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Ministry of Forests, Lands and Natural Resource Operations Minister's Office

MEMORANDUM

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To: Interior Regional Executive Directors

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

I hereby approve the new *Interior Appraisal Manual* effective July 1, 2015.

A list of the changes by section is in the attached "Highlights" document. The manual is available at the following link:

http://www.for.gov.bc.ca/hva/manuals/interior.htm

Further amendments or revisions to this manual require my approval.

Steve Thomson
Minister

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New 2015 Interior Appraisal Manual Highlights

The July 1, 2015, *Interior Appraisal Manual* has been updated to a cost base of 2012/13. Changes by section as compared to the 2014 IAM are:

Section, Table, or Appendix Number	**Description**
1.4	Adds cruise-based salvage cutting authority entered into under a timber sale licence.
1.5.1.1 (4)	Updated section reference.
2.4	Revised text.
3.1(1)	Updated section reference.
3.2.2, Table 3-1	Updated zonal LRF Update Add-ons.
3.3	Updated Estimated Winning Bid Variables definitions.
3.3.1	Revised haul method text.
3.3, Table 3-2	Updated (Proxy) District Average Number of Bidders.
3.3, Table 3-3	Updated zonal average cutting permit volumes. Revised footnote.
3.4	Updated Estimated Winning Bid equation.
3.5	Revised Point of Appraisal text.
3.5.1	Revised section title and reference.
3.5.2	Revised Secondary Cycle Time text.

3.6.1	Updated water transportation cost estimates.
3.6.2	Updated special transportation system cost estimates.
3.6.3	Updated camp cost estimates, and revised text.
3.6.4	Updated skyline cost estimate.
3.6.5	Updated heli specified operation cost estimate.
3.6.7	Updated high development cost estimate.
3.7	Updated CPI cost base (2012/13).
4.2.1	Updated Forest Management Administration (FMA) cost estimate, and revised text.
4.3, 4.3.1	Revised development cost text.
4.3.2.2	Revised text, and updated biogeoclimatic zone abbreviations.
4.3.2.3	Updated road group subgrade cost estimate equations, and cost estimate for snow and ice roads.
4.3.2.4, Table 4-2	Updated culvert cost estimates.
4.3.2.5	Updated road group stabilizing material cost estimate equations.
4.3.2.6	Updated cost estimates for fencing and pipeline crossings.
4.3.3(3)	Revised text for equipment and labour rate cost estimate purposes.
4.3.3(7)(j)	Added blasting and major switchback realignment minimum length specification to upgrade of roads and pertinent structures.
4.4, Table 4-4	Updated road management cost estimates.
4.5, Table 4-5	Updated BEC basic silviculture cost estimates. MSxk1 added.

4.6, Tables 4-6 & 4-7	Updated tables for Point of Appraisal Low Grade Percent Adjustment.
4.7	Updated equation for Market Logger Cost and CPI cost base.
4.8	Updated Return to Forest Management factor.
4.9	Updated Final Tenure Obligation Adjustment equation.
5.1(2) & (3)	Revised Section 47.6(3) forestry licence to cut text.
5.1.2 & 5.1.3	Revised to be consistent with Section 6.4.3.
6.1	Added section reference.
6.1.3 & 6.3, Table 6-3	Revised smallest unit text.
6.4.1	Revised section title and text.
6.4.2	Revised text and section reference.
6.4.3	Revised text includes addition of TSLs, and revised stand-as-a-whole equation.
6.4, Table 6-6	Added TSL Base Rate ($/$m^3$) column and footnotes.
6.6, Table 6-7	Updated per hectare clearing rates.
6.9	Revised section reference.
Appendix I	Updated equipment and labour rates.
Appendix II	Revised title and section references.
Appendix III – last page	Updated sub-table with new titles.
Appendix IV	Revised appraisal map text.
Appendix VII	Revised Amortization Agreement Form.

