BRITISH COLUMBIA

Ministry of Forests

Office of the Minister

MEMORANDUM

File: 280-20/195-30/CAPP

October 31, 2002

To: Regional Managers - Coast

From: The Honourable Michael de Jong
Minister of Forests

Re: Amendment No. 2 to the *Coast Appraisal Manual*

I hereby approve Amendment No. 2 to the *Coast Appraisal Manual* and attach a copy for your use. The following sections have been amended.

Section 1.5	Housekeeping.
Section 1.6	Housekeeping.
Section 2.3.1	Anniversary date reappraisals have been eliminated and have been replaced by reappraisals for changed circumstances.
Section 2.4	Anniversary date reappraisal procedure replaced by changed circumstance reappraisal procedure.
Section 2.4.1	Describes effective date for a changed circumstance reappraisal.
Section 2.6(3)	Stumpage rates calculated using the district value index tables will no longer be reappraised.
Section 2.8	Housekeeping.
Section 3.3	Housekeeping.
Section 4.2	Housekeeping.
Section 4.2.2.2	Definition added.
Section 4.5.4	Housekeeping
Table 4-9	Barge towing distances for the Market Pricing System.
Chapter 7	Revised Market Pricing System formula.

This amendment will come into force on November 1, 2002. Further amendments or revisions to this manual require my approval.

for Michael de Jong
Minister of Forests

Attachment

pc: Bill Howard, Director, Revenue Branch

All Subscribers, *Coast Appraisal Manual*

BRITISH COLUMBIA Ministry of Forests

MANUAL REVISION TRANSMITTAL

FOR FURTHER INFORMATION CONTACT:

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MANUAL TITLE	
Coast Appraisal Manual	
REVISION No. Amendment No. 2	**ISSUE DATE** November 1, 2002
MANUAL CO-ORDINATOR Judy Laton, Revenue Branch	
AUTHORIZATION (Name, Title) W. Howard, Director, Revenue Branch	

Please make the following changes to your copy of the above Ministry manual. Please insert the following specified pages and **file this notice** immediately after the Amendments Tab.

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT	PAGE(S)	COMMENTS
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1.4 Responsibility for Stumpage

For the purposes of section 105 of the *Forest Act*, the following employees of the ministry are authorized to determine, redetermine and vary stumpage rates:

- regional managers, regional appraisal coordinators and employees of the regional revenue section, and
- director, Revenue Branch of the Ministry of Forests (Revenue Branch) and employees of the Revenue Branch.

1.5 Market Pricing System

The market pricing system (MPS), subject to the minimum stumpage rate and subsections 2.1 (3) and 2.1 (4), shall be used to determine a stumpage rate for coniferous sawlogs in a cutting authority area authorized to be harvested under a timber sale licence awarded under either section 20 or section 21 of the *Forest Act* on or after January 1, 1999, and any other cutting authority area as may be directed by the Minister of Forests.

1.6 Comparative Value Pricing System

Except as required by section 1.5 and subject to the minimum stumpage rate and subsections 2.1 (3), and 2.1 (4) the comparative value pricing system (CVP) shall be used to determine a stumpage rate for a cutting authority area.

The stumpage rate for a cutting authority area is more or less than the coast base rate (see section 5.5) depending on whether or not the timber in the cutting authority area is more or less valuable than timber from the average cutting authority area. To make that assessment and hence to determine a stumpage rate, the authorized Ministry of Forests employee (see section 1.4) will typically:

1. Estimate the average selling price of the logs for the cutting authority area (see chapter 3).

2. Estimate the least operating cost (see chapter 4) for the cutting authority area.

3. Determine the value index (see chapter 5) for the cutting authority area by subtracting the estimated least operating cost from the estimated average selling price.

4. Determine the indicated stumpage rate by comparing the value index for the cutting authority area with the coast mean value index and adding the coast base rate (see chapter 5).

5. Determine the reserve stumpage rate (see chapter 5) by selecting:

    a. the greater of the indicated stumpage rate or the prescribed minimum stumpage rate, or

    b. for an appraised cutting authority area containing timber licence volume, the greater of the adjusted indicated stumpage rate or the prescribed minimum stumpage rate.

6. Determine the upset stumpage rate by adding any development or silviculture levies (see section 6.5) to the reserve stumpage rate,

7. Determine the total stumpage rate by adding any bonus bid to the upset stumpage rate.

One stumpage rate is determined for all appraised timber in each cutting authority area with the exception of miscellaneous stumpage rates under section 6.6.

1.7 Stumpage Adjustments (CVP)

1. Unless a cutting authority or the application and tender for a timber sale licence specifies that stumpage rates are fixed for a specified period or for the full term of the cutting authority, stumpage rates are adjusted quarterly on January 1, April 1, July 1, and October 1 of each year, subject to section 6.4.

2. a. Each quarterly stumpage adjustment will be calculated using stumpage appraisal parameters approved by the director, Revenue Branch.

   b. Stumpage appraisal parameters are:

      i. Statistics Canada coast composite index,

      ii. coast target rate,

      iii. coast base rate,

      iv. coast mean value index,

      v. average log market values.

3. Stumpage rates are adjusted to reflect changes in estimated average selling prices based on revised average log market values (as authorized in this manual since the previous adjustment) and the recalculated operating cost based on the appropriate trend factors in section 4.9. In addition, the adjustment reflects changes in the Statistics Canada coast composite index, the coast base rate and the coast mean value index (see section 5).

2.3 Reappraisals

1. A reappraisal is a process used to redetermine a stumpage rate for a cutting authority area using the *Coast Appraisal Manual* in effect on the effective date of the reappraisal.

2. A reappraisal is based on a complete reassessment of the cutting authority area at the time of the reappraisal, as if the area has been returned to the condition it was in prior to development or harvesting.

