock in the cutting authority area from which any timber may be removed by road from that cutblock:
 - i. determine for that cutblock the point that is the closest point on a road to the geographical centre of the cutblock,
 - ii. determine the shortest distance by road from the point on the road determined in subparagraph (i) of this paragraph to the appraisal log dump for that cutblock, measured in kilometres (km) and rounded to the nearest 0.1 km,
 - iii. weight for that cutblock the distance determined in subparagraph (ii) of this paragraph by the net cruise volume of timber on the cutblock.
 - b. Determine the average weighted distance of all the cutblocks for which a weighted distance was determined in subparagraph (iii) of paragraph (a), rounded to the nearest 0.1 km.
 - c. Haul distance is the average weighted distance calculated in paragraph (b) of this subsection plus the rehaul distance in the case of inland water transportation as described in section 4.4.2.
 - d. Where a rehaul is required for inland water transportation, the appraisal log dump is the final log dump at the end of the rehaul.

4.2.5 Marine Log Transportation

4.2.5.1 Point of Appraisal

1. The Points of Appraisal are:

Points of Appraisal Location

Alberni At the head of Alberni Inlet.

Chemainus At Chemainus Bay.

Gambier Island At Gambier Harbour on Gambier Island.

Pitt River Bridge At the confluence of the Fraser and Pitt Rivers.

4.2.5.2 Appraisal Log Dump

- 1. For subsections 2, 3, 4 a) and 4 b) below, the appraisal log dump must be located in the same forest district as the cutting authority area.
- 2. Except as provided in subsection 3 of this section, where any timber may be removed from any part of a cutblock by road, the appraisal log dump for that cutblock that must be used in the appraisal or reappraisal of the cutting authority area is the closest location by road listed in Appendix VI to that cutblock.
- 3. Where any timber may be removed from any part of a cutblock by road, and a log dump exists or will exist during the removal of the timber from the cutblock at a location that is closer to the cutblock than any location listed in Appendix VI, then that log dump location is the appraisal log dump for that cutblock that must be used in the appraisal or reappraisal of the cutting authority area.
- 4. a. When no timber may be removed from any part of a cutblock by road, and except as provided in paragraph (b) of this subsection, the appraisal log dump for that cutblock that must be used in the appraisal or reappraisal of a cutting authority area is the closest location to that cutblock listed in Appendix VI to which logs may be yarded by helicopter or A-frame and placed in water.
 - b. If a location to which timber will be yarded by helicopter or A-frame from the cutblock and placed in water is closer to the cutblock than any location listed in Appendix VI, then that location must be used as the appraisal log dump for that cutblock in the appraisal or reappraisal of the cutting authority area.

4.2.5.3 Log Towing

- 1. a. The information in Table 4-5 is not used in the calculation of a stumpage rate but must be used by the licensee when completing the appraisal data submission.
 - b. Where the appraisal log dump is at a towing point of origin listed in Table 4-5, that towing point of origin must be reported in the appraisal data submission.
 - c. Where the appraisal log dump lies between two towing points of origin, both towing points of origin must be reported in the appraisal data submission.

4.2.5.4 Log Barging

- 1. a. The information in Table 4-6 is not used in the calculation of a stumpage rate but must be used by the licensee when completing the appraisal data submission.
 - b. Where the appraisal log dump is at a barging point of origin listed in Table 4-6, that barging point of origin must be reported in the appraisal data submission.
 - c. Where the appraisal log dump lies between two barging points of origin, both barging points of origin must be reported in the appraisal data submission.