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TIMBER PRICING BRANCH

Interior Appraisal Manual

Effective July 1, 2015

Includes Amendments **Effective Date**

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1 Introduction

1.1 Definitions

In this manual:

"**AAC**" means Allowable Annual Cut;

"**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:

1. Except as provided in sections 2.2.1(2)(e) and 4.3(12), and subject to paragraph (2) of this definition, where the harvesting is authorized on a cutting authority area under an agreement other than a BCTS licence, the Total Net Coniferous Volume

2. Where the cutting authority is cruised based and the deciduous timber has not been reserved, the Total Net Cruise Volume

3. Where the harvesting is authorized on a cutting authority area under a BCTS licence, the Total Net Cruise Volume;

"**Appraisal Data Submission** (**ADS**)" means the information required by the person who determines the stumpage rate to determine the stumpage rate including the forest professional's signed submission in the form required by the director, and any other information required by the regional manager or district manager;

"**Appraisal Summary Report**" means the appraisal summary report from the cruise compilation for the cutting authority area;

"**Attack Volume**" means the volume of green, red, grey or other insect attack reported in the appraisal summary report;

"**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 Timber Pricing Branch of log scale data reported on stumpage invoices issued by the Timber 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*;

"**Changed Circumstance Certification**" means, for purposes of Section 2.2.1(1), a Changed Circumstance Certification statement signed by a forest professional;

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

"**Comparative Cruise**" means cruise data that is used for a new cutting authority area being appraised that comes from another existing cutting authority area with similar stand and terrain characteristics;

"**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 the cutting authority being appraised, 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 Timber Pricing Branch of the Ministry of Forests, Lands and Natural Resource Operations;

"**District Manager**" means:

1. Except as provided in paragraph (2) of this definition, the district manager or district manager's designate,

2. Where the cutting authority area being appraised or reappraised is located in a controlled recreation area designated under the Resort Timber Administration Act, then district manager means an employee of the Ministry, to whom the Minister has delegated the minister's powers and duties under section 2 of the Resort Timber Administration Act;

"**Effective Date**" means, unless otherwise specified in the manual:

1. the date the stumpage rate is determined when required for advertising for competitive award,

2. the effective date of the cutting authority when the stumpage rate is determined for a cutting permit or a direct award licence;

3. for the purposes of section 103(3) of the *Forest Act*, in respect of Crown timber that was cut, damaged or destroyed without authorization contrary to section 52(1) of the *Forest and Range Practices Act*, or damaged or destroyed within the meaning of section 27(1)(c) of the *Wildfire Act*, the day immediately preceding the date when the timber was cut, damaged or destroyed; or

4. for the purposes of section 103(3) of the *Forest Act*, in respect of Crown timber that was removed without authorization contrary to section 52(3) of the *Forest and Range Practices Act*, the date when the timber was removed;

"**ECAS**" means the ministry's Electronic Commerce Appraisal System;

"**Executive Director**, **BCTS**" means Executive Director, BCTS or Executive Director, BCTS' designate;

"**First Fully Appraised Tributary Cutting Authority Area**" means the first tributary cutting authority area to have its appraisal submitted by the licensee in ECAS;

"**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;

"**Forest Professional**" means a Registered Professional Forester (RPF), a Registered Forest Technologist (RFT) or a special permit holder acting within the scope of their permit, registered and in good standing with the Association of British Columbia Forest Professionals;

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

"**GAS**" means the ministry's General Appraisal System;

"**Harvest Method**" means ground skidding, overhead cable, helicopter or horse;

"**Harvest Method Volume**" means the net merchantable volume reported for the harvest method in the appraisal summary report;

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

"**Interior Area**" means the North and South Areas;

"**Licensee**" means the holder of a cutting authority;

"**Manual**" means *Interior Appraisal Manual*;

"**Minister**" means Minister of Forests, Lands and Natural Resource Operations;

"**Ministry**" means Ministry of Forests, Lands and Natural Resource Operations;

"**Net Merchantable Area**" means the net area for all treatment units reported in the appraisal summary report;

"**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;

"**North Area**" means Northeast, Omineca, and Skeena Regions excluding that portion that lies geographically within the North Coast Timber Supply Area;

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

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

"**Reconstruction or 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 a regional executive director of the Ministry or except for section 1.2.1(1)(b), 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;

"**Scale Based**" means the stumpage payable is based on a scale of the timber harvested from the cutting authority area 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;

"**Skyline System**" means a cable logging system used to fully suspend logs for protection of the soil, for crossing streams without damage, or to yard logs for long distances. Skyline systems may use intermediate supports to reduce the sag in long cables;

"**South Area**" means Cariboo, Kootenay-Boundary and Thompson-Okanagan Regions;

"**Species Net Volume**" means the species net merchantable volume reported in the appraisal summary report;