3. At the time of a reappraisal, initial detailed engineering cost estimates may be re-estimated once after construction utilizing information as specified in section 4.3.3. However, development costs originally estimated using ministry approved competitive bids, are not re-estimated in a reappraisal.

2.3.1 Changed Circumstances

1. A cutting authority shall be reappraised if the licensee submits to the district manager a request for a reappraisal stating in the reappraisal submission that a changed circumstance has occurred or the district manager notifies the licensee in writing that a reappraisal is required because a changed circumstance has occurred, and in either instance the regional manager is satisfied that any of the following changed circumstances has occurred:

    a. (i.) The licensee plans to use a method of harvest to harvest at least twenty-five percent of the volume of timber in the cutting authority area that is different from the method planned to be used for that timber prior to the appraisal of the cutting authority area, and

        (ii) where the method of harvesting that will produce the appraisal least total operating cost estimate in the reappraisal is different from the method of harvesting that was used to produce the appraisal least total operating cost estimate in the appraisal, or

    b. there will be at least a twenty-five percent change in the total appraised development cost estimate upon reappraisal, or

    c. accumulated amendments (either additions or deletions of area containing merchantable timber) have been made to the cutting authority area since the most recent cruise compilation or recompilation was used for an appraisal or reappraisal that

        (i) exceed twenty-five hectares or

(ii) exceeds twenty-five percent of the area of the cutting authority area as it was prior to the amendment containing merchantable timber, (whichever is less), or

d. at least twenty-five percent of the volume of the appraised timber in a cutting authority area has been suddenly and severely damaged, unless the timber was damaged by a fire for which the licensee was responsible and the licensee failed to comply with any of sections 75 through 95 of the *Forest Practices Code of British Columbia Act* or the *Forest Fire Prevention and Suppression Regulation*. Despite subsection 2.3(2) where the cutting authority area is reappraised because of sudden and severe damage the redetermined stumpage rate is based upon the remaining timber only. The reappraisal cost estimate for development takes into account volume of timber already removed from the cutting authority area. This subsection is applicable to cutting authorities with either a fixed stumpage rate or a stumpage rate that is adjusted quarterly.

2. Where a cutting authority is reappraised under this section, any existing bonus bid remains in effect despite a redetermination of the upset rate.

2.3.2 Minister's Direction

1. The Minister of Forests may direct that a reappraisal be made at any time and that the redetermined stumpage rate be effective on any future date, and may specify criteria and procedures for the reappraisal.

2. A reappraisal directed by the Minister of Forests, may be a re-estimation of operating cost, log grade percentages, or selling price, or any combination of them, as may be directed by the Minister of Forests.

3. The Minister of Forests may direct that a reappraisal be made using the market pricing system.

2.4 Changed Circumstance Reappraisal Procedure

1. The licensee shall submit to the district manager a coast appraisal data submission if the cutting authority area must be reappraised because of a changed circumstance under section 2.3.1.

2. The district manager or their designate may require the licencee to complete and submit the least cost assessment page of the coast appraisal data submission for both aerial and cable harvesting methods when the district manager is not satisfied that the method proposed by the licensee is the only method that will be suitable for the area intended to be harvested by that method.

3. The licencee shall submit to the district manager any other information required by the district manager or their designate for the purposes of the reappraisal.

4. The submissions under subsections (1), and (2) of this section must be signed by a professional forester registered in the Province of British Columbia.

5. The district manager or their designate may review the licensee's submission and will notify the licensee, in writing, of any omissions, errors or provisions of the *Coast Appraisal Manual* that, in the opinion of the district manager or their designate, the signing professional forester may not have considered. The licensee's signing professional forester will consider the district manager's or their designate's notification and may revise the submission.

6. The district manager or their designate shall give any information supplied by the licensee under this section to the person who determines the stumpage rate and the licensee together with any other information that the district manager or their designate considers relevant to the reappraisal.

7. The person who determines the stumpage rate may review the licensee's submission, and information supplied by the district manager or their designate, and will notify the licensee, in writing, of any omissions, errors or provisions of the *Coast Appraisal Manual* that, in the opinion of the person who determines the stumpage rate, the signing professional forester may not have considered. The licensee's signing professional forester will consider the notification and may revise the submission.

8. To determine the stumpage rate, the person who determines the stumpage rate will consider:

    a. any information provided by the licensee and the district manager or their designate, and

    b. any information available to the person who determines the stumpage rate that is relevant to the reappraisal.

9. Regional staff will notify the licensee of the stumpage rate in the form of a stumpage advisory notice and will provide the licensee with a summary of the information used to determine the rate.

10. Within three (3) weeks of the date of the stumpage advisory notice, the licensee may notify regional revenue staff, in writing, of any objection to the information contained in the stumpage advisory notice that could be resolved without a review or appeal. The written objection must state the grounds for objection as well as a statement describing the relief requested. At this point, the objection is not considered a review or appeal under the *Forest Act* (section 143 to 150).

11. Regional revenue staff will notify the licensee, in writing, if the objection referred to in subsection (10) cannot be resolved. In this notification, the regional revenue staff will indicate that the three (3) week time requirement for notice for review specified in section 144 (3) of the *Forest Act*, will commence upon receipt of this notification.

2.4.1 Effective Date of Changed Circumstance Reappraisal

1. The effective date of the reappraisal under section 2.3.1 is the first day of the month following the date of the licensee's written notification to the district manager or the district manager's notification to the licensee that a changed circumstance has occurred unless the reappraisal is because of:

   a. Accumulated amendments under subsection 2.3.1 (1)(c), in which case the reappraisal is effective on the first day of the month following the date that the district manager notifies the licensee of the amendment approval, or

   b. Sudden and severe damage to the appraised timber under subsection 2.3.1(1)(d), in which case the effective date of the reappraisal is the first day of the month following the date of the occurrence of the damage, unless otherwise specified by the regional manager.

