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Ministry of Forests and Range Minister's Office

MEMORANDUM

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AUG 27 2010

To: Madeline Maley, A/Regional Executive Director, Southern Interior Region
Bill Warner, Regional Executive Director, Northern Interior Region

From: The Honourable Pat Bell
Minister of Forests and Range

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

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

Section 1.1	Revised definitions for clarification include Agreement, Applicable Volume BCTS, Cruise Based, Net Merchantable Volume, and Single Unit.
Section 1.2.1	Employees of the Ministry of Tourism, Culture and the Arts have been added to the list of those responsible for stumpage determination specifically for tabular rates in controlled recreation areas.
Section 2.2.1(1)	Date change to July 1, 2010 from June 1st for changed circumstance reappraisals.
Section 2.2.1(3)	Section reference corrected.
Section 2.2.1.1	Revised text with clarification for sudden and severe damage changed circumstance.
Section 2.2.1.2	Revised text for clarification of the effective date of a changed circumstance reappraisal for cutting authorities issued prior to August 1, 2005.
Section 2.2.2	Housekeeping change.
Section 4.3.3	Revised text and new subsection for known site information in detailed Engineering Cost Estimate (ECE's). Additional housekeeping changes.

Section 4.5	Revised text for clarification of the volume that is considered in the net merchantable area.
Section 4.6	Revised text for clarification on application of low grade percent adjustment to cruise based sales.
Table 6-6	Updated section reference and clarification regarding cruise based cutting authorities.
Section 6.9(1)(3)	Revised text for clarification of coniferous volumes and housekeeping changes.
Section 6.9(2)	Revised text for clarification of application of the stand as a whole stumpage rate to deciduous volume for cruise based cutting authorities.
Section 6.9(6)	Revised text clarification for sawlog volume.
Appendix I	Revised text for clarification regarding rock drills.
Appendix VI	New subsection and revised definition added for clarification.

This amendment will come into force on September 1, 2010. Further amendments or revisions to this manual require my approval.

Pat Bell
Minister
Attachment

pc: Murray Stech, Director, Pricing Branch

Ministry of Forests and Range

MANUAL REVISION TRANSMITTAL

FOR FURTHER INFORMATION OR IF YOU HAVE A CHANGE OF ADDRESS, PLEASE CONTACT:	**MANUAL TITLE** Interior Appraisal Manual	
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	MANUAL CO-ORDINATOR Judy Laton Publications/Administrative Co-ordinator	
	AUTHORIZATION (Name, Title) Murray Stech Director, Pricing Branch	

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

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT TABLE OF CONTENTS	PAGE(S)	COMMENTS
Remove	Table of Contents	i - ii	After Table of Contents Tab
Insert		i - ii	
Remove	Chapter 1	1 - 8	After Chapter 1 Tab
Insert		1 - 8	
Remove	Chapter 2	3 - 8	After Chapter 2 Tab
Insert		3 - 8	
Remove	Chapter 4	7 - 8 17 - 22 29 - 30 35 - 36	After Chapter 4 Tab
Insert		7 - 8 17 - 22 29 - 30 35 - 36	
Remove	Chapter 6	7 - 8 15 - 20	After Chapter 6 Tab
Insert		7 - 8 15 - 20	
Remove	Appendices	1 - 2 13 - 14 17 - 18	After Appendices Tab
Insert		1 - 2 13 - 14 17 - 18	
INSERT	Letter from Minister and Transmittal Sheet		After Amendments Tab

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Introduction 1

1.1 Definitions

In this manual:

"Act" means *Forest Act*;

"Agreement" means a form of agreement granting rights to harvest Crown timber referred to in section 12 of the *Act*, or a pulpwood agreement;

"Anniversary date" means the annual recurrence of the month and day when the term of the cutting authority began;

"Applicable Volume" means:

a. Except as provided in section 2.2.1(d) and 4.3.1(4)(d), and subject to paragraph (b) of this definition, where the harvesting is authorized on a cutting authority area under an agreement other than a BCTS licence, applicable volume means the total net coniferous volume,

b. Where the cutting authority or the agreement under which the cutting authority is issued is cruised based or requires harvesting in deciduous stands and the deciduous timber has not been reserved, applicable volume means the sum of the total net coniferous volume and the total net deciduous volume,

c. Where the harvesting is authorized on a cutting authority area under a BCTS licence, applicable volume means the sum of the total net coniferous volume and the total net deciduous volume;

"**Appraisal Data Submission (ADS)"** means the information required by the person who determines the stumpage rate to determine that rate including the appraisal map, cruise information (including the required reports and the ASCII cruise data files unless otherwise specified by the director of Pricing Branch) and any other information required by the regional manager or district manager, in the form required by the director, or the Interior Stumpage Rate Request Form, signed by a registered professional forester (RPF) or registered forest technologist (RFT), registered with the Association of British Columbia Forest Professionals;

"BCTS" means BC Timber Sales;

"BCTS licence" means a timber sale licence entered into under Section 20 of the *Act* or Section 21 as it was before it was repealed;

"Billing history record" means a record of log scale data derived from a record kept by Pricing Branch of log scale data reported on stumpage invoices issued by the Pricing Branch for timber scaled under section 94 of the *Act*;

"Bonus Bid" means a bonus bid described in section 103(1)(d) of the *Act*;

"Bonus Offer" means a bonus offer described in section 103(2) of the *Act*;

"Chipped" means having been cut into small pieces by a chipper;

"Coniferous cruise volume" means that part of the total net cruise volume which is coniferous timber;

"Controlled Recreation Area" means controlled recreation area as defined in the *Resort Timber Administration Act*;

"Cruise Based" means a cutting authority where under section 106 of the *Act* the stumpage payable is calculated using information provided by a cruise of the timber conducted before the timber is cut;

"Cutting Authority" means:

1. A cutting permit issued under:
    a. a forest licence,
    b. a timber sale licence that provides for cutting permits,
    c. a tree farm licence,
    d. a community forest agreement,
    e. a woodlot licence,
    f. a timber licence,
    g. a community salvage licence,
    h. a master licence to cut,
    i. a forestry licence to cut, or
    j. a woodland licence,
2. A timber sale licence under which cutting permits have not or will not be issued,
3. All other licences to cut,
4. A road permit;

"Cutting Authority Area" means the area where timber may be harvested under a cutting authority, which has a unique timber mark;

"Deciduous timber" means timber that is not of a coniferous species;

"Decked timber" means timber that has been 100% decked at roadside;

"Director" means director of Pricing Branch of the Ministry of Forests and Range;

"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*, (RTAA) then district manager means an employee of the Ministry of Tourism, Culture and the Arts to whom the minister of that ministry has delegated the minister's powers and duties under section 2 of the RTAA;

"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, Field Operations" means Executive Director, Field Operations or Executive Director, Field Operations designate;

"F.O.B." means 'free on board'. The specified destination point at which ownership of the goods transfers from the seller to the buyer. 'F.O.B. origin' would mean the buyer assumes responsibility for the goods, shipping costs and insurance once the goods leave the seller's premises.

"Fully Appraised" means stand data (site specific or borrowed) has been used by the general appraisal system to calculate an indicated stumpage rate or has been included in an appraisal for a BCTS cutting authority including appraisals where the upset rate was set at the variable cost to prepare the timber for sale;

"Hogged Tree Material" means tree residues or by-products that have been shredded into smaller fragments by mechanical action;

"Licensee" means the holder of a cutting authority;

"Manual" means *Interior Appraisal Manual*;

"Minister" means Minister of Forests and Range;

"Ministry" means Ministry of Forests and Range;

"Net Merchantable Volume" means unless otherwise specified in the manual, the post reduction cruise volume compiled to the Interior Standard Merchantable Specifications in Table 1-1 of this manual;

"New Construction" means the following construction phases: subgrade construction, placement of additional stabilizing material and the construction and installation of drainage and other pertinent structures;

"Partially Harvested Timber" means timber that has been felled and/or bucked and not yet forwarded to roadside;

"Prescribed Minimum Stumpage Rate" means the minimum stumpage rate prescribed by the *Minimum Stumpage Rate Regulation* (BC Regulation 354/87);

"Pricing Branch" means the Pricing Branch of the Ministry;