"**Stand as a Whole (SAAW) Pricing**" means that one stumpage rate is determined for all of the Total Net Coniferous Volume of timber on the cutting authority area. In a cruise based cutting authority, the single stumpage rate applies to the Total Net Cruise Volume;

"**Stud Log Percent**" means the species 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:

1. BC Consumer Price Index,
2. US Dollar Exchange rate,
3. Lumber Average Market Values;

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

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

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

"**Total Net Coniferous Volume**" means the sum of all the coniferous species net volumes reported in the appraisal summary report;

"**Total Net Cruise Volume**" means the sum of all the species net volumes reported in the appraisal summary report;

"**Total Net Deciduous Volume**" means the sum of all the deciduous species net volumes reported in the appraisal summary report;

"**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

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 Interior Area and Manning Park.

1.2.1 Responsibility for Stumpage Determination

1. The following employees are authorized to determine, redetermine and vary stumpage:

    a. director and employees of Timber Pricing Branch of the Ministry.

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

2. The employees of the Timber Administration section, Resort Development Branch of the Ministry 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 Timber Pricing Branch.

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

3. The parameters are published by Timber 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 or an upset determined using this manual must not be less than the prescribed minimum stumpage rate.

1.3 Numbering and Calculation

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. Unless otherwise specified in this manual, 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.

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

1.4 Cutblocks within a Cutting Authority Area

1. Cutblocks within a cutting authority area must:

    a. Each be a single unit,

    b. Each be within the same forest district,

    c. Collectively be tributary to the same common point of appraisal as chosen in accordance with section 3.5 (unless they are to be included in a blanket salvage cutting authority), and

    d. Each not exceed a maximum distance of ten kilometres between the furthest boundaries of the furthest cutblocks, except when included in a blanket salvage cutting authority or a cruise-based salvage cutting authority entered into under a timber sale licence in section 6.4.3.

2. A cutting authority must not include both a cutblock where 35% or more of the Total Net Coniferous Volume[1] is red and grey Mountain Pine Beetle attacked Lodgepole pine and an authorization to harvest on a cutblock that does not have those same characteristics.

[1] As indicated in the appraisal summary report from the cruise compilation.

1.5 Appraisal Data Submission Requirements

1.5.1 Cruise Information

1. Unless otherwise specified by the director, cruise data must be gathered and compiled according to the approved interior standard timber merchantability specifications in Table 1-1 below and in accordance with the following Ministry publications:

   a. *Cruising Manual* at the following web site:

   http://www.for.gov.bc.ca/hva/manuals/cruising.htm

   b. *Cruise Compilation Manual* at the following web site:

   http://www.for.gov.bc.ca/hva/manuals/cruisecompilation.htm

2. When cruise information is submitted to the district manager or the regional manager in order to determine a stumpage rate or an upset stumpage rate, that information must include:

   a. The Cruise Compilation Report, and

   b. The ASCII data files (if applicable, also the percent reduction ASCII file).

   c. The CSV (if applicable, also the percent reduction CSV file) for appraisals submitted on or after November 1, 2013, when the cruise was compiled using the 2014.00 or later version of the approved cruise compilation program.

3. When requested by the district manager, a copy of the original field data must be supplied by the licensee.

Table 1-1 Interior Timber Merchantability Specifications

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

1.5.1.1 Comparative Cruise Data

1. Except for subsection (4), if there is time to perform a full cruise, then the timber will be cruised.

2. Comparative cruise data may be used:

   a. If the estimated volume is greater than 5,000 m^3, and the regional manager has determined that the requirement to perform a full operational cruise will delay expeditious harvesting and result in further damage, or

   b. If the estimated volume is 5,000 m^3 or less, and the district manager has determined that the requirement to perform a full operational cruise will delay expeditious harvesting and result in further damage.

3. Comparative cruise data may not be used where the submitting licensee has submitted appraisals for previous cutting authorities which utilized comparative cruise data in the appraisal and has not harvested these cutting authorities in a timely manner.

4. Notwithstanding the other subsections of this section, comparative cruise data may be used when the stumpage rate is determined under sections 6.2(6), 6.2.1(3) and 6.4.3 of this manual.

5. The district manager may require the selection of a comparable cutting authority to be made in accordance with the requirements of the *Cruising Manual*.