2.4.2 Minister Directed Reappraisal Procedure

1. The licensee shall submit to the district manager a coast appraisal data submission, 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 2.4 (3) through 2.4 (11).

2.6 Fixed Stumpage Rate and Extensions of Term

Small Business Forest Enterprise Program

1. Under the small business forest enterprise program a fixed stumpage rate means that the reserve stumpage rate, levies and bonus bids will not change during the term of the cutting authority and all extensions. The only exceptions are if a reappraisal is done under section 2.3.1(d) due to sudden and severe damage or under section 2.3.2 because of a minister's direction.

Woodlots

2. a. A stumpage rate of a cutting authority issued under a woodlot licence shall be adjusted quarterly unless a woodlot licensee chooses in accordance with this section to have a stumpage rate that is not adjusted quarterly.

   b. Where before or after the appraisal of the cutting authority area a licensee chooses to have a stumpage rate that is not adjusted quarterly, he or she may give written notice of that choice to the regional appraisal coordinator no more than three (3) weeks after the date of the stumpage advisory notice. Where proper notice is given the stumpage rate will not be adjusted quarterly.

District Average Value Index

3. Where the stumpage rate has been determined under section 6.1 or section 6.2 and the term of the cutting authority is extended the stumpage rate shall continue unchanged during the term of the cutting authority.

Timber Licence

4. Where the term of a cutting authority that includes the authorization to harvest timber in a timber licence area has been extended, the stumpage rate will be determined under section 6.6, if:

   a. the cutting authority has a term that began before May 1, 1995, and

   b. the cutting authority area has not been appraised.

Miscellaneous Stumpage Rates

5. Miscellaneous stumpage rates (section 6.6) will be based on the *Coast Appraisal Manual* in effect on the date of scale, except for those cutting authorities that specify miscellaneous stumpage rates in their cutting authority document.

2.7 Calculation Conventions

1. All operating cost calculations will be performed to the full capacity of the calculating machine with the results truncated at four places of decimals and rounded to two places.

2. Results from 5 to 9 will be rounded upward and from 1 to 4 will be rounded downward.

3. Each phase cost estimate ($/m^3) (see chapter 4) will be rounded to the nearest cent and will be added to the other phase cost estimates to obtain the total cost estimate.

4. Where values are specified as limits (constraints or requirements for equations), they will be treated as absolute values and actual measurements or records will not be rounded before use unless otherwise specified in this manual.

5. MPS stumpage rate calculations will be performed according to the methods outlined in Appendix V, entitled *Specifications: Calculating Stumpage Rates for Coast Appraisals for the Market Pricing System.*

6. CVP stumpage rate calculations will be performed according to the methods outlined in Appendix VI, entitled *Specifications: Calculating Stumpage Rates for Coast Appraisals.*

2.8 Coniferous Timber

1. In this manual, second growth coniferous timber means coniferous timber that is less than 141 years old.

2. In this manual, mature coniferous timber means coniferous timber that is 141 years old or older.

3. The volume of mature 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.

4. Where the volume of second growth coniferous timber in a cutting authority area is eighty percent or greater of the volume of all 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 using the second growth average log market values.

will be the source of the log grade percentages for that species, or

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 the entire supply block in the timber supply area that meets the criteria of subsection 3.2.2 (4), then that billing history record will be the source of the log grade percentages for that species, or

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 two year billing history record for the entire timber supply area that meets the criteria of subsection 3.2.2 (4), then that billing history record will be the source of the log grade percentages for that species, or

b. where there is no such billing history record, the person determining the stumpage rate will determine the log grade percentages for that species in accordance with subsection 3.2.2 (5).

3.2.4 Damaged Timber

Where the regional manager determines that the timber in a cutting authority area is significantly damaged, then notwithstanding sections 3.2.1, 3.2.2 and 3.2.3, the log grade percentages for the cutting authority area being appraised or reappraised may be estimated from available site specific information.

3.3 Stand Selling Price

1. Except as required by section 7.2.1 and section 7.2.2, 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 regardless of utilization requirements:

Alder	Fir
Balsam	Hemlock
Cedar	Lodgepole Pine
Cottonwood	White Pine
Cypress	Sitka Spruce
Birch	Engelmann Spruce
Maple	

Stand Selling Price Calculation

2. Subject to subsection 3 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 in that cutting authority area 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.

3. For the purposes of determining a stand selling price:

   a. birch and maple are deemed to be alder,

   b. in the Pemberton, Yale and Nahatlatch timber supply blocks:

      i. all spruce is deemed to be Engelmann spruce, and

4.1.1 Specified Operations

1. In addition to the logging phases and systems that are covered by this manual, there are specified operations which require special cost estimates.

2. The following is a complete list of specified operations for which certain cost phase estimates are based on the information on hand rather than on the tables and formulas in this manual. Specified operation cost estimates are combined with associated *Coast Appraisal Manual* phase cost estimates to determine the total operating cost for the cutting authority being appraised.

SPECIFIED OPERATIONS	AFFECTED PHASE
A-frame Logging	Tree-to-Truck (section 4.4)
Blowdown Timber	Tree-to-Truck (section 4.4)
Single Tree Selection	Tree-to-Truck (section 4.4)
Group Selection	Tree-to Truck (section 4.4)
Skyline Logging	Tree-to Truck (section 4.4)
Lake Transportation	Log Transportation (section 4.5)
Skidder Swinging	Log Transportation (section 4.5)
Towing to Tie-up Grounds (over 10 km Distance)	Log Transportation (section 4.5)
Camp Moves (of greater than 10 km)	Administration and Other Costs (section 4.6) except Helicopter Logging
Destumping for Root Disease Control	Administration and Other Costs (section 4.6)
Tree Crown Modification	Administration and Other Costs (section 4.6)

3. In this Manual, single tree selection means the harvest of single trees and the retention of adjacent dominant and co-dominant single trees, resulting in a uniform cut and leave pattern in each sub-area of the cutting authority area.