Table 4-5 Towing Points of Origin

Code	Point of Origin	P/A	Code	Point of Origin	P/A
ALBE CHCK COCK SARV SPCK TOBY UCHU CHEM COBY JORV LADY NANA SOOK VICT AGAM BECV COUR DRIN EVRV FOHA FRAR BUIH KNIH LOUH SEIH KNIH LOUH SEIH KNIH KNIH KNIH KNIH KNIH KNIH KNIH KN	ALBERNI CHINA CREEK COLEMAN CREEK SARITA RIVER SPENCER CREEK TOQUART BAY UCHUCKLESIT UCLUELET CHEMAINUS COWICHAN BAY JORDAN RIVER LADYSMITH NANAIMO SOOKE VICTORIA AGAMEMNON BEAVER COVE COURTENAY DRURY INLET EVE RIVER FORWARD HARBOUR FREDERICK ARM H. OF BUTE INLET H. OF KINGCOME INLET H. OF KINGCOME INLET H. OF KNIGHT INLET H. OF SECHELT INLET H. OF TOBA INLET INDIAN ARM KELSEY BAY MCNAB CREEK MENZIES BAY	P/A A A A A A A A C C C C C C C G G G G G G	BUIM KIIM KNIM LOUM TOIM NACK NOBY PHAR PTEB PTHV PTMN PTNE PORV SENA SYIN SEBY SQUA STIL TEAR THIN THSO WASA GAMB CHWK HABY HALH PILH HALM PIRV SICK	M. OF BUTE INLET M. OF KINGCOME INLET M. OF KNIGHT INLET M. OF LOUGHBOROUGH M. OF TOBA NAKA CREEK NORTHWEST BAY PHILLIPS ARM PORT ELIZABETH PORT HARDY PORT HARVEY PORT McNEILL PORT NEVILLE POWELL RIVER SECOND NARROWS SEYMOUR INLET SOUTHEAST BAY SQUAMISH STILLWATER TEAKERNE ARM THEODOSIA INLET THOMPSON SOUND WAKEMAN SOUND GAMBIER ISLAND	P/A G G G G G G G G G G G G G G G G G G G
MESD JEIM	MEREWORTH SOUND MOUTH JERVIS INLET	G G			

P/A = Point of Appraisal as follows:

Table 4-6 Barging Points of Origin

	Point of Origin	P/A	Code	Point of Origin	P/A
BACK	BARR CREEK	Α	BOIN	BOSWELL INLET /SECURITY BAY	G
BLBY	BLOWHOLE BAY	Α	CAIS	CAMPBELL ISLAND	G
	CLEAGH CREEK	Α	DIBY	DINAN BAY	G
COHA	COAL HARBOUR	Α	ELHA	ELCHO HARBOUR	G
CYRV	CYPRE RIVER	Α	FEBY	FERGUSON BAY	G
	EASY INLET	Α	RIIH	HEAD OF RIVERS INLET	G
ESIN	ESPINOSA INLET	Α	SBEH	HEAD OF SOUTH BENTINCK ARM	G
GORV	GOLD RIVER	Α	HNRV	HONNA RIVER	G
HEBY	HEAD BAY	Α	KMBY	KEMANO BAY	G
	HEAD OF BEDWELL SOUND	Α	KHIN	KHUTZEYMATEEN INLET	G
	HECATE CHANNEL - NOOTKA	Α			
HOLB	HOLBERG	Α	KIMS	KIMSQUIT	G
HORV	HOUSTON RIVER	Α	KLEM	KLEMTU	G
HUCK	HUSHAMU	Α	KUIN	KUMEALON INLET	G
	INGERSOLL	Α	KWBY		G
	JEUNE LANDING	Α	KWRV		G
	KENDRICK INLET	Α	MCBY	McCLINTON BAY	G
	KOPRINO HARBOUR	Α	MOIN	MOSES INLET/INRIG BAY	G
	KULTUS COVE	Α	NAHA	NADEN HARBOUR	G
	McCURDY CREEK	A	NABY	NASS BAY	G
	MOOYAH RIVER	A	NORV	NOOTUM RIVER	G
	OUOUKINSH INLET	A	OCFA	OCEAN FALLS	G
	PLUMPER HARBOUR	A	POIS	PORCHER ISLAND	G
	PORT ELIZA	A	PRRU	PRINCE RUPERT	G G
	RANKIN COVE STEAMER COVE	A A	RESO REPA	RENNELL SOUND RENNERS PASSAGE	G
	TLUPANA RIVER	A	SCRV	SCOTIA RIVER	G
	TSOWWIN	A	SWIN	SEWELL INLET	G
	WINTER HARBOUR	A	SKIN	SKIDEGATE INLET	G
	ZEBALLOS	A	SOBY		G
	ALICE ARM	G	STEW		G
	ALLIFORD BAY	Ğ	TASU	TASU SOUND	Ğ
	BEATTIE ANCHORAGE		TUIN	TUCK INLET	G
	BELLA COOLA	Ğ	WECK		Ğ
	BISHOP BAY	Ğ		WORK CHANNEL	Ğ