"Reconstruction and Replacement" means replacement or structural repair of a major drainage structure (e.g., replacing stringers, cross ties, or cribbing), or major resurfacing, which means resurfacing sections of more than 0.3 km in length that were initially surfaced but have deteriorated due to long term wear and tear, where stabilizing material was not previously used, or major reconstruction, which means restoring at least 0.1 km of road (per occurrence) that requires complete rebuilding of the subgrade;

"Regional Manager" means regional executive director or except for section 1.2.1(1)(a), the regional executive director's designate;

"Regulations" means regulations under the *Act*;

"Remedial Fence and Wing Fence" means a fence that is required to remedy, reduce or manage the impact of timber harvesting activities on range management;

"Road Permit" means road permit or road timber mark;

"Salvage" except as provided in section 6.4, means a cutting authority area where greater than one-third of the net coniferous cruise volume is attacked by mountain pine beetle or other pests;

"Scale Based" means the stumpage payable is based on a scale of the timber in accordance with Part 6 of the *Act*;

"Single Unit" means a cutblock has one continuous boundary and it is not made up of two or more pieces separated by timber that is not within the gross area of the cutblock from the cruise compilation;

"Species Net Volume" is the species net volume reported in the appraisal summary report from the cruise compilation for the cutting authority area;

"Stand as a Whole (SAAW) Pricing" means that one stumpage rate is determined for all of the net merchantable timber on the cutting authority area. In a cruise based cutting authority, the single stumpage rate applies to all of the net merchantable volume identified in the cruise conducted in accordance with the *Cruising Manual*,

"Stud Log Percent" means the net volume of 5 m logs with top diameters under 20 cm expressed as a percentage of the total net cruise volume. The stud log percent is rounded to the nearest whole percentage point;

"Stumpage Appraisal Parameter" means:

a. Interior average market price,
b. Interior base rate,
c. Interior mean value index,
d. BC Consumer Price Index,
e. US Dollar Exchange rate,
f. Lumber and Chip Average Market Values,
g. Interior Basic Silviculture Costs by Species,
e. Final Neutrality Adjustment.

"Suitable Secondary Stand Structure Survey" means a suitable secondary stand structure survey as defined in Section 1(4) of the *Forest Planning and Practices Regulation*;

"Timber Harvesting" means the felling or removal of timber other than on road rights-of-way or landings on a cutblock;

"Timber Sales Manager" means the Timber Sales Manager or the Timber Sales Manager's designate;

"Total Net Coniferous Volume" is the total of the species net volumes for all coniferous species on the cutting authority area;

"Total Net Cruise Volume" means the sum of the species net cruise volumes reported in the appraisal summary report from the cruise compilation for the cutting authority area;

"Total Net Deciduous Volume" is the total of the species net volumes for all deciduous species on the cutting authority area,

"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.

1.2 Terms of Reference

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

1.2.1 Responsibility for Stumpage Determination

1. The following employees of the ministry are authorized to determine, redetermine and vary rates of stumpage:

    a. regional managers, regional timber pricing co-ordinators, and employees of the regional revenue sections, and

    b. director and employees of Pricing Branch.

2. The employees of the Timber Administration section, Resort Development Branch of the Ministry of Tourism, Culture and the Arts are authorized to determine or redetermine stumpage rates in accordance with section 6.8(1) or (2).

1.2.2 Stumpage Appraisal Parameters

1. The stumpage appraisal parameters are compiled, calculated, and/or adopted by Pricing Branch.

2. Once approved by the director they become an integral part of this manual.

3. The parameters are published by Pricing Branch.

4. Current and historical parameters may be found at the following web site:

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

1.2.3 Minimum Stumpage Rate

A stumpage rate determined using this manual shall not be less than the prescribed minimum stumpage rate.

1.3 Numbering and Calculation Conventions

1. The following exemplifies the numbering system used in this manual:

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

2. The calculation of the Interior Average Market Price must be performed in accordance with the specifications contained in the documents titled: "*Specification: Calculation of the Interior Average Market Price*" dated July 1, 2006, and "Interior Market Pricing System Update – 2007".

3. The calculation of the stand value index, mean value index and the base rate must be performed in accordance with the specifications in the document titled: "*Specifications: Calculation of Interior Stumpage Rates*" dated July 1, 2006.

4. Where a value is specified as a limit, for example a constraint or a requirement for an equation,

   a. The value will be treated as an absolute value, and

   b. An actual measurement or record will not be rounded before use unless otherwise specified in this manual.

5. Each calculation of a tenure obligation adjustment or specified operation expressed in dollars per cubic metre will be rounded to the nearest cent.

2.2 Reappraisals

1. Where these policies and procedures require a reappraisal to be performed, the stumpage rate must be redetermined in accordance with the relevant policies and procedures that are or were in effect as the case may be on the effective date of the reappraisal.

2. Except as provided in sections 2.2.1(1)(e), and 2.2.3 or otherwise directed by the Minister in section 2.2.2.1, 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 in accordance with section 4.3.3.

2.2.1 Changed Circumstances

1. In this manual a changed circumstance means a circumstance where:

    a. i. the licensee has used or will use a harvest method to harvest at least fifteen percent of the volume of timber in the cutting authority area that is different from the method used in the most recent appraisal or reappraisal of the cutting authority area, and

        ii. the different harvest method that has been used or will be used when used in the changed circumstance reappraisal will produce the highest stumpage rate.

    b. There will be a difference of at least fifteen percent between the total appraised development cost estimate in the changed circumstance reappraisal and the total appraised development cost estimate that was used in the most recent appraisal or reappraisal where the change is caused by circumstances other than a change in the manual or a change as a result of a stumpage adjustment.

    c. Land containing merchantable timber has been either added to or deleted from the cutting authority area since the most recent cruise compilation or recompilation was used in an appraisal or reappraisal that exceeds the lesser of:

        i. fifteen hectares, or

        ii. fifteen percent of the area of the cutting authority area as it was prior to the addition or deletion of the land.

d. The stumpage payable on timber harvested on a cutting authority area is calculated using the information provided by a cruise of the timber before the timber is cut, and land containing merchantable timber has been added to or deleted from the cutting authority area that exceeds the lesser of:

   i. five hectares, or

   ii. five percent of the area of the cutting authority area as it was prior to the addition or deletion of the land.

e. i. except where timber on a cutting authority area has been damaged by a fire for which the licensee was responsible and the licensee failed to comply with the *Wildfire Act* or *Wildfire Regulations*, where timber is authorized for harvest under a cutting authority that has either a fixed stumpage rate or a stumpage rate that is adjusted quarterly and at least fifteen percent of the volume of the timber that was considered in the appraisal of the cutting authority area authorized for harvest under that cutting authority has been suddenly and severely damaged.

   ii. where the cutting authority area is reappraised because of sudden and severe damage the only timber that can be considered in the reappraisal is the standing timber remaining on the cutting authority area after the sudden and severe damage.

f. A cutting permit authorizing the harvesting of timber was issued before July 1, 2010 and surrendered on or after July 1, 2010, because of the planned Interior pricing policy changes July 1, 2010, and

   i. the volume of all of the timber in all of the cutblocks where harvesting has not started, hereinafter referred to as the remaining timber, is greater than twenty-five percent of the volume of timber that was on the cutting authority area when the cutting permit was issued, and

   ii. the District Manager is satisfied that the remaining timber or harvest method is significantly different from the timber that has been harvested under the cutting permit.

g. A cutting permit authorizing the harvesting of timber on the cutting authority area was issued before July 1, 2010, timber harvesting has started on the cutting authority area, and

   i. the right to harvest timber remaining on the cutting authority area hereinafter referred to as the remaining timber has been transferred by the timber sales manager after July 1, 2010 on behalf of the licensee to whom the cutting permit had been issued, and

   ii. the district manager is satisfied that the remaining timber or harvest

method is significantly different from the timber that was harvested on the cutting authority area prior to the transfer of the right to harvest the remaining timber.

2. Except as provided in subsections 3 or 4 of this section, where a changed circumstance has occurred with respect to a cutting authority area, other than a cutting authority area that is subject of a road permit or a cutting authority area with a non-adjusting stumpage rate, the cutting authority area must be reappraised in accordance with section 2.2.1.1.

3. Where a licensee has notified the ministry in writing that a changed circumstance has occurred and the indicated stumpage rate for the cutting authority area has been less than $\$0.25/m^3$ since the cutting authority area was first appraised, and the indicated stumpage rate that would be calculated in a changed circumstance reappraisal would remain less than $\$0.25/m^3$, a changed circumstance reappraisal is not required.