4. In this Manual, group selection means the harvest of several or many trees that results in a pattern of openings, with no qualifying opening more than 1 hectare in size.

5. The specified operations phase costs are monitored and updated by the regional manager and may not be part of the annual cost collection and analysis process.

4.2 Appraisal and Reappraisal Data Requirements

The cruise and all other pertinent information required for the appraisal must be submitted with the appropriate coast appraisal data submission.

Unless otherwise specified by the director, Revenue Branch, cruise data must be gathered and compiled according to the approved utilization specifications and in accordance with the following ministry of forests publications:

- Ministry of Forests *Cruising Manual*,
- Ministry of Forests *Cruise Compilation Manual*,
- Forest Service Policies (e.g., Timber Utilization Policy & Procedures for the Coast of the Province), and
- Regional Publications (e.g., chapter 9 of *Cruising Manual*).

In order to verify the accuracy of the cruise compilation program, the licensee must provide, on request, photocopies of the tally sheets and a magnetic copy of the compilation in a format required by the regional manager.

The appraisal is done using the net cruise volume of timber. The net cruise volume (m^3) is the gross volume (m^3) less decay, waste and breakage for all the species listed in section 3.3. The cutting authority total net cruise volume is determined by multiplying the net cruise volume per hectare (m^3/ha) by the total merchantable timbered area (ha) to be harvested under the cutting authority. The total merchantable timbered area is determined from the cruise summary.

If the application for a cutting authority is subsequently modified, the cruise submission must be recompiled by the applicant when more than five percent of the total number of compiled plots used in the cruise submission lie outside the boundaries established for the initial appraisal of the cutting authority.

Each reappraisal of a cutting authority area that has been amended after the appraisal must be done using the net cruise volume by species which is determined by adjusting the original cruise volume on the basis of approved amendments after the appraisal. If the accumulated amendments (either additions or deletions of areas containing merchantable timber) made to the cutting authority area exceed twenty-five hectares or twenty-five percent of the area containing merchantable timber, which ever is less, since the most recent cruise compilation or recompilation was used for an appraisal or reappraisal the entire cruise must be recompiled.

Plots located in areas requiring helicopter logging or specified operations are included in the cruise compilation calculation of conventional logging.

- Road Use Charges (section 4.5.4),
- Specified Operations (section 4.1.1),
- Overhead (section 4.6.1), and
- Accommodation (section 4.6.3).

A cost estimate for the crew transportation phase (section 4.6.2) is not applicable.

4.4.2.1 Helicopter Logging

The tree-to-truck cost estimate for helicopter logging other than the method described in section 4.4.2.2 is $66.60/m^3$.

4.4.2.2 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. It is not a single tree selection or group selection specified operation under section 4.1.1.

2. in addition to the costs identified in section 4.4.2, the cost estimate for helicopter single standing stem selection harvesting shall include the cost of marking, climbing, limbing, undercutting, wedging, breaking and removal of the tree by helicopter.

3. The tree-to-truck cost estimate for helicopter single standing stem selection is $100.40/m^3$.

4.5 Log Transportation

4.5.1 Truck Hauling

The truck hauling phase cost estimate is for the movement of logs from the roadside or landing in the woods to the appraisal final off-loading destination selected for the cutting authority. This cost estimate includes all rehaul situations except those involving lake transportation. Both on-highway and off-highway hauling are calculated with the same formula and variable.

1. Distance: The variable used to determine the truck hauling phase cost estimate is distance (km). This is the weighted average one-way haul distance from the centre of the cutting authority to the appraisal log dump where trucks are off-loaded. The weighted average haul distance (D) is estimated by:

   a. establishing the geographical centre point of each block or cutting area and projecting this point to the nearest road for measurement purposes,

   b. from this point determining the haul distance to the nearest junction serving all blocks or cutting areas,

   c. weighting the distance for each block by the volume on the block and determining the average weighted distance to the junction, and

   d. measuring the haul distance from the junction to the final appraised place of unloading and adding this to the average weighted distance to the junction as outlined above.

2. Formula: Where truck hauling is required, the cost estimate formula for the truck hauling phase for both isolated and accessible operations is:

$$(\$/m^3) = 3.564 + 0.098\ (D)$$

Where:

D is the weighted average one-way haul distance in kilometres, rounded to the nearest 0.1 km.

When:

D = 0, then the truck hauling cost estimate is equal to zero.

The appraisal log dump selected for trucks to off load is also the point of origin for the towing or barging phase (section 4.5.2.2).