P/A = Point of Appraisal as follows:

A = ALBE = Alberni

G = GAMB = Gambier Island

4.3 Estimated Winning Bid (EWB) Equation

1. The equation used in the calculation of the estimated winning bid (EWB) is:

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EWB = [-33.91 + 0.747(ALP/CPIF) + 11.67(CEDARCYPRESS) + 11.55(DFIR2G)

- 0.124(SLOPE(1-HELI)) - 30.93 (HELI) + 9.23(VPH/1000)

+ 2.70(Ln(PIECESIZE)) - 0.0796(LOCATION)

- 9.59(GAMBDIST400) + 0.727(Ln(VOL/1000)) + 7.57(CRUISE)

+ 2.01(DISTAVGNBID) - 1.48(ISOLATED) - 0.828(2G)] CPIF
```

- 2. The EWB shall be rounded to 2 decimal places.
- 3. Where the calculated EWB is less than \$0.25, the EWB shall be \$0.25.

4.4 Specified Operations

1. The specified operations in sections 4.4.1 to 4.4.7 may be considered in an appraisal or a reappraisal.

4.4.1 Skyline

- 1. A skyline adjustment expressed in \$/m³ may be calculated for those areas within a cutblock that:
 - a. are 600 metres or greater measured in a straight line horizontal distance from the centre of the closest possible landing or place where a landing may be located, and
 - b. are yarded by skyline.
- 2. The skyline adjustment may be calculated by adding the volume of timber to which the skyline may apply to the volume of timber to be helicopter yarded as prescribed in section 4.2.

4.4.2 Inland Water Transportation

- 1. An inland water transportation adjustment will be determined for that part of the cutting authority area where timber must be towed on Great Central, Owikeno or Powell Lake or any other inland water authorized by the person that determines the stumpage rate in order for the timber to be transported to the point of appraisal.
- 2. The adjustment shall be \$4.41 per cubic metre.

4.4.3 Clayoquot Sound Operating Costs

- 1. For the purposes of this section the Clayoquot Sound area is:
 - That part of the Hesquiat Peninsula, Esowista Peninsula, and the islands, sea and all lands and waters draining into the Pacific Ocean from the height of land between Escalante Point and Quisitis Point.
- 2. An adjustment of \$6.11/m³ will be included in an appraisal or a reappraisal of a cutting authority area that is located entirely within the Clayoquot Sound area.

4.4.4 Helicopter Single Standing Stem Selection

1. In this manual helicopter single standing stem selection means the harvesting of standing single trees that have been marked, limbed, undercut and wedged and then broken from the stump and removed using a helicopter.

- 2. This adjustment may only be included in the appraisal or reappraisal of a cutting authority area if:
 - a. helicopter single standing stem selection is the only harvest method that has been permitted by the district manager to harvest timber in the cutting authority area, and
 - b. helicopter single standing stem selection is also, the only harvest method used to harvest all of the timber in the cutting authority area.
- 3. The adjustment for helicopter single standing stem selection includes the cost of marking, climbing, limbing, undercutting, wedging, breaking and removal of the tree by helicopter.
- 4. The adjustment for helicopter single standing stem selection is \$37.78/m³.

4.4.5 Destumping for Root Disease Control

- 1. Destumping is the activity of:
 - a. lifting and rolling of stumps out of the ground to lessen soil disturbance and root breakage,
 - b. destumping may also include the shaking of stumps to remove soil, and
 - c. raking the area immediately around the hole to remove any large root pieces.
- 2. A destumping adjustment will be determined for that part of the cutting authority area where destumping for root disease control is required. The treatment area must be accurately delineated and shown on the appraisal map and be included in the site plan.
- 3. The adjustment shall be \$1,114.00 per hectare of area that will be destumped.

4.4.6 Tree Crown Modification

- 1. Where the protection of trees is deemed necessary by a forest professional to achieve forest management objectives, a tree crown modification adjustment may be considered in the appraisal or reappraisal.
- 2. The adjustment is the sum of the costs for all of the trees that are modified divided by the total net cruise volume of the cutting authority area.

Where tree crown modification is approved:

- a. the rate for each old growth coniferous tree that is modified is \$46.18, and
- b. the rate for each second growth coniferous tree that is modified is \$20.69.

4.4.7 Ecosystem Based Management Operating Costs

- 1. Except as provided in subsection (2) of this section, the ecosystem based management adjustment may be considered in the appraisal of a cutting authority area that lies wholly within that part of the Coast Forest Region when the licensee has an approved forest stewardship plan which conforms with the objectives listed under the Land Use Order to which land use objectives have been made applicable by orders made by the Minister of Natural Resource Operations pursuant to Section 93.4 of the *Land Act* entitled:
 - a. South Central Coast Order, dated July 27, 2007,
 - b. Central and North Coast Order, dated December 19, 2007, and
 - c. Haida Gwaii Land Use Objectives Order, dated December 16, 2010.
- 2. The ecosystem based management adjustment shall not be considered in the appraisal or reappraisal of a cutting authority area that is authorized for harvest under:
 - a. a woodlot licence referred to in section 1(3) of the South Central or Central and North Coast orders,
 - b. a community forest agreement referred to in section 1(4) of the South Central or Central and North Coast orders, or
 - c. the tree farm licence or non-replaceable forest licences that are referred to in section 1(4) of the South Central Coast Order.
- 3. The adjustment shall be \$2.75 per cubic metre.

4.5 Final Estimated Winning Bid

- 1. Subject to subsection 3 of this section the Final Estimated Winning Bid (FEWB) is the difference between the estimated winning bid and the total of the specified operations adjustments that are applicable to the appraisal or reappraisal of the cutting authority.
- 2. Expressed as an equation:

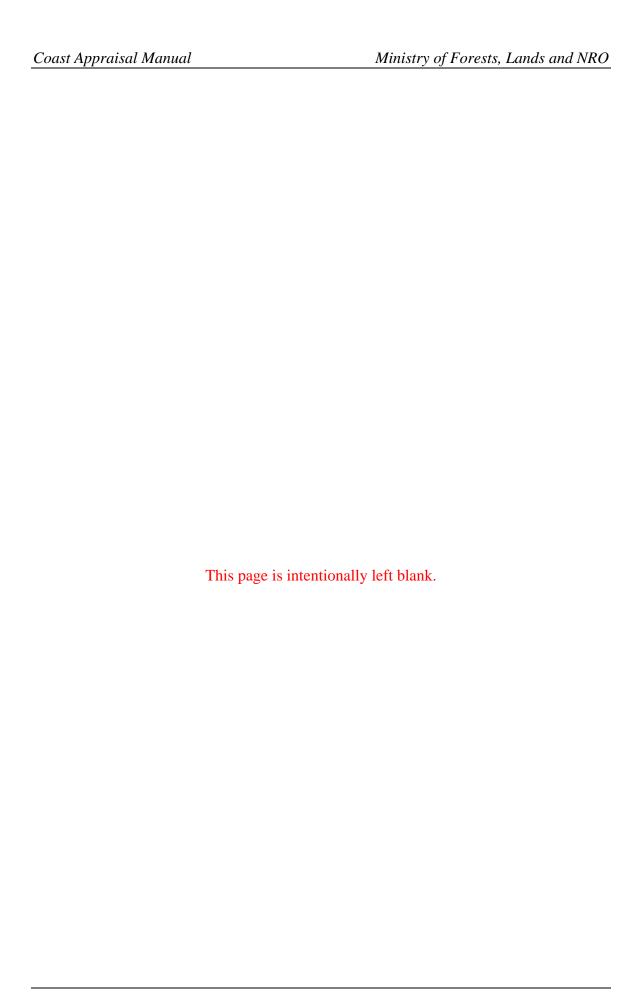
$$FEWB = EWB - SOA$$

Where:

EWB = The Estimated Winning Bid determined under section 4.3.

SOA = The sum of specified operations adjustments in an appraisal or a reappraisal of a cutting authority area as may be calculated under sections 4.4.1 through 4.4.7 and expressed in \$/m³.

3. Where the FEWB calculated is less than $0.25/\text{m}^3$, then the FEWB shall be $0.25/\text{m}^3$.



5.3.2 Existing Roads