4. Where a licensee has notified the ministry in writing that a changed circumstance has occurred, log transportation activities have been completed on the cutting authority area and the amount of stumpage payable as a result of a changed circumstance reappraisal under section 2.2.1.1 would be reduced, the changed circumstance reappraisal must be done only at the licensee's request.

5. Where a cutting authority is reappraised because of a changed circumstance, any bonus bid or bonus offer in existence does not change and remains in effect.

2.2.1.1 Changed Circumstance Reappraisal Procedure

1. Where the cutting authority was issued prior to August 1, 2005, the licensee must submit an appraisal data submission to the district manager immediately if a changed circumstance has occurred.

2. a. Except for a changed circumstance under section 2.2.1(1)(e), the licensee must submit an appraisal data submission to the district manager within thirty days of completion of log transportation activities or thirty days prior to the expiry of the cutting permit whichever comes first, if the cutting authority must be reappraised because of a changed circumstance under section 2.2.1.

   b. For a changed circumstance under section 2.2.1(1)(e), the licensee must submit an appraisal data submission to the district manager within thirty days of the date when the event that caused the sudden and severe damage stopped on the cutting authority area.

   c. Thereafter the changed circumstance procedure for paragraph (a) or (b) of this section is the same as required by section 2.1(2) to 2.1(7).

3. Where the district manager believes that a changed circumstance has occurred under subsections (1) or (2) of section 2.2.1, and the licensee fails to provide the district manager with an appraisal data submission as described in subsection (2) of this section, the district manager may initiate a changed circumstance reappraisal using information that is available to the district manager and may notify the licensee of that action. Thereafter the changed circumstance reappraisal procedure is the same procedure as that required by section 2.1(6) through 2.1(7).

2.2.1.2 Effective Date of a Changed Circumstance Reappraisal

1. Except as otherwise provided in this section, a reappraisal because of a changed circumstance is effective on the day after the effective date of the most recent appraisal or reappraisal of the cutting authority area prior to the changed circumstance reappraisal.

2. Where the cutting authority to which the reappraisal pertains was issued prior to August 1, 2005, and the date of the changed circumstance is on or after July 1, 2010, the changed circumstance reappraisal is effective on the day after the date the changed circumstance reappraisal stumpage rate is calculated.

3. Where the changed circumstance is a result of sudden and severe damage referred to in subsection 2.2.1(1)(e), the effective date of the reappraisal is the first day of the month following the date when the event that caused the sudden and severe damage stopped on the cutting authority area.

4. Where:

    a. the most recent appraisal or reappraisal is a reappraisal under section 2.2.3, the reappraisal shall be effective on the day after the effective date of the most recent appraisal or reappraisal of the cutting authority area that is not a reappraisal under section 2.2.3, or

    b. the most recent appraisal or reappraisal is a Minister's directed reappraisal under section 2.2.2, the effective date of a reappraisal under sections 2.2.1(1)(f) or 2.2.1(1)(g) is effective on the day after the date of the most recent appraisal or reappraisal of the cutting authority area that is not a reappraisal under section 2.2.2 dated July 1, 2010 or a reappraisal under section 2.2.3.

2.2.2 Minister's Direction

1. The Minister may at any time direct the determination, redetermination or variance of a stumpage rate and that,

    a. a determined, redetermined or varied stumpage rate be effective on any future date, and that,

    b. the determination, redetermination or variance be made in accordance with any other directions that the Minister may direct.

2.2.2.1 Minister's Direction Procedure

1. The licensee shall submit to the district manager an interior appraisal data submission, if requested by the district manager within forty-five days of the minister's direction.

2. Thereafter, the procedure for determining, redetermining or varying a stumpage rate under section 2.2.2 shall be the same procedure as that required by subsections 2.1(3) through 2.1(7) except as may otherwise be directed by the minister.

2.2.3 Reappraisals Due to Insect Damage

1. a. A cutting authority with an adjustable stumpage rate or a cutting authority issued under a licence entered into under Section 21 of the *Act* as it was before it was repealed may be reappraised on or after April 1, 2006 only twice under this section during the term and all extensions of the cutting authority on the basis of a revised appraisal data submission if the licensee submits a revised appraisal data submission to the District Manager.

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

    c. The licensee may either:

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

        ii. recompile the cruise data that was in the cruise in the original ADS.

d. If a cutting authority area is reappraised in accordance with section 2.2.1.1 and the effective date of the changed circumstance reappraisal is prior to a reappraisal for that cutting authority area under section 2.2.3, then cutting authority area shall be reappraised subsequent to the changed circumstance reappraisal using only the same information and effective date as the original reappraisal under section 2.2.3 (except for information that has changed as a result of the changed circumstance reappraisal under section 2.2.1).

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

2.2.3.1 Insect Damage Reappraisal Procedure

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

2.2.3.2 Effective Date of an Insect Damage Reappraisal

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

3. Development in appraised timber areas providing access to both appraised and non-appraised timber held by the licensee or a company legally associated with the licensee:

   All costs are prorated between appraised and non-appraised timber. The appraised timber portion is then included in the appraisal.

4.3.1.1.2 Development Cost Estimates on Private Land

1. When a new or reconstructed road or structure on private land is required for Crown timber extraction, the estimated cost of the road or structure will be included in the appraisal of a tributary cutting authority according to the procedures of section 4.3.1.1 and the following:

   a. If development provides access to appraised timber only, the total estimated costs are included in the appraisal.

   b. If development provides access to non-appraised timber only, cost estimates are not included in any appraisal.

   c. If development provides access to both non-appraised and appraised timber, all cost estimates are prorated between non-appraised and appraised timber (section 4.3.1.1) and then the Crown portion is included in the appraisal.

4.3.1.1.3 Existing Roads and Structures

1. The following are defined as existing roads for the cutting authority being appraised and are not eligible for inclusion in development cost estimates:

   a. Constructed roads that have been previously considered in appraisals of Crown timber within another cutting authority.

   b. Roads previously constructed and used to haul non-appraised timber (excluding right-of-way).

   c. Roads previously constructed all or in part for purposes unrelated to logging the cutting authority area being appraised.

   d. Roads previously constructed, repaired or reconstructed on private land before August 1, 1996.

2. Winter roads over muskeg or organic soils that use snow and ice for a driving surface are not considered as existing roads.

3. If the existing road requires reconstruction or replacement after August 1, 1996, the cost estimate is made as described in section 4.3.1. If the existing road is on private land, road and land use charges may be included in the appraisal as per section 4.4.1.

4. A road on private land that has previously been included in an appraisal because it was required for only short term timber extraction shall continue to be included upon reappraisal.

4.3.1.1.4 Extended Road Amortization

1. Except as provided in subsection (3), for new appraisals where the development occurring under the authority of a road permit or cutting permit for roads accessing more than one tributary cutting authority exceeds $4.00 per cubic metre, a written agreement may be made between the licensee and the regional manager, which distributes a portion of the development cost estimate to two or more tributary cutting authorities that are issued under the licence that entitled the licensee to apply for the road permit or cutting permit.

2. The agreement is subject to the following conditions:

    a. Future tributary timber included in the extended road amortization agreement must be either within the woodlot licence or an approved cutting permit or cutblocks shown in the licensee's forest development plan, woodlot licence plan or forest stewardship plan in effect on the appraisal effective date.

    b. The road portion that may be included in the agreement ends at the far boundary of the first cutting authority being appraised.

    c. The agreement must indicate the cost estimate that is being distributed to each existing or future cutting authority in the agreement.

    d. The agreement must be signed by the licensee and the regional manager.

    e. The costs apportioned to each cutting authority under the agreement may be adjusted once, in conjunction with this section, at reappraisal using the same ratio for distributing the costs as in the original agreement provided harvesting has not commenced on any of the cutting authority areas included in the agreement.

    f. Previously apportioned costs are not used to exceed the $4.00/$m^3$ in subsection (1) of this section.

    g. The agreement must provide that:

        i. It may not be changed unless by mutual agreement, and

        ii. 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.

3. The regional manager will not enter into any new extended road amortization agreements for cutting permits issued under a woodlot licence with an effective date after November 30, 2008.

For each road, the additional stabilizing material cost estimate ($/km) is determined from the equation for the appropriate road group.