Table 4-9: Barging Distance Estimate for the Market Pricing System

Code	Point of Origin	P/A	km	Code	Point of Origin	P/A	km
BACK	BARR CREEK	A	295	BOIN	BOSWELL INLET /SECURITY BAY	G	462
BLBY	BLOWHOLE BAY	A	259	CAIS	CAMPBELL ISLAND	G	560
CLCK	CLEAGH CREEK	A	394	DIBY	DINAN BAY	G	1047
COHA	COAL HARBOUR	A	418	ELHA	ELCHO HARBOUR	G	577
CYRV	CYPRE RIVER	A	184	FEBY	FERGUSON BAY	G	1032
EAIN	EASY INLET	A	325	RIIH	HEAD OF RIVERS INLET	G	498
ESIN	ESPINOSA INLET	A	298	SBEH	HEAD OF SOUTH BENTINCK ARM	G	636
GORV	GOLD RIVER	A	265	HNRV	HONNA RIVER	G	921
HEBY	HEAD BAY	A	256	KMBY	KEMANO BAY	G	810
BESH	HEAD OF BEDWELL SOUND	A	196	KHIN	KHUTZEYMATEEN INLET	G	948
HENO	HECATE CHANNEL - NOOTKA	A	260				
HOLB	HOLBERG	A	448	KIMS	KIMSQUIT	G	648
HORV	HOUSTON RIVER	A	250	KLEM	KLEMTU	G	610
HUCK	HUSHAMU	A	430	KUIN	KUMEALON INLET	G	820
INGE	INGERSOLL	A	397	KWBY	KWATNA BAY/MINERVA CREEK	G	564
JELA	JEUNE LANDING	A	415	KWRV	KWINAMASS RIVER	G	942
KEIN	KENDRICK INLET	A	244	MCBY	McCLINTON BAY	G	1053
KOHA	KOPRINO HARBOUR	A	382	MOIN	MOSES INLET/INRIG BAY	G	501
KUCV	KULTUS COVE	A	403	NAHA	NADEN HARBOUR	G	1014
MCCK	McCURDY CREEK	A	262	NABY	NASS BAY	G	972
MORV	MOOYAH RIVER	A	244	NORV	NOOTUM RIVER	G	519
OUIN	OUOUKINSH INLET	A	334	OCFA	OCEAN FALLS	G	564
PLHA	PLUMPER HARBOUR	A	238	POIS	PORCHER ISLAND	G	852
PTEL	PORT ELIZA	A	280	PRRU	PRINCE RUPERT	G	867
RACV	RANKIN COVE	A	211	RESO	RENNELL SOUND	G	927
STCV	STEAMER COVE	A	199	REPA	RENNERS PASSAGE	G	924
TLRV	TLUPANA RIVER	A	253	SCRV	SCOTIA RIVER *	G	944
TSRV	TSOWWIN	A	250	SWIN	SEWELL INLET	G	864
WIHA	WINTER HARBOUR	A	382	SKIN	SKIDEGATE INLET	G	918
ZEBA	ZEBALLOS	A	307	SOBY	SOUTH BAY	G	927
ALAR	ALICE ARM	G	1029	STEW	STEWART	G	1068
ALBY	ALLIFORD BAY	G	918	TASU	TASU SOUND	G	860
BEAN	BEATTIE ANCHORAGE	G	858	TUIN	TUCK INLET	G	879
BECO	BELLA COOLA	G	609	WECK	WEEWANIE CREEK	G	765
BIBY	BISHOP BAY	G	723	WOCH	WORK CHANNEL	G	948

Note: P/A = Point of Appraisal as described on the previous page.

* Distance does not include river towing.

4.5.3 Routine Maintenance and Deactivation

Routine maintenance includes grading, brush control, minor surfacing repairs, sanding, snowplowing, ditch maintenance and repair, replacement of culverts ≤ 0.9 m on active roads, slough removal and all deactivation costs.

Routine maintenance also includes minor repairs to roads due to slides, erosion and flood damage. All road use charges except those recognized in section 4.5.4 are also included.

The cost estimate for all routine maintenance carried out on logging operations, including roads required for basic silviculture and protection, depends on the geographic location of the cutting authority area. Cost estimates do not apply where there are no roads to be maintained.

The routine maintenance and deactivation cost estimates ($/m^3) by forest district are:

Zone 1 (North)

Queen Charlotte	North Coast
Mid Coast	Port McNeill
Total Cost Estimate =	$2.35/m^3

Zone 2 (South)

Sunshine Coast	Squamish
Campbell River	Chilliwack
South Island	
Total Cost Estimate =	$2.27/m^3

4.5.4 Road Use Charges

1. No road use charge shall be used to calculate a cost estimate, unless:

   a. the licensee submits to the district manager with the coast appraisal data submission:

      i. a completed *Request for Approval of a Road Use Charge Form*,

      ii. a copy of the written road use agreement, and

iii. written confirmation by the regional manager or their designate that the road use charge specified in the application, or an amount specified by the regional manager or their designate, is approved, and

b. the term of the road use agreement is completely within the period for which the appraisal shall apply.

2. The licensee when requested by the regional manager or their designate shall submit copies of auditable monetary transactions evidencing payment by the licensee for road use.

3. Charges as a Share of Road Maintenance

No recognition is made of such charges. The routine road maintenance cost estimate (section 4.5.3) includes all relevant costs whether incurred directly by the licensee or by payment to another party for services performed.

4. Charges for Other than Road Maintenance

There are three main categories of road status:

a. Forest Service Roads

A road that is declared, determined, built, maintained or modified by the ministry, as defined in forest legislation. No road use charges will be considered in appraisals;

b. Permitted Roads

Roads built on Crown land, authorized by road permit or other cutting authority documents. No road use charges will be considered in appraisals;

c. Other Roads

Road use charges for roads on indian reserves or on private land owned by an arm's length third party and not subject to a lease held by the licensee, their affiliate or agent of either, may be considered in appraisals provided there is no lower cost route capable of development through Crown land.

The charges recognized must be reasonable, must not exceed compensation that might be determined under the forest legislation, and must be proven through the presentation of auditable documents.

5. Land Use Charges

No land use charges will be considered in appraisals. These costs are included in section 4.6.1 corporate and forestry overhead.

4.6 Administration and Other Costs

4.6.1 Corporate and Forestry Overhead

Corporate general and administrative overhead cost estimates are compiled from surveyed expenses at the corporate licensee level and include all aspects of executive and administrative support functions at the head office attributable to logging operations, operating and support costs of the logging and log supply departments, all right-of-way easements, foreshore and other land leases necessary for the logging function.

Corporate forestry and engineering is compiled from the surveyed harvesting operations and includes supervisory, administrative and vehicle support functions; it also includes cruising, environmental protection measures (including hydro and other seeding) and the cost of performing residue and waste surveys. Silviculture overheads are also included in this phase. Any costs that will be reimbursed through the *Forest Act,* section 110, or by funding from any Crown agency are excluded except as noted in section 6.5.