- 1. The following roads may not be considered in the appraisal or reappraisal of a cutting authority area:
 - a. a constructed road that has been previously included in an appraisal or reappraisal of another cutting authority area,
 - b. a road previously constructed to access private timber, or
 - c. a road previously constructed in whole or in part for a purpose unrelated to the harvesting of timber on the cutting authority area being appraised or reappraised.

5.3.2.1 Extended Road Amortization

- 1. Notwithstanding subsection (3) and subject to subsection (2) of this section for new appraisals where the total road development cost calculated in an appraisal or reappraisal is greater than \$14.00/m³, the licensee and regional manager may agree that only a portion of an estimated road development cost will be used in the appraisal or reappraisal of the cutting authority area and that the balance of the estimated road development cost will be used in the appraisal or reappraisal of one or more tributary cutting authority areas.
- 2. Future tributary timber included in the extended road amortization agreement must be within a woodlot licence area, or in an approved cutting permit or cutblocks shown in the licence's forest development plan or forest stewardship plan in effect on the appraisal effective date.
- 3. No new extended road amortization agreements will be approved for cutting authorities issued under a woodlot licence with an effective date after November 30, 2008.
- 4. The agreement must provide that:
 - a. it may not be changed unless by mutual agreement, and
 - b. it is entered into only for the purposes of calculating a stumpage rate and confers no obligation on the Crown to compensate the licensee for any unamortized costs.

5.3.3 Tabular Cost Estimates

1. A tabular cost estimate must be calculated on the basis that the construction project will be completed using commonly used logging road construction practices and that the roads will have single lane width roads, turnouts and landings.

5.3.3.1 New Road Construction

1. New road construction cost estimate includes the cost of clearing and grubbing, stripping, stump removal, incidental log decking, ditch construction, landing and turnout construction.

- 2. The estimated cost per kilometre for new road construction is provided for each combination of rock hardness and bank height category.
- 3. New road section data is recorded using appendix VII and the following criteria:
 - a. road section lengths are measured along the road centreline and recorded to the nearest 0.001 km, and
 - b. the bank height is measured at right angles to the road centreline from the road surface to the top of the rock face.
 - c. road sections are measured over culverts (including wood culverts with a span length less than 4 m).
 - d. total bridge deck length for permanent and portable bridges, and span length on log bridges, is excluded from a road section length.
 - e. rock face height measurement on a through-cut section is taken from the highest side of the two road cuts.
- 4. If a tabular road section requires the trucking in of additional stabilizing material greater than 3.2 kilometres, use the non-tabular method to estimate the additional cost of trucking this distance.