Road Groups	Equation
1	Refer to section 4.3.3(5)(n)
2	8844
3	11947
4	10256 + (473 * D)
5	8414 + (322 * D)
6	10314 + (3527 * LT)
7	10314 + (3527 * LT)
8	16800 – (8491 * SBS)
9	10191
10	4484 + (3585 * D)
11	4484 + (3585 * D)
12	4484 + (3585 * D)

Where:

Road groups are defined in Table 4-1.

D = Distance in kilometres from source of ballast to the centre of the section that requires ballast (rounded to the nearest 0.1 km)

LT = 1 if a long term road, otherwise = 0

SBS = 1 if road construction is within this biogeoclimatic zone. Otherwise SBS = 0

No cost estimate for additional stabilizing material is allowed for any snow and ice roads.

4.3.2.6 Cattle Guards, Fencing and Pipeline Crossings

1. Where the installation of cattle guards, remedial fences or wing fences are required to mitigate the impacts to range barriers resulting from harvesting on the cutting authority area, the following cost estimates apply:

a.	Cattle Guards	$5085 each
b.	Remedial Fences and Wing Fences	$1002 per 100 m (post and wire, post and rail and/or log snake fence construction only)

2. For pipeline crossings, the following cost estimates apply:

	$3132 per single pipe crossing
	$1885 per pipe in multiple pipe crossings (where 2 or more pipes are crossed within the same right-of-way)

3. The cost estimates for subsections (1) and (2) include materials, transportation and installation.

4.3.3 Detailed Engineering Cost Estimates (ECE)

1. Where the tabular cost estimating procedures of this manual cannot be used due to their physical limitations, the cost of a project shall be estimated by preparing a detailed engineering cost estimate. The regional manager may approve standardized procedures to generate cost estimates for use in projects as listed below.

2. Where specific development projects involve detailed engineering cost estimates, the district manager shall be advised of project details no later than 60 days before the start of work on the project.

3. For appraisal purposes, the estimated development project costs are made on the basis of the site-specific data using the definitions found in section 4.3.2.2 for common subgrade construction variables, the culvert costs included in Table 4-2, and the equipment and labour rates specified in Appendix I. Due consideration is given to arm's length competitive bids for any specific project. The Crown is not liable for any difference between the appraisal estimate and the licensee's actual costs.

4. If the ECE is re-estimated once after construction as provided in section 2.2(3) (using more accurate on site information) the new detailed engineering cost estimate replaces the original (used in the initial appraisal). Detailed engineering cost estimates originally estimated using ministry approved competitive bids may be re-estimated once after construction provided the original call to tender included a methodology for adjusting the bid price based on more accurate site information and re-estimation of those costs is performed in accordance with that methodology. ECE's are not re-estimated due to labour and/or equipment rates being updated periodically in Appendix I.

5. Where the actual on-site information is known prior to the appraisal that information shall be used in the ECE as determined by the person who determines the stumpage rate.

6. Where road sections estimated as a detailed engineered cost estimate are contiguous with tabular cost estimates, costs for mobilization and demobilization will only be allowed for special equipment not required for the construction of the tabular roads. The costs for replacement or addition of stabilizing material must be determined

using section 4.3.2.5 unless the material is placed in conjunction with geo fabric, geo grids, corduroy or where the stabilizing material requires processing such as screening or crushing.

The following specific situations are considered for detailed engineering cost estimates:

a. New construction of long term, primary access road sections, that will have 300 000 cubic metres of harvested Crown timber hauled over them annually for at least ten years.

b. Road construction on uphill side slopes greater than 50 percent.

c. When rock percent as calculated in section 4.3.2.2(4) is greater than 50 percent, or terrain class 4 and 5.

d. End haul construction (of roads and landings) requiring removal by truck of excavated material to a separate area to avoid side casting on steep and/or sensitive sites.

e. Overland construction to provide a roadbed by trucking in material for extensive filling; see page 81 of *Forest Road Engineering Guidebook* for a more detailed description.

f. Log bridges and non-log bridges (including ice bridges) that are not included in the subgrade cost estimates. Eligible costs are described in section 4.3.3(8).

g. Structural maintenance of bridges, substructure and cribwork.

h. Reconstruction of roads and pertinent structures. Cost estimates for reconstruction are not to exceed the tabular cost for new construction under similar conditions.

i. Upgrade of roads and pertinent structures resulting in a change in the standard of the road and structure or where the licensee was not obligated to carry out road maintenance prior to the appraisal. Where road maintenance obligations exist, road upgrade is limited to widening the running surface, vertical and horizontal realignment, and additional culverts.

j. i. Replacement or addition of stabilizing material to the existing road running surface or where stabilizing material was not previously used, for uninterrupted road lengths of 0.3 km, or greater.

ii. Road lengths less than 0.3 km are included in the road management cost estimate.

k. Culverts greater than 1.8 m in diameter, or culverts greater than 30 m in length regardless of diameter. The cost estimate includes all costs of transporting the

culvert to the jobsite and all costs of installation of the culvert to the final subgrade stage.

l. Placement of additional stabilizing material where geo fabric, corduroy, crushed and/or screened rock/gravel are used.

m. Retaining walls, railway crossings and other structures (such as multiple culverts, baffled culverts, arched culverts and other structures determined by the timber pricing co-ordinator).

n. Subgrade and ballast cost estimate in road group 1, Kalum District. The subgrade and ballast cost estimate will be determined using the detailed engineering cost methodology specified by the Northern Interior Forest Region.

o. The costs of designing and constructing a forwarding road, where the timber pricing co-ordinator is satisfied that it will produce the highest stumpage rate. A forwarding road is not a trail but a road built to a designed standard which includes stripping, grubbing, stumping and primary excavation to establish subgrade that is used for transporting crews and equipment and forwarding timber but not for hauling logs.

7. The data which may be required for excavation and fill estimates are:

a. Plans, profiles, cross-sections showing the ground and design grade lines.

b. Volume summary sheets showing excavation quantities by various soil types, for subgrade and stabilization.

c. Type of construction equipment and quantity of material to be used, or ministry approved competitive bid costing.

d. Location of borrow and waste areas to calculate material haul distances.

8. The data required for bridges, culverts and for other structures are:

a. Where the bridge span is 15.4 m or less and the crib height is 5.4 m or less and a permanent structure is proposed, an economic life cycle comparison between a log structure and the permanent proposal is required.

b. Where the bridge span is greater than 15.4 m, and/or the crib height is greater than 5.4 m or more and for pipe culverts greater than 1.8 m in diameter or 30 m in length: plans, specifications and design for the proposed structure; detailed estimate of costs of materials; equipment and labour or ministry approved competitive bid pricing; amount of timber accessed by the structure and the number of years of use for harvesting all timber are required.

9. Costs that may be included in the detailed engineered cost estimate are:

a. Freight (for materials).

b. Provincial sales tax if applicable (for materials purchased prior to July 1, 2010).

c. Supervision of construction of complex structures by a professional engineer.

d. Bridge Costs

i. In addition to other costs described in this section, bridge costs may include:

- Crib back fills to a maximum distance of 15 m on either end.
- Site preparation.
- Protection features such as rip rap.
- Material and equipment supply and delivery (subject to paragraphs (ii) and (iii) in this subsection).
- Bridge certification by a professional engineer either employed by the licensee or contracted. A maximum of three field visits are permitted unless otherwise approved by the regional timber pricing co-ordinator.

ii. Where bridge materials are re-used by the original purchaser at a different site, the bridge cost estimate may include the cost of dismantling the materials at the site where they were previously used, and transportation to and installation at the different site, but may not include the initial materials and delivery costs.

iii. Where used bridge materials are purchased by the licensee from a legally non-associated party, only the cost of purchasing and transporting those materials approved by the person determining the stumpage rate may be included in the bridge cost estimate in addition to the costs listed above.

e. Site plans, designs and layouts.

f. Where equipment is not, or will not be already on site for adjoining tabular road, bridge or culvert construction, then the costs of mob and demob may be included in the engineered cost estimate.

10. GST/HST and supervision costs other than as stated above, are not to be included in the engineered estimate.

11. Where different timber volumes are used for separate cost estimates, the unit costs are rounded to the nearest cent before totalling.

12. In some cases, the detailed engineering cost estimates may be apportioned to two or more licensees' tributary cutting authorities, as described under section 4.3.1.1.4.