1.5.2 Appraisal Data Forms

1. Unless otherwise specified in paragraph (b) of this section, the form of ADS required by the director for:

    a. The Market Pricing System is the Electronic Commerce Appraisal System (ECAS) which can be found at:

    https://apps.nrs.gov.bc.ca/ext/ecas/indexAction.do

        i. A submission in ECAS must be signed by a forest professional.

        ii. Any cutting authority with a quarterly adjusting stumpage rate based on an appraisal with an original appraisal effective date prior to July 1, 2012 and that has not been subsequently reappraised using an updated appraisal data submission, shall be resubmitted in accordance with paragraph (iii) of this section through ECAS if a stumpage rate effective July 2, 2016, or later is required.

        iii. The resubmission shall use the same appraisal data as the most recent appraisal or reappraisal prior to the date of the resubmission.

        If data in the resubmission is either missing or in a format that is incompatible with the procedures in the appraisal manual in effect on the effective date of the stumpage rate, the person who determines the stumpage rate shall add the missing data or change the data to be compatible prior to determining the stumpage rate.

    b. Miscellaneous timber pricing is the Interior Stumpage Rate Request Form (short form). Contact the appropriate regional office for the form. The short form must be signed by a forest professional unless appraised under sections 6.1.1, 6.1.2 or 6.3.

2. The form used for amortization agreements under section 4.3.1.4 must be the form in Appendix VII of this manual. An electronic version of this form can be found at:

    http://www.for.gov.bc.ca/pscripts/isb/forms/forms.asp

1.5.3 Appraisal Map

The appraisal map must be completed in accordance with the requirements of Appendix IV and must be submitted with the ADS in ECAS.

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2 Appraisals, Reappraisals and Stumpage Adjustments

2.1 Appraisal Process

1. Except where the sawlog stumpage rate or an upset stumpage rate is determined in section 5.1 or chapter 6:

    a. an appraisal process is used to determine a stumpage rate for a cutting authority area using the manual in effect on the effective date of the cutting authority.

    b. the appraisal is effective on the effective date of the cutting authority.

2. In accordance with section 1.5.2, a forest professional on behalf of a licensee or BCTS must submit an ADS to the district manager when the licensee or BCTS makes an application for a cutting authority.

3. The district manager may review the ADS, and may inform the forest professional, of any omissions or errors, or provisions of the manual that, in the opinion of the district manager, the forest professional may not have considered.

4. The forest professional may consider the district manager's information and may revise the ADS.

5. The district manager must give any information supplied by the forest professional under this section to the person who determines the stumpage rate together with any other information that the district manager considers relevant to the appraisal.

6. The person who determines the stumpage rate may review the ADS, and information supplied by the district manager, and may inform the forest professional, of any omissions or errors, or provisions of the manual that, in the opinion of the person who determines the stumpage rate, the forest professional may not have considered.

7. The forest professional may consider the notification and may revise the ADS.

8. The person who determines the stumpage rate must consider:

    a. the information provided by the forest professional,

    b. the information provided by the district manager, and

    c. any other information available to the person who determines the stumpage rate that is relevant to the appraisal.

9. The information in ECAS may be changed by the person who determines the stumpage rate in order to determine the stumpage rate

10. Once Regional revenue staff determines the upset, BCTS will be advised by email from GAS of the upset determination.

11. a. Once Regional revenue staff determines the stumpage rate, Timber Pricing Branch's GAS will advise those licensees who have submitted an email address that the stumpage determination has been made.

    b. The details of the licensee's stumpage determination will be made available in GAS accessed through Timber Pricing Branch's website.

2.2 Reappraisals

1. Where the policies and procedures in this manual require a reappraisal, the stumpage rate must be redetermined in accordance with the policies and procedures that are or were in effect as the case may be on the effective date of the reappraisal except for the subsection of section 2.2.1 under which a changed circumstance occurred.

2. Except as otherwise provided in this section, or in sections 2.2.3 or 2.2.2.1, a reappraisal is a complete reassessment of the cutting authority area at the time of the reappraisal by the person who determines the stumpage rate taking into account:

    a. A revised appraisal data submission submitted by the licensee in accordance with this manual, and/or

    b. Information available to the person who determines the stumpage rate.

3. A reappraisal may not be used to change the appraisal from a full appraisal to a stumpage rate determined under chapter 6 or vice versa.

4. At the time of a reappraisal, except as directed under section 2.2.2 or 2.2.3, initial detailed engineering cost estimates may be re-estimated once after construction in accordance with section 4.3.3(4).

5. Where a reappraisal under