- 5. Rock mass classification (RMC) is based on the physical characteristics of rock encountered in forest road development and is the subject of a report commissioned by the Forest Engineering Research Institute of Canada in 1978 and prepared by Piteau & Associates/Geotechnical Consultants. The text and tables in Appendix IV are based on this report and are used to determine the RMC-based factors required for road cost estimates.
- 6. Rock can be classified into five types referred to as rock mass classification (RMC) values and identified as RMC 1, 2, 3, 4 and 5. For the purpose of determining rock hardness, 'soft/medium' rock hardness category includes RMCs 1, 2, 3 and 4; 'hard' rock hardness category is equivalent to RMC 5.
- 7. The steps taken to determine RMC values and apply these to road development cost estimates are:
 - a. examine and record surface hardness, weathering, and block diameter in the field,
 - b. determine subsurface hardness from the table in Appendix IV with this title,
 - c. determine RMC value from the table Appendix IV with this title, and
 - d. apply selected RMC values to applicable tables and formulas for road cost estimates.
- 8. In all circumstances where a complete interpretation of the rock mass classification system is required, the Piteau & Associates report is to be consulted directly.

District: Sunshine Coast								
Location	ALD	Co-ordinates (Approximatel						
	Code	Latitude		Long	itude			
		Degrees	Minutes	Degrees	Minutes			
Jervis Inlet - Granville Bay DLS	JEGR	49	50	123	59			
Jervis Inlet - Hardy Island	JEHA	49	44	124	11			
Jervis Inlet - Hunaechin River DLS	JEHU	50	12	123	58			
Jervis Inlet - Killam Bay	JEKI	49	46	123	55			
Jervis Inlet - Nelson Island, Annis Bay North	JENN	49	46	124	00			
Jervis Inlet - Nelson Island, Vanguard Bay	JEVA	49	45	124	06			
Jervis Inlet - Perketts Creek	JEPE	49	52	123	52			
Jervis Inlet - Potato Creek	JEPO	50	08	123	48			
Jervis Inlet - Queens Reach, Smanit Creek	JEQU	50	10	123	56			
Jervis Inlet - Saltery Bay	JESA	49	46	124	10			
Jervis Inlet - Seshal Creek	JESE	50	01	123	55			
Jervis Inlet - St. Vincent Bay DLS	JESV	49	48	124	05			
Jervis Inlet - Stakawus Creek DLS	JEST	50	04	123	46			
Jervis Inlet - Treat Creek	JETC	49	50	123	52			
Jervis Inlet - Vancouver Bay	JEVB	49	55	123	51			
Malaspina Peninsula - Lund	MPLU	49	58	124	45			
Malaspina Peninsula - Steamboat Bay	MPSB	50	00	124	47			
Malaspina Peninsula East - Malaspina Inlet	MPMI	50	02	124	47			
Malaspina Peninsula East - Okeover Inlet	MPOI	49	59	124	41			
Malaspina Strait - Stillwater Bay - Stillwater DLS	MSSB	49	46	124	18			
Malaspina Strait - Lang Bay	MSLB	49	46	124	21			
Maurelle Island - East-West Bay	MIEW	50	18	125	06			
Maurelle Island - Florence Cove (Hole in the Wall)	MIFC	50	18	125	09			
Maurelle Island – West Side	MIWS	50	15	125	10			
Nelson Island - Fearney Point	NIFP	49	39	124	06			
Nelson Island - Cockburn Bay	NICB	49	41	124	11			

District: Sunshine Coast									
Location	ALD	Co-ordinates (Approximately)							
	Code	Latin	tude	Long	itude				
		Degrees	Minutes	Degrees	Minutes				
Powell River - Powell River Mill	PLPR	49	52	124	33				
Princess Royal Reach - Brittain River North	PRBR	49	59	123	59				
Pryce Channel	PRYC	50	19	124	53				
Ramsay Arm - Quatum Bay	RAQU	50	23	124	56				
Ramsay Arm - Ramsay Head	RARH	50	26	124	59				
Ramsay Arm - Head	RAHE	50	27	125	00				