4.3.3.1 Trending of Detailed Engineering Costs

1. All detailed engineering costs must be adjusted to match the cost base of the manual in effect at the time of the appraisal or reappraisal (refer to Table 4-5). This includes development costs in apportionment agreements, ministry approved competitive bid tenders, and ECE's prepared using Appendix I.

2. ECE Cost Year means:

    a. For ECEs (or portion(s) thereof) which are calculated using this manual, the ECE Cost Year is 2008.

    b. For ECEs (or portions(s) thereof) which are calculated using tenders, materials costs, design and survey costs, etc. the year the costs are based on or incurred is the ECE Cost Year.

    c. Where all components of an ECE have a common ECE Cost Year, the trend factor can be directly determined from Table 4-3.

    d. For new or re-estimated (section 2.2(3)) ECEs where components of an ECE have different ECE Cost Years, it is necessary to trend all components to the Cost Base Year of the manual in effect at the time (based on the effective date of the cutting authority). The Cost Base Year then becomes the ECE Cost Year for future trending.

4.5 Basic Silviculture Cost Estimate

1. The basic silviculture cost estimate includes the cost of all activities that are required to achieve a licensee's free-growing stand obligations (except root disease control) on the cutting authority area.

   a. A basic silviculture cost estimate may not be included in the TOA unless:

      i. the licensee is obligated to establish a free growing stand, and,

      ii. the activity is not funded by another agency.

2. The area of land where an activity is to be applied that may be considered in the basic silviculture cost estimate is the gross silviculture area (GSA) for which the licensee has an obligation to establish a free-growing stand. The GSA includes the net merchantable area (NMA) from the cruise.

3. Table 4-5 lists the cost estimates ($/ha) for Biogeoclimatic Ecosystem Classification (BEC) zone, subzone, and variant combinations across the interior. Where the subzone/variant combination is not listed in the table, the BEC undifferentiated subzone "un" cost estimate is used.

4. Where a cutting authority area includes more than one BEC zone/subzone/variant combination, a prorated BEC zone/subzone/variant cost estimate will be determined by prorating the cost estimates from Table 4-5 for the primary and secondary BEC combination identified in the appraisal data submission based on their respective percent by net merchantable area identified in the appraisal data submission.

5. The basic silviculture cost estimate is calculated as follows:

$$\text{BASIC SILVICULTURE}(\$/m^3) = \frac{\left[\text{NMA} * \text{Cost} * (\text{CAPCUT}\% / 100) * 1.25\right] + \left[(\text{GSA} - \text{NMA}) * \text{Cost}\right]}{\text{NMV}}$$

Where:

NMA	=	Net Merchantable area (ha) from the cruise appraisal summary report. This area must be the same area directly attributable to the appraised net merchantable volume for the cutting authority.
Cost	=	Prorated BECzone/subzone/variant cost ($/ha) from Table 4-5.
GSA	=	Gross silviculture area (ha) within the cutting authority area for which the licensee has free-growing obligations and has not yet received a basic silviculture cost estimate in any appraisal. For the purpose of this section the GSA cannot be less than the NMA and includes any pre-harvested areas outside the NMA of a fully appraised cutting permit that the licensee is responsible for silviculture.

NMV = Net merchantable volume (m^3) for the cutting authority area from the cruise appraisal summary report.

PCUT = Partial cutting includes all forms of harvesting, other than clear cutting.

Clear cutting is defined as those areas with block opening sizes equal to or greater than 1 hectare and where the volume removal is equal to or greater than 90 percent based on the net volume measured to the Interior Standard Timber Merchantability Specifications (section 1.5).

Partial cut areas that have less than 90 percent volume removal are not to be averaged with those areas that are equal to or greater than 90 percent. Clear cut areas are to be stratified out before calculating an overall weighted partial cut percent for the cutting authority.

Where a partial cut is comprised of openings of less than 1 hectare in size, the PCUT percent is based on the cumulative volume of these openings divided by the volume of the block area surrounding them.

$$PCUT = \frac{Net\ cruise\ volume\ required\ to\ be\ removed\ using\ a\ partial\ cut\ system}{Total\ net\ cruise\ volume\ on\ the\ area\ where\ Partial\ Cutting\ is\ required} * 100$$

(except if partial cut percent > = 90%, then PCUT = 0)

CAPCUT = Cutting Authority (CA) partial cut %. If CAPCUT%>80% CAPCUT% = 80, otherwise:
CAPCUT% = (CA NMV/CA Gross NMV) * 100

CA Gross NMV(m^3) = ^{V}GS(C) + (^{V}GS(P) / GS(PCUT/100)) + ^{V}OC(C) + (^{V}OC(P) / OC(PCUT/100)) + ^{V}SK(C) + ^{V}Horse(C) + ^{V}Heli(C) + (^{V}Heli(P) / Heli(PCUT/100))

4.6 Low Grade Percent Adjustment

1. The POA low grade percent adjustment by timber species as shown in Tables 4-6 and 4-7 shall be used in the calculation of the tenure obligation adjustment to account for the timber that is priced at the statutory rate.

2. The low grade percent adjustment for each timber species to be used in the appraisal or reappraisal of the cutting authority area shall be the percent adjustment by timber species by the POA to which the cutting authority area is appraised. Where the net merchantable coniferous volume of timber on the cutting authority area is comprised of 35% or greater red and grey Mountain Pine Beetle (MPB) attacked Lodgepole pine, the adjustment from Table 4-7 is used. For cutting authorities with less than 35% red and grey MPB attacked Lodgepole pine, the adjustment is used from Table 4-6.

3. The low grade percent adjustment to be used in the calculation of the tenure obligation adjustment for a cutting authority area being appraised or reappraised is the sum of the products of the net coniferous cruise volume of each timber species in the cutting authority area multiplied by the low grade percent adjustment for that species, divided by the total net coniferous cruise volume on the cutting authority area.

4. The low grade percent adjustment does not apply to cruise based sales.

Table 4-6: Point of Appraisal (POA) Low Grade Percent Adjustment by Timber Species