The cost estimates are:

Corporate, General and Administrative Overhead	($/m^3) =	7.18
Corporate Forestry and Engineering	($/m^3) =	5.53
Total Corporate and Forestry Overhead	($/m^3) =	12.71

4.6.2 Crew Transportation (Labour)

Crew transportation refers to the labour costs associated with moving logging crews by vehicles from the appraisal marshalling area to the centre of the work area in the cutting authority being appraised, and return.

The appraisal marshalling area is defined as follows:

1. In situations where the cutting authority area being appraised is accessible (as determined in section 4.6.3), the licensees' contractually binding designated marshalling area, or in the absence of one, the nearest of (a) a contractually binding designated marshalling area, (b) the camp, (c) the crew vehicle storage area, or (d) centre of the nearest community.

2. In a situation where the cutting authority area being appraised is isolated (as determined in section 4.6.3), the licensees' contractually binding designated marshalling area, or in the absence of one, the nearest of (a) a contractually binding designated marshalling area, (b) the camp or (c) the vehicle storage area.

The appraisal marshalling area need not be the location actually used by a given licensee.

Where more than one appraisal marshalling area or route is reasonable, the area or route chosen for appraisal purposes will be the one that yields the least total operating cost estimate according to this manual.

For the purposes of this section, a "vehicle" may be a motor vehicle or a boat. When "vehicle" is taken to mean boat, the "vehicle storage area" may be a boat dock or wharf where the crew can embark and disembark.

The formula for crew transportation is:

$$\$/m^3 = 1.665 + 0.0546\ (D)$$

Where: D is the weighted average one way distance in kilometres (rounded to the nearest 0.1 km) from the centre of the appraisal marshalling area to the centre of the work area in the cutting authority area being appraised. In situations where the appraisal marshalling area is a community, D will be measured from the post office of that community.

Where: D=0, the crew transportation cost estimate is equal to zero.

The crew transportation cost estimate includes both crew travel time costs and crew vehicle operator time costs.

The cost of vehicle ownership, lease, rental, maintenance and operations are included in section 4.6.3, camp overhead.

4.6.3 Camp Operations and Overhead

4.6.3.1 General Camp Overhead

The general camp overhead phase cost estimate recognizes two types of logging operations according to the mode of access for logging crews to the highway system:

1. Accessible Cutting Authority

   An accessible cutting authority or cut block is one where the cutting authority or cut block is connected by a road suitable for crew buses, 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.

   The cost estimate covers the depreciation, maintenance and operating costs of camp and crew marshalling area facilities non-recoverable costs for cookhouses, freight by air or water, shop and office and other pertinent buildings; and provides for daily and/or periodical commuting costs.

   The cost estimate for accessible cutting authorities is: $9.57/m^3

2. Isolated Cutting Authority

   An isolated cutting authority is one which is not "accessible". This includes all cutting authorities where a portion of the access is by water or air only and is not serviced by public ferries.

   The cost estimate covers the depreciation, maintenance and operating costs of camp and marshalling area facilities; the non-recoverable costs incurred for cookhouses, bunkhouse, shop and office and other pertinent buildings; daily and/or periodical commuting cost from the camp to residential facilities; and camp and equipment moves of less than 10 km by water.

   The cost estimate for isolated cutting authorities is: $15.55/m^3

4.6.4 Low Volume Cost Estimate Additive

All fully appraised cutting authorities may be eligible for a low volume cost estimate additive.

The cost estimate additive is: $/m^3 = 7.38 - [0.00246 (V-2 000)]

Where:

- V is the lesser of the cutting authority net cruise volume or the licence's allowable annual cut of Crown timber (if applicable),

- V must be less than or equal to 5 000 m^3,
- The licence, under which the cutting authority has been issued, has an allowable annual cut of Crown timber not exceeding 10 000 m^3,
- The maximum cost estimate is \$7.38/m^3.

4.6.5 Clayoquot Sound

A cost estimate of \$19.52/m3 will be included in appraisals of cutting authorities in the Clayoquot Sound area (as defined below).

The Clayoquot Sound area is defined as Hesquiat Peninsula, Esowista Peninsula, the Islands, sea and all lands and waters draining into the Pacific Ocean from the height of land between Escalante Point in the north and Quisitis Point in the south.

4.7 Total Logging Cost Estimate

The total logging cost estimate is the sum of all phase cost estimates identified in chapter 4 for the cutting authority being appraised, including specified operations and least cost methods. Subsequently, basic silviculture costs are added and a trend factor applied to derive a total weighted logging cost.

4.8 Basic Silviculture

Basic silviculture cost estimates are made for all appraised cutting authority areas where basic silviculture is required.

The cost used for basic silviculture treatment carried out on land on which the licensee is required to establish a free-growing crop of trees, as specified in the *Forest Act,* depends on the geographic location of the appraised cutting authority area.

Basic silviculture treatment may not be required on some cutting authorities (e.g., right-of-way, licence-to-cut, commercial-thinning). A basic silviculture cost estimate is not included in the appraisal where this intent has been specified in the licence document, cutting authority or by applicant's agreement. Nor is a basic silviculture cost estimate included in the appraisal if the work is funded through the *Forest Act,* section 110, or by any Crown agency, except as noted in section 6.5.

Table 4-9: District Silviculture Cost Estimates

Forest District	$/m^3 *	Forest District	$/m^3 *
Mid Coast	1.70	South Island	2.24
Queen Charlotte Isl.	2.64	Campbell River	1.80
Chilliwack	2.27	Port McNeill	1.78
Squamish	2.62	North Coast	2.05
Sunshine Coast	2.48		

* The dollar per cubic metre ($/m^3) cost estimates are net of overhead.