Raza Passage - Francis Bay	RAZA	50	21	125	02				
Read Island - Evans Bay	RIEB	50	13	125	04				
Salmon Inlet - Camp "L" DLS	SICL	49	40	123	32				
Salmon Inlet - Clowhom Falls DLS	SICF	49	42	123	31				
Salmon Inlet - Misery Creek	SIMC	49	40	123	34				
Sechelt - Narrows Inlet - Tzoonie Narrows	SNTN	49	42	123	46				
Sechelt Inlet - Clipper Point (Piper Point) DLS	SICP	49	33	123	47				
Sechelt Inlet - Doriston	SIDO	49	42	123	53				
Sechelt Inlet - Kunechin Point	SIKP	49	39	123	49				
Sechelt Inlet - Nine Mile Point	SINM	49	36	123	46				
Sechelt Inlet - Oyster Bay	SIOB	49	34	123	48				
Sechelt Inlet - Powerlines	SIPO	49	39	123	52				
Sechelt Inlet - Skaiakos Point	SESP	49	36	123	49				
Sechelt Inlet - Snake Bay (Carlson Point)	SISN	49	32	123	47				
Sechelt Pen Skookumchuck Narrows, Earle Creek	SPSN	49	44	123	53				
Texada Island - Anderson Bay	TIAB	49	31	124	08				
Texada Island - Cook Bay	TICB	49	32	124	15				
Texada Island - Mount Bay	TIMB	49	38	124	26				
Thornbrough Channel - Avalon DLS	TCAV	49	30	123	29				
Thornbrough Channel - McNab Creek	TCMC	49	33	123	23				
Thornbrough Channel - Terminal DLS	TCTE	49	27	123	28				
Thornbrough Channel - Twin Creeks DLS	TCTC	49	28	123	29				

District: North Coast									
Location	ALD	Co-ordinates (Approximately)							
	Code	Latitude		Longitude					
		Degrees	Minutes	Degrees	Minutes				
Ursula Channel - Bishop Bay Log Dump	UCBB	53	26	128	53				
Ursula Channel - East Gribble Island Log Dump	UCGI	53	21	128	55				
Ursula Channel - Goat Harbour	UCGH	53	21	128	50				
Ursula Channel - Proposed BCTS	UCTS	53	29	128	57				
Ursula Channel - Riordan Creek Log Dump	UCRC	53	26	128	57				
Verney Passage - Cheenis Creek	VPCC	53	33	129	01				
Whale Channel - Cornwall Inlet, Drake Inlet Log Dump	WCDI	53	08	128	58				
Work Channel - Bill Lake	WCBL	54	23	130	05				
Work Channel - Marion Creek	WCMC	54	21	130	03				
Work Channel - Union Inlet	WCUI	54	33	130	24				

Campbell River Forest District

District: Campbell River Location	ALD Co-ordinates (Approximately)						
Location	Code			numates (T		
		Latitude			Longitude		
		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Bligh Island	BLIS	49	40	34	126	31	51
Brooks Bay - Cordero Channel	BRCO	50	27	20	125	25	45
Brougham - Nodales Channel	BRNO	50	22	23	125	22	59
Bute Inlet – East of Estero Basin (Egerton)	BUES	50	30	12	125	06	30
Call Inlet - Head of Call Inlet (south side)	CAHS	50	37	37	125	56	56
Call Inlet - Head of Call Inlet (north side)	CAHN	50	38	22	125	58	54
Call Inlet (North) - Call Inlet	CACN	50	36	33	126	06	03
Call Inlet (South) - Call Inlet	CACS	50	35	35	126	06	23
Chancellor Channel - Darcy Point South	CHDA	50	25	25	125	42	01
Comox	СОМО	49	39	-	124	55	-
Cordero Channel - Picton Point	COPI	50	28	04	125	23	55
Cordero Channel - Cordero 1	COCO	50	26	35	125	33	21
Cordero Channel - Tallac Bay	COTA	50	26	40	125	28	06
Discovery Passage - Elk Bay	DIEB	50	16	38	125	26	16
Discovery Passage - Menzies Bay	DIMB	50	07	28	125	23	15
Discovery Passage - West Sonora Island	DIWS	50	19	00	125	24	09
East Thurlow Island - Bickley Bay	ETBB	50	26	52	125	24	06
East Thurlow Island - Crawford Anchorage, Erasmus Island	ETCA	50	25	50	125	27	56
East Thurlow Island - Hemming Bay	ETHB	50	24	01	125	22	47
East Thurlow Island - Mayne Passage	ETMP	50	23	15	125	31	22
East Thurlow Island - Turn Harbour	ETTH	50	21	11	125	28	18