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
100 Mile	0.2937	0.1624	0.0606	0.1762	0.0533	0.5544	0.1053	0.3981	0.2765
Adams Lake	0.1311	0.136	0.0408	0.1166	0.0742	0.495	0.0518	0.1574	0.2765
Armstrong	0.2324	0.264	0.0471	0.1526	0.0691	0.4421	0.0751	0.3897	0.2765
Bear Lake	0.2747	0.218	0.2397	0.1204	0.1036	0.7641	0.1549	0.3981	0.2765
Boston Bar	0.105	0.4495	0.0376	0.1762	0.0529	0.2944	0.0495	0.3981	0.2765
Burns Lake	0.2023	0.218	0.0529	0.1204	0.1036	0.5739	0.1188	0.3981	0.2765
Canal Flats	0.1017	0.0973	0.1041	0.0513	0.1291	0.0993	0.0502	0.0222	0.2636
Canoe	0.3751	0.307	0.0302	0.414	0.055	0.4713	0.1036	0.1983	0.2765
Carnaby	0.3728	0.0803	0.0615	0.3247	0.1036	0.3568	0.1477	0.3981	0.2765
Castlegar	0.404	0.1662	0.0901	0.3033	0.0977	0.3488	0.1775	0.5194	0.2765
Chetwynd	0.1723	0.218	0.0615	0.3484	0.1036	0.1705	0.0671	0.3981	0.2765
Chasm	0.1262	0.4495	0.0777	0.1762	0.0533	0.575	0.0805	0.3981	0.2765
Clear Lake	0.3166	0.218	0.0451	0.1204	0.1036	0.7535	0.1334	0.3981	0.2765
Craigellachie	0.2901	0.364	0.0335	0.4372	0.1027	0.5031	0.1441	0.3985	0.2765
Cranbrook	0.0923	0.0328	0.0993	0.3042	0.1057	0.0909	0.0484	0.0166	0.2765
Creston	0.1412	0.0637	0.0519	0.0445	0.1397	0.0808	0.0668	0.0966	0.1472
Elko	0.1338	0.2194	0.1579	0.0916	0.2051	0.1124	0.0663	0.0543	0.2866
Engen	0.1855	0.218	0.0529	0.1204	0.1036	0.6888	0.1571	0.3981	0.2765
Fort Nelson	0.2008	0.218	0.0615	0.3484	0.1036	0.1996	0.1567	0.3981	0.2765
Fort St. James	0.2826	0.218	0.1444	0.1204	0.1036	0.7293	0.1622	0.3981	0.2765
Fort St. John	0.1733	0.218	0.0615	0.3484	0.1036	0.1817	0.0795	0.3981	0.2765
Fraser Lake	0.1855	0.218	0.0529	0.1204	0.1036	0.6888	0.1571	0.3981	0.2765
Galloway	0.0923	0.0328	0.0993	0.3042	0.1057	0.0909	0.0484	0.0166	0.2765
Grand Forks	0.3241	0.0952	0.0727	0.2646	0.087	0.1075	0.1444	0.5315	0.2765
Hazelton	0.3728	0.0803	0.0615	0.3247	0.1036	0.3568	0.1477	0.3981	0.2765
Houston	0.3243	0.218	0.0529	0.1204	0.1036	0.5814	0.1707	0.3981	0.2765
Isle Pierre	0.2475	0.218	0.0828	0.1204	0.1036	0.5849	0.1322	0.3981	0.2765
Kamloops	0.522	0.1704	0.0616	0.2262	0.0477	0.5757	0.1467	0.3998	0.2765
Kelowna	0.274	0.3833	0.0621	0.3042	0.1035	0.222	0.0812	0.3998	0.2765
Kitwanga	0.3916	0.1474	0.0615	0.412	0.1036	0.1219	0.0836	0.3981	0.2765
Lavington	0.3124	0.1617	0.0839	0.2598	0.0876	0.4463	0.0982	0.5883	0.2765
Lillooet	0.105	0.4495	0.0376	0.1762	0.0529	0.2944	0.0495	0.3981	0.2765
Louis Creek	0.2502	0.1608	0.0711	0.3239	0.0426	0.5056	0.1097	0.3998	0.2765
Lumby	0.3084	0.2432	0.0532	0.21	0.0914	0.4606	0.1089	0.4693	0.2765
Lytton	0.105	0.4495	0.0376	0.1762	0.0529	0.2944	0.0495	0.3981	0.2765
McBride	0.2721	0.3227	0.103	0.6054	0.1038	0.2175	0.1372	0.3998	0.2765
Mackenzie	0.186	0.218	0.0529	0.1204	0.1036	0.405	0.1021	0.3981	0.2765
Merritt	0.1276	0.2194	0.0722	0.0863	0.0493	0.2648	0.0771	0.3998	0.6689
Midway	0.2233	0.199	0.0737	0.2139	0.0705	0.1605	0.1521	0.685	0.2765
Okanagan Falls	0.19	0.2194	0.0858	0.3042	0.0818	0.2447	0.0986	0.3998	0.2765
Park Siding	0.2959	0.0814	0.0393	0.1637	0.0408	0.2216	0.1476	0.2844	0.2765
Prince George	0.2475	0.218	0.0828	0.1204	0.1036	0.5849	0.1322	0.3981	0.2765
Princeton	0.1295	0.2194	0.0765	0.0894	0.0683	0.2716	0.084	0.3998	0.6779
Quesnel	0.171	0.218	0.0309	0.1204	0.1036	0.5465	0.0772	0.3981	0.2765
Radium	0.1321	0.2152	0.058	0.1589	0.1382	0.0937	0.0609	0.4166	0.1553
Revelstoke	0.2368	0.3207	0.0325	0.4461	0.1433	0.0947	0.1379	0.4184	0.2765
Slocan	0.3049	0.1309	0.0385	0.1828	0.0546	0.2601	0.0603	0.3966	0.2765
Smithers	0.4224	0.218	0.0529	0.1044	0.1036	0.4668	0.1301	0.3981	0.2765
Squamish	0.105	0.4495	0.0376	0.1762	0.0529	0.2944	0.0495	0.3981	0.2765
Strathnaver	0.2382	0.218	0.0854	0.1204	0.1036	0.7126	0.106	0.3981	0.2765
Taylor	0.1733	0.218	0.0615	0.3484	0.1036	0.1402	0.0645	0.3981	0.2765
Terrace	0.2073	0.1566	0.0615	0.3946	0.1036	0.0207	0.0382	0.3981	0.2765
Thrums	0.3779	0.1737	0.0561	0.232	0.0834	0.2257	0.1198	0.5192	0.2765

the rate approved by the Regional Manager.

c. i. Where the cutting authority is a forestry licence to cut issued for the purpose referred to in paragraph (a)(ii) of this subsection and it is awarded directly to the holder of a Ministry site preparation or site rehabilitation contract that was awarded to the lowest eligible bidder, the coniferous sawlog stumpage rate for all timber harvested on the cutting authority area will be $\$1.20/m^3$.

ii. Where the cutting authority is a forestry licence to cut awarded directly to the holder of a Ministry site preparation or site rehabilitation contract that was awarded to the lowest eligible bidder, and it does not meet the criteria described in paragraph (a)(ii) of this section, then the stumpage rate shall be determined using the procedures in chapters 2, 3, 4 and 5.

iii. Where the stumpage rate is determined in accordance with paragraph (c)(ii) of this subsection, the cruise data that is used in the appraisal may be from the cruise of a comparable cutting authority as per section 1.5.1.

iv. Notwithstanding paragraphs (i) or (ii) of this subsection, where the timber from the cutting authority in paragraph (i) or (ii) will be scaled as chips or hogged tree material on site the stumpage rate shall be the prescribed minimum stumpage rate.

2. An upset stumpage rate determined under this section must be calculated using the *Interior Appraisal Manual* in effect on the date that the rate is determined.

3. An upset stumpage rate determined under paragraphs (a)(i), (a)(ii) or (b) of subsection (1) shall not be less than the district's variable cost to prepare the timber for sale.

4. Except as provided in subsections 1(c)(i) or (ii) of this section, where the upset stumpage rate or stumpage rate is determined under this section, the rate shall apply to all species and grades of timber.

5. Except as provided in section 2.2.2, where the upset stumpage rate or stumpage rate is determined under this section, the total stumpage rate is fixed for the term of the cutting authority and all extensions.

6.3 Road and Blanket Salvage Permits

1. a. In this section the area of a forest district or the area of a timber supply area does not include the area of a park located within that district or timber supply area.

   b. In this section the area of a Tree Farm Licence will be included in the area of the district or timber supply area in which it is geographically located.

2. Except as provided in 6.1.2(3) and (5) and subsections (3) and (4) of this section, the stumpage rate for a road permit or a blanket salvage permit shall be the weighted average sawlog stumpage rate:

   a. from the table provided to the regions by Pricing Branch for all cutting authorities, authorizing harvesting on cutting authority areas that have been fully appraised, that authorize the harvesting of timber in the same forest district in which the road or blanket salvage permit cutting authority area is located, and that are issued under the licence that entitles the licensee to apply for the road or blanket salvage permit, if there is a minimum positive billed volume of 500 cubic metres of coniferous sawlogs from which the weighted average sawlog stumpage rate may be determined, or

   b. the stumpage rate is the stumpage rate prescribed in Table 6-3 for the smaller of the area of the same forest district or the area of the same timber supply area in which the road permit or blanket salvage permit cutting authority area is located.

3. The bonus bid if applicable will be added to the stumpage rate determined under subsection 2(b).

Table 6-3 Coniferous Average Sawlog Stumpage Rates by Smallest Geographic Unit

TSA is Smallest Geographic Unit			
District	**Rate ($/m^3)**	**TSA**	**Rate ($/m^3)**
Arrow Boundary	12.60	Arrow	12.65
		Boundary	12.44
Cascades	9.71	Merritt	9.88
		Lillooet	1.01
Columbia	3.32	Golden	0.28
		Revelstoke	4.92
Headwaters	10.08	Robson Valley	7.71
Kalum	1.50	Nass	2.05
		Kalum	1.48
Nadina	7.20	Lakes	7.54
		Morice	7.04
Peace	5.54	Dawson Creek	4.56
		Fort St. John	7.08
Rocky Mountain	5.68	Cranbrook	5.34
		Invermere	6.04
Skeena Stikine	12.14	Bulkley	13.79
		Kispiox	6.97
		Cassiar	0.25

6.6 Miscellaneous Stumpage Rates

1. Unless otherwise specified in this manual, the stumpage rates, at the time of scale for timber harvested for the purposes described, in the districts listed, in the forest district specific section of Table 6-6 are as prescribed in that table. This table does not apply to cruise based cutting authorities.