4.9 Cost Trend

A cost trend factor is separately applied to the total logging cost estimate and the basic silviculture cost estimate at the effective appraisal date and at the date of each stumpage rate adjustment. The factors cover the period from the effective date of the cost base to the effective date of the stumpage rate calculation. Cost trends are shown in the following table.

Table 4-10: Trend Factor by Effective Date

APPRAISAL EFFECTIVE DATES FROM APRIL 1, 2000 AND BEFORE APRIL 1, 2001 *(cost base July 1, 1998)*

All Stumpage Adjustment Dates (or Appraisal Effective Date)	Trend Factor
April 1 to June 30, 2002	1.000
July 1 to September 30, 2002	1.000
October 1 to December 31, 2002	1.000
January to March 31, 2003	1.000

APPRAISAL EFFECTIVE DATES FROM APRIL 1, 2001 AND BEFORE APRIL 1, 2002 *(cost base July 1, 1999)*

All Stumpage Adjustment Dates (or Appraisal Effective Date)	Trend Factor
April 1 to June 30, 2002	1.000
July 1 to September 30, 2002	1.000
October 1 to December 31, 2002	1.000
January 1 to March 31, 2003	1.000

APPRAISAL EFFECTIVE DATES FROM APRIL 1, 2002 *(cost base July 1, 2000)*

All Stumpage Adjustment Dates (or Appraisal Effective Date)	Trend Factor
April 1 to June 30, 2002	1.000
July 1 to September 30, 2002	1.000
October 1 to December 31, 2002	1.000
January to March 31, 2003	1.000

Market Pricing System 7

7.1 Introduction

1. The MPS is the method for determining a stumpage rate for coniferous sawlogs in a cutting authority area, using information which includes the bids for other cutting authority areas that were sold at auction.

7.2 Log Selling Prices

1. Invoiced (f.o.b.) log market values are compiled from prime, domestic, arms-length sales reported to occur in areas adjacent to the Strait of Georgia; the Strait of Juan de Fuca and the Alberni Inlet east of a line drawn south from Amphitrite Point; Johnstone Strait; the Queen Charlotte Strait south of a line drawn west from Cape Caution; and the Fraser River west of the bridge at the confluence of the Pitt River. The cut off date for the collected log market value input is approximately forty-five (45) days prior to the stumpage rate adjustment date.

2. For the market pricing system a set of average log market values by species and log grade is developed using sales data for each three-month reporting period. The three-month sales data is used to produce a schedule of average market values by species and log grade for mature timber stumpage rate determinations published monthly by Revenue Branch for stumpage rate calculations.

3. The same three-month schedule is adjusted on a species grade level to create a schedule for MPS second growth average log market values to be used for second growth MPS stumpage rate determinations. See section 2.8 for the definition of second growth.

4. The second growth schedule adjustment table will be reviewed and/or updated as determined by the director, Revenue Branch.

7.2.1 Log Grade Percentage

Section 3.3 (3)(e), the low volume cypress exception, shall not be used to calculate stumpage rate using the MPS.

7.2.2 Calculation of Stand Selling Price

The volumes and prices of alder, birch, maple, and cottonwood shall not be used in the calculation of the stand selling price in the determination of a stumpage rate using the MPS.

7.3 Stumpage Calculations

7.3.1 List of MPS Variables

MARKET STUMPAGE PRICE	Market stumpage price for the cutting authority in $/m^3$.
ALP	Average coniferous log selling price estimate ($/m^3$) based upon log grades and species for the cutting authority area, and schedules of log market values collected and published by Revenue Branch.
HEMBAL	Fraction of coniferous volume that is hemlock and balsam.
SLOPE	Average side slope percentage for the cutting authority area.
VPH	Volume per hectare in m^3/ha. Calculated by dividing the total net coniferous cruise volume (m^3) by the total merchantable area (ha).
HELI	Fraction of the total net cruise volume (which includes deciduous volume) that needs to be helicopter yarded. This is calculated by dividing the volume to be harvested by helicopter by the total net cruise volume of the cutting authority area.
SOR	The specified operation cost estimate ($/m^3$) as determined by the regional appraisal coordinator. For the list of specified operations refer to section 4.1.1.
HD	Truck haul distance (km). This is calculated using the procedures in section 4.5.1.
ln (PENB)	The natural logarithm of the preliminary estimated number of bidders that would compete for the cutting authority.
VOL	Total net cruise volume of coniferous timber (m^3).
CPIF	BC Consumer Price Index (P110000) for current month divided by the base CPI of 109.3.
CABLE	Fraction of the total net cruise volume (which includes deciduous volume) that needs to be cable yarded. This is calculated by dividing the volume to be yarded by cable by the total net cruise volume of the cutting authority area. Cable yarding is an overhead cable system such as highlead (spar), mobile (grapple or dropline) and skyline.

ISOLATED	(1)	ISOLATED = 1, where: a. fifty percent or greater of the total net cruise volume (which includes deciduous volume) of the cutting authority area is accessible by air or water only. Except where the service landing used to support the yarding of timber by helicopter is accessible by road, or b. the cutting authority area is located in the Queen Charlotte Islands forest district.
	(2)	In all other circumstances ISOLATED = 0.
BARGEDUM	(1)	BARGEDUM = 1, where the point of origin required to be used in the appraisal of the cutting authority area is listed in table 4-9.
	(2)	In all other circumstances BARGEDUM = 0.
BARGEDIST	(1)	BARGEDIST is the barging distance listed in Table 4-9 for the point of origin required to be used in the appraisal of the cutting authority area.
SECOND GROWTH	(1)	SECOND GROWTH = 1, where eighty percent or greater of the total net coniferous volume of the cutting authority area is second growth coniferous timber.
	(2)	In all other circumstances SECOND GROWTH = 0.