Esperanza Inlet - Port Eliza	ESPE	49	52	13	127	00	32
Esperanza Inlet - Port Eliza, Weasel Creek	ESWC	49	56	12	127	02	25
Espinosa Inlet - Mid Espinosa Inlet	ESME	49	55	42	126	56	32
Espinosa Inlet - South Espinoza	ESSE	49	53	26	126	54	56
Frederick Arm	FRED	50	30	18	125	15	29
Frederick Arm - Egerton Creek South	FAEC	50	29	04	125	15	00

District: Campbell River									
Location	ALD	Co-ordinates (Approximately)							
	Code	Latitude			Longitude				
		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
Quadra Island - Plumper Bay	QIPB	50	10	00	125	20	11		
Royston	ROYS	49	39	09	124	57	11		
Sonora Island - Horn Bay, North of Sonora Island	SIHB	50	25	20	125	12	24		
Sonora Island – Woods Bay	SOWO	50	18	56	125	17	39		
Sunderland Channel – Hill Point, Topaze Harbour	SCJB	50	31	01	125	45	24		
Sunderland Channel - Topaze Harbour, Jackson Bay	SCTH	50	31	18	125	49	35		
Tahsis Inlet - Tsowwin River	TITR	49	46	26	126	38	06		
Tahsis Inlet - West Tahsis	TIWT	49	52	26	126	40	25		
Thurston - Sonora Island	THUR	50	22	07	125	18	56		
Tlupana Inlet - Head Bay	TLHB	49	47	30	126	29	31		
Tlupana Inlet - Deserted Lake	TLDL	49	46	21	126	28	39		
Tlupana Inlet - Nesook Bay	TLNB	49	45	21	126	25	13		
Union Bay - Union Bay DLS	UBUB	49	35	02	124	53	31		
Wellbore Channel - Darcy Point, East of Hardwicke Island	WCDP	50	25	53	125	43	07		
West Thurlow Island - Butterfly Bay	WTBB	50	24	00	125	33	00		
West Thurlow Island - Knox Bay DLS	WTKB	50	23	25	125	37	19		
Zeballos Inlet - Little Zeballos	ZILZ	49	56	20	126	47	59		
Zeballos Inlet - South (Ciriaco)	ZISC	49	55	16	126	48	38		
Zeballos Inlet - Zeballos	ZIZE	49	58	41	126	51	27		

South Island Forest District

District: South Island								
Location	ALD	Co-ordinates (Approximately)						
	Code	Latitude			Longitude			
		Degrees	Minutes	Seconds	Degrees	Minutes	Seconds	
Alberni Inlet - China Creek	ALCH	49	9	20	124	47	32	
Alberni Inlet – Coleman Creek	ALCO	48	59	50	124	52	22	
Alberni Inlet - Shoemaker Bay	ALSB	49	13	33	124	50	08	
Alberni Inlet - Spencer Creek DLS	ALSP	48	58	24	124	54	38	
Barkley Sound - Cataract Lake DLS	BACA	48	57	28	125	15	40	
Barkley Sound - Sarita DLS	BASA	48	54	29	125	02	10	
Barkley Sound - Skull Lake DLS	BASK	49	02	37	125	09	48	
Barkley Sound - Toquart Bay DLS	ВАТО	49	01	23	125	21	40	
Barkley Sound - Tzartus Island	BATZ	48	56	59	125	04	07	
Chemainus	CHEM	48	54	59	123	42	24	
Coastland	COAS	49	08	47	123	55	41	
Cypre River DLS, Hecate Bay	CYPR	49	14	48	125	56	38	
Duke Point	DUKE	49	08	45	123	52	38	
Effingham Inlet	EFIN	49	05	36	125	11	23	
Flores Island - Steamer Cove	FLSC	49	22	40	126	11	31	
Galiano Island	GALI	48	53	-	123	20	-	
Great Central Lake - Dorothy	GCDO	49	21	38	125	23	02	
Great Central Lake - Lakeside	GCLA	49	21	29	125	11	36	
Great Central Lake - McBride	GCMC	49	23	35	125	25	44	
Great Central Lake - Mercs	GCME	49	21	48	125	15	57	
Great Central Lake - View	GCVI	49	23	20	125	22	45	
Herbert Inlet - Beddingfield Bay DLS	HEBE	49	21	04	125	59	27	
Jordan River	JORD	48	25	26	124	03	25	
Ladysmith DLS	LADY	48	54	59	123	42	20	
Ladysmith Head	LADH	49	01	39	123	51	19	
Mayne Island - Horton Bay	MIHB	48	49	44	123	15	01	
Mud Bay, Fanny Bay DLS	MUDB	49	27	48	124	47	44	
Mooyah	MOOY	49	37	51	126	27	23	
Nootka Sound - Zuciarte Channel, Mooyah Bay	NSZC	49	39	30	126	29	41	
Northwest Bay, Parksville	NBPA	49	17	49	124	12	45	