Table 6-6 Miscellaneous Stumpage Rates

All Interior Forest Regions

Species	Code [1]	Product	Reserve Stumpage Rate
All Species	SB	Shake & Shingle Bolts, Blocks and Blanks.	$5.30/m^3
All Species	SK	Shakes	$6.00/m^3
Cedar	PR	Posts & Rails (Split and Round)	$3.00/m^3
All other Species	PR	Posts & Rails (Split and Round)	$1.20/m^3
All Species	MT	Mining Timbers	$3.00/m^3
All Species	FW	Firewood	$0.50/m^3
Yew		All	$0.25/m^3
All Species	CH	Wood chips from post-harvest material where a waste assessment has been made	$0.25/m^3
All Species	HF	Hogged tree material from post-harvest material where a waste assessment has been made	$0.25/m^3
All Species		Grades 4 and 6, except where the upset stumpage rate is determined under section 6.2.1(1)(a) and (b), 5.1.1(5)(a) and (b)	$0.25/m^3
Deciduous Species		All, except grades 4 and 6 and except where the upset stumpage rate is calculated under section 6.2.1(1)(a) and (b), 5.1.1(5)(a) and (b)	$0.50/m^3
All Species	SS	Stakes & Sticks.	$1.20/m^3
All Species	XM	Christmas Tree: under 3m 3-5 m over 5 m	$0.20/each $1.00/each $1.50/each
All Species		Logs salvaged below the high water levels of Reservoir Lakes and the Slocan, Kootenay, Mineral, Babine and Ootsa Lakes	$0.25/m^3
All Species		Marine Beachcomb	$0.70/m^3
All Coniferous		For logs harvested from the following Research Forests: Alex Fraser (UBC), Aleza Lake (UBC and UNBC), College of New Caledonia (CNC), and Fort St. James (UNBC)	$0.25/m^3
All Species		Firmwood Reject	NIL

[1] Special Forest Product as identified in section 94(3) of the *Act* and described in the *Scaling Manual*.

Forest District Specific

Description of Activity	Forest District	Reserve Stumpage Rate
New Crown land area disturbed for mining exploration trails, seismic lines[1], gas or oil well sites and right-of-way to well sites. [2]	Rocky Mountain Peace Ft. Nelson Mackenzie	$1,600/ha $913/ha $836/ha $898/ha

[1] The corresponding district reserve stumpage rate from the above table is adjusted according to the category of line clearing as follows:

Category 1 - no adjustment
Category 2 - 1/2 of the reserve stumpage rate
Category 3 - 1/3 of the reserve stumpage rate

The gross area for each category reported as new line on either; the Oil and Gas Commission's Geophysical Final Plan cover sheet or an As Cleared Plan is multiplied by the reserve stumpage rate as adjusted above (refer to Appendix V for category definitions).

[2] For pipe line rights-of-way a stumpage rate must be determined by using the above rates for cutting authorities containing 2 000 m^3 or less, of merchantable coniferous volume. For pipe line rights-of-way cutting authorities greater than 2 000 m^3 see section 6.7.

6.6.1 Miscellaneous Stumpage Rates for Timber Licences

Timber licence cutting authority areas that have not been appraised and have a cutting authority term that began before May 1, 1995, must be appraised effective April 1, 2003.

6.7 Linear Tenures

1. For this section:

   "Linear tenures" means a licence to cut issued for:

   - A right-of-way to a mine site, or
   - A mining exploration trail in a district other than Fort Nelson, Peace, Mackenzie, Rocky Mountain, or
   - A pipeline right-of-way where the volume of timber on the cutting authority area is greater than 2 000 cubic metres, or
   - A pipeline right-of-way where the volume is 2 000 m3 or less in a district other than Fort Nelson, Peace, Mackenzie, or Rocky Mountain, or
   - A hydro transmission line, or
   - A highway right-of-way for a road administered by the *Ministry of Transportation*, or
   - A forestry licence to cut issued under section 47.6(3) of the *Act* in conjunction with a BCTS road development contract, or
   - A fence line or protection of a fence line administered by the ministry under the *Range Act*.

   "Licensee" means the licensee who has been issued a linear tenure.

2. The stumpage rate for a linear tenure shall be the stumpage rate prescribed in Table 6-3 for the smaller of the area of the Forest District, Timber Supply Area or Region in which the entire cutting authority area for the linear tenure is located.

3. The costs of roads constructed on the cutting authority area for a linear tenure are only eligible for inclusion as part of the development cost estimate in the licensee's first fully appraised tributary cutting authority area if those costs were not used in a full appraisal under subsection (4) of this section.

4. a. Notwithstanding any other subsection in this section the stumpage rate for a linear tenure may be determined through a full appraisal.

   b. Where the stumpage rate is determined in accordance with this subsection, the cruise data that is used in the appraisal may be from the cruise of a comparable cutting authority as per section 1.5.1.

5. A stumpage rate determined under this section shall be fixed for the term of the linear tenure and all extensions.

6.8 Controlled Recreation Areas (CRAs)

1. The sawlog stumpage rate for coniferous timber harvested under any cutting authority issued for a cutting authority area within a CRA is the stumpage rate approved by the Director for each quarter.

2. The stumpage rate determined under this section is redetermined on the anniversary date of the cutting authority in accordance with this section.

3. Notwithstanding any other subsection in this section, the stumpage rate may be determined through a full appraisal.

6.9 Cruise Based Stumpage Calculations

1. Pursuant to section 106 of the *Forest Act*, and subject to subsection 2 of this section, the amount of stumpage payable on Crown timber will be calculated using information provided by a cruise of the timber before it is cut where the timber is authorized for harvest:

   a. Under a cutting authority issued or entered into prior to June 1, 2010 where:

      i. the stumpage rate is adjustable,

      ii. the net merchantable coniferous volume of timber on the cutting authority area is comprised of 35% or more red and grey Mountain Pine Beetle (MPB) attacked Lodgepole pine, and

      iii. timber harvesting has not started on the cutting authority, or,

   b. Under a cutting authority issued or entered into on or after June 1, 2010 where:

      i. the stumpage rate is adjustable,

      ii. The licensee applied for a cutting permit and submitted an appraisal data submission to the District Manager before June 1, 2010, and,

      iii. The net merchantable coniferous volume of timber on the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine, or,

   c. Under a cutting authority issued or entered into on or after June 1, 2010 where:

      i. the licensee submitted an appraisal data submission to the District Manager on or after June 1, 2010, and

      ii. the net merchantable coniferous volume in each cutblock within the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine, or,

   d. Under a timber sale licence with a fixed stumpage rate, which meets the criteria set out in the Memorandum of Understanding between the former Revenue Branch and BC Timber Sales dated January 6, 2010 as it may be amended from time to time, and the calculation of the stumpage payable using information provided by a cruise is approved by the Executive Director, Field Operations, or

   e. Except as provided in subsection 5 of this section, under a cutting authority for which a timber mark listed in Table 6-7 has been issued and timber harvesting has not started.

2. Except as provided in subsections (3) and (4) of this section and section 5.1.3(4), the stumpage rate effective July 1, 2010 for a cutting authority where the stumpage payable is cruise based shall be calculated as stand as a whole in accordance with the following:

   a. the stumpage rate is determined using chapters 1, 2, 3, 4 and 5 of this manual,

   b. the stumpage rate determined under paragraph (a) of this subsection shall apply to the net merchantable volume on the cutting authority area.

3. Except as provided in subsections (4) and (5) of this section, if, after a reappraisal under section 2.2.3 of this manual:

   a. the net merchantable coniferous volume in each cutblock within the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine, and

   b. timber harvesting has not yet started on the cutting authority area,

   The stumpage payable may be cruise based.

4. Where a timber sale licence was entered into under section 21 of the *Act* as that section was before it was repealed that provides for cutting permits and included a bonus bid, the stumpage payable will remain scale based.

5. Where a non-replaceable forest licence (NRFL) or a forestry licence-to-cut (FLTC) was advertised on the basis of competition, and the successful bidder's bonus bid only applied to the sawlog portion of the volume advertised, the stumpage payable for cutting permits issued under these licences shall remain scale based.