7.3.2 Preliminary Market Stumpage Value

1. The following equation shall be used to calculate the preliminary market stumpage value.

2. Preliminary Market Stumpage Value (PMSV) =
[-28.60 + 0.7916 (ALP/CPIF) - 10.0689 (HEMBAL) - 0.1043 (SLOPE) - 0.5658 (SOR/CPIF) - 33.1665 (HELI) + 18.4796 (VPH/1000) + 8.7658 (ln (5.9)) - 0.0532 (HD) - (4.6244)(0.2491)(BARGEDUM) - (4.6244)(0.001595)(BARGEDIST) - 3.0145 (ISOLATED)] CPIF

3. Where the calculated PMSV is less than $0.25, then the PMSV shall be $0.25.

7.3.3 Preliminary Estimate of Number of Bidders That Would Compete for the Cutting Authority (PENB)

1. The following equation shall be used to calculate the (PENB).

2. PENB =
   2.0923 + 0.0623 (PMSV/CPIF) + 0.0906 (VOL/1000) - 0.000630 (VOL/1000)^2 - 1.2730 (HELI) - 1.9777 (CABLE) + 2.5332 (SECOND GROWTH)

3. If VOL is greater than 60 000, then VOL shall be 60 000.

4. The PENB shall be rounded to one decimal place.

5. Where the calculated PENB is less than 1, the PENB shall be 1.

7.3.4 Interim Market Stumpage Value (IMSV)

The IMSV shall be calculated using the equation below.

IMSV = |-28.60 + 0.7916 (ALP/CPIF) – 10.0689 (HEMBAL)
- 0.1043 (SLOPE) - 0.5658 (SOR/CPIF) - 33.1665 (HELI) + 18.4796 (VPH/1000) + 8.7658 (ln (PENB)
- 0.0532 (HD) - (4.6244)(0.2491)(BARGEDUM)
- (4.6244)(0.001595)(BARGEDIST) - 3.0145 (ISOLATED)| CPIF

7.3.5 Repeat PENB Calculation

The PENB calculation in section 7.3.3 shall be repeated substituting in that equation the IMSV calculated under section 7.3.4 in place of the PMSV.

7.3.6 Repeat IMSV Calculation

The IMSV calculation in section 7.3.4 shall then be repeated substituting the new PENB calculated under section 7.3.5.

7.3.7 Test for Further Iteration and Final Market Stumpage Value (FMSV)

The IMSV calculated under section 7.3.6 shall be compared with the IMSV calculated under section 7.3.4. If the two values when each is rounded to the nearest \$0.01/m^3 are equal then that value is the FMSV. If the two values are not equal, then the procedure required under sections 7.3.5 and 7.3.6 shall be repeated until the two values when each is rounded to the nearest \$0.01/m^3 are equal. When those values are equal, the value is the FMSV.

7.3.8 Total Obligation Adjustment

This section does not apply to cutting authority areas under timber sale licences under sections 20 or 21 of the *Forest Act*. The total obligation adjustment for those cutting authority areas is zero ($0.00m^3).

The total obligation adjustment ($/m^3) is the sum of the following:

- Overhead; the total corporate and forestry overhead cost estimate, from section 4.6.1,
- road construction; the development cost estimate, calculated from section 4.3,
- market logger road cost; - $2.03/m^3,
- road maintenance; the routine maintenance and deactivation cost estimate, from section 4.5.3,
- road use charges; the road use charges estimate, from section 4.5.4,
- silviculture; the basic silviculture cost estimate, from section 4.8
- camp costs; dump, sort and boom: $6.42/m^3, and
- logger overhead: - $4.00/m^3.

These adjustments are untrended and updated only at reappraisal based upon the *Coast Appraisal Manual* in effect at the time.

7.3.9 Discount Factor (DF)

Except as provided in section 7.3.9.1 the discount factor (DF) is:

a. 0.0, where the harvesting of the cutting authority area is authorized under an agreement other than a timber sale licence entered into under either section 20 or 21 of the *Forest Act*, or

b. 0.3, where the harvesting of the cutting authority area is under a timber sale licence entered into under either section 20 or 21 of the *Forest Act*.

7.3.9.1 High Development Cost Discount Factor

1. In this section:

a. DC is the development cost ($/m^3) borne by the agreement holder calculated using the procedures in section 4.3, and

b. FMSV is the final market stumpage value calculated under section 7.3.7 or $\$0.25/m^3$, whichever is greater.

2. Where:

a. the harvesting of the cutting authority area under an agreement under either section 20 or section 21 of the *Forest Act*,

b. some or all of the development cost is the responsibility of the agreement holder, and

c. DC minus (2.0-3/FMSV) is greater than 0.3, then the DF shall be DC-2.03/FMSV.

7.3.10 Indicated Stumpage Rate

The indicated stumpage rate is calculated using the following equation:

$$IR = [FMSV (1 - DF)] - TOA$$

Where:

IR	=	Indicated stumpage rate
FMSV	=	Final market stumpage value (as calculated in section 7.3.7)
TOA	=	Total obligation adjustment (as calculated in section 7.3.8)
DF	=	Discount factor (as calculated in section 7.3.9)

7.3.11 Prescribed Minimum Stumpage Rate

The minimum stumpage rate is prescribed by the *Minimum Stumpage Rate Regulation* (B.C. Reg. 354/87).

7.3.12 Reserve Stumpage Rate

For each timber mark in a cutting authority area, the reserve stumpage rate is the greater of:

a. the indicated stumpage rate, or

b. the prescribed minimum stumpage rate.

7.3.13 Upset Stumpage Rate

The upset stumpage rate is equal to the reserve stumpage rate.

Where a timber sale licence with stumpage rates calculated using MPS does not receive any bids and is subsequently awarded directly under section 23 (1)(e) of the *Forest Act*, the advertised upset stumpage rate applies.

7.3.14 Total Stumpage Rate

The total stumpage rate is the upset stumpage rate plus any bonus bid.

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