6. Where the sawlog volume of a cutting authority was advertised on the basis of competition and

   a. The cutting authority was issued prior to June 1, 2010, and

   b. The stumpage payable is cruise based,

   The bonus bid shall be prorated by the person who determines the stumpage rate using Tables 4-6 or 4-7 of this manual as per section 4.6.

Appendices

Appendix I Equipment and Labour Rates

(Cost Base July 1, 2008)

MACHINE DESCRIPTION	TYPICAL MODEL	$/HOUR
Crawler Tractor	Cat D9R/T, Komatsu D275AX-5	294.55
Crawler Tractor	Cat D9N (years: 1995 thru 1999)	267.80
Crawler Tractor	Cat D8T, Komatsu D155AX-5B, Deere 1050C	224.65
Crawler Tractor	Cat D7RII, Komatsu D65/85/87, Deere 950C	192.30
Crawler Tractor	Cat D6, Dresser TD15H, Komatsu D61	152.85
Crawler Tractor	Cat D5, Case 1150H, Komatsu D37/39/41	128.30
Rock Drill (includes labour)	Compressor: 750 cfm on tank chassis (includes Tank Drill outfit)	234.94
Grader	Cat 140H, Deere 772, Case 885	139.10
Front End Loader (Gravel)	Cat 966GII, Komatsu WA450~~-3~~, Case 921C	159.05
Front End Loader (Logs)	Cat 972GII, Komatsu WA500, Volvo L180E	184.40
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 345 BL/CL/DL, Komatsu PC400LC-7	271.21
Hydraulic Excavator incl. Brush Guard & Thumb	Komatsu PC300 HD	223.25
Hydraulic Excavator incl. Brush Guard & Thumb	Hitachi ZX350LC, Komatsu PC300/308	196.85
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 325CL, Hitachi ZX270LC, Deere 270CL	180.40
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 322CL, Komatsu PC220LC, JD 230CLC	166.71
Hydraulic Excavator incl. Brush Guard & Thumb	Cat 320CL, Hitachi ZX200LC~~-5~~, JD 200C-LC	155.76
Gradall	Cat M325D L MH	180.20
Logging Truck (Highway)	All Triaxle (6axle) tandem tractor & lowbed w/ booster	113.40
Self Loading Log Truck	Highway log truck + 5 tonne deck crane	126.50
Gravel Truck	10.7 m^3 (14 cu. yd.)	97.46
Gravel Truck Articulated (labour included)	25 - 30 tonne: Cat 730, Deere 300D	171.65
Gravel Truck Articulated (labour included)	20 - 24 tonne: Cat 725, Terex TA25	154.50
Lowbed	5 axle unit: tandem tractor and lowbed	102.50
Concrete Mix Truck	6.1 m^3 (8 cu yd)	99.95
Concrete Vibrator (labour not included)	3.65 m – 6.10 m (12' to 21')	5.08
Concrete Mixer (labour not included)	0.17 m^3 (6 cu ft)	7.71
Crane - Truck Mounted	18 tonne	111.55
Soft Track Skidder	KMC/FMC 2100/2400 (out-of-date model)	147.10
Rubber Tired Skidder	Clark F/H-66 TJ 360D (out-of-date model)	102.15
Vibrator Compactor	Cat 515 plus 2.7 t to 3.6 t roller	116.80
Tractor and Grid Roller	Cat 515 plus grid roller	117.65
Labourer	Group I: Includes 40% payroll loading	34.13
Roadman	Group II: Includes 40% payroll loading	34.42
Crib/Culvert Maker, Powderman	Group VII: Includes 40% payroll loading	36.14
Landingman	Group VIII: Includes 40% payroll loading	36.61
Rockdriller & Powderman (for load & blast only)	Group VII & XI: Includes 40% payroll loading	78.70
Bridgeman	Tradesman: Includes 40% payroll loading	43.40
Powersaw (labour not included)	All: one man, 20 inches + bar	3.65
Faller, including powersaw cost	Includes 40% payroll loading	64.63

Sources:

2008 B.C. Road Builders & Heavy Construction Association, Equipment Rental Rate Guide (rates based on a 3-year old machine), and IWA agreement rates including payroll loading.

Appendix VI July 1, 2010 Stumpage Rates and October 1, 2010 to July 1, 2012 Stumpage Rate Adjustments

1. Except as provided in 1(d) or 1(e), the stumpage rate for a cutting authority with an adjustable stumpage rate and an initial appraisal effective date prior to July 1, 2010 (except for those issued under section 21 of the *Act* before it was repealed) will be adjusted each quarter after July 1, 2010 in accordance with the following:

   a. For cutting authorities described in this section that are scale based, the stumpage rate effective July 1, 2010 shall be:

      Stumpage Rate = FEWB – TOA + (EPTAS * TF) + FNA

      Definitions for the variables in the above equation are in section (3) of this appendix.

   b. For cutting authorities described in this section that are being converted to cruise based, the stumpage rate effective July 1, 2010 shall be:

      Stumpage Rate = FEWB – TOA + (EPTAC * TF) + FNA

      Definitions for the variables in the above equation are in section (3) of this appendix.

   c. For each stumpage adjustment quarter, the calculation of the FEWB, TOA and FNA will use the procedures in this manual and appraisal parameters published by the director for that quarter. The TF will follow the schedule in Table A6-1. EPTAS and EPTAC remain fixed.

   d. Where a cutting authority described in 1(a) is reappraised on or after July 1, 2010 and the effective date of the reappraisal is on or after July 1, 2010, the EPTAS or EPTAC used under 1(a) or 1(b) shall remain the same. If the cutting authority is converted to cruise based as a result of the reappraisal, then EPTAC = EPTAS.

   e. If the effective date of the reappraisal is prior to July 1, 2010 the EPTAS or EPTAC used in 1(a) or 1(b) will be recalculated based on the data in the reappraisal.

2. a. Except as provided in 2(b), the stumpage rate for a cutting authority with an adjustable stumpage rate and an initial appraisal effective date of July 1, 2010 or later will be adjusted each quarter after July 1, 2010 in accordance with the following:

      Stumpage Rate = FEWB – TOA + (NPTA * TF) + FNA

      For the purposes of this section, selling price zones 7OK and 7SE are defined as per Table 3-3.

   b. Where a cutting authority described in 2(a) is reappraised on or after July

1, 2010 the NPTA calculated in 2(a) will be recalculated based on the data in the reappraisal.

c. For each stumpage adjustment quarter, the calculation of the FEWB, TOA and FNA will use the procedures in this manual and appraisal parameters published by the director for that quarter. The TF will follow the schedule in Table A6-1. NPTA remains fixed.

Table A6-1 Transition Factor

Quarter	Factor
July 1, 2010	1
October 1, 2010	0.875
January 1, 2011	0.75
April 1, 2011	0.625
July 1, 2011	0.5
October 1, 2011	0.375
January 1, 2012	0.25
April 1, 2012	0.125
July 1, 2012	0

3. Definitions for this Appendix:

"COPIR" means the OPIR converted to stand as a whole cruise based cutting authorities.

$$COPIR = OPIR * (1-LGF) + 0.25 * LGF$$

"EPTAC" means the existing permit transition adjustment for cruise based permits.

$$EPTAC = COPIR – (FEWB – TOA)$$

"EPTAS" means the existing permit transition adjustment for scale based permits.

$$EPTAS = OPIR – (FEWB – TOA)$$

"FEWB" means the final estimated winning bid from section 3.4 of this manual.

"FNA" means the final neutrality adjustment from quarterly appraisal parameters published by the director.

"LGF" means the low grade fraction calculated as in section 4.6 of this manual. The LGF is not the same as the low grade percent adjustment (LG), which does not apply to cruise based sales. The LGF does apply to cruise based sales and is calculated with the same methodology as LG in section 4.6.

"NPTA" means the new permit transition adjustment from Table A6-2, prorated by appraised species volume. For the purposes of this calculation, zones 7OK and 7SE are defined as per Table 3-3.

"OPIR" means the old policy indicated rate which is the indicated stumpage rate (ISR, section 5.6.1) using the policies and procedures in the IAM effective June 30, 2010, and the appraisal data in effect June 30, 2010 except that the quarterly appraisal parameters used in the calculation of the ISR shall be the parameters for July 1, 2010.

"TF" means the transition factor from Table A6-1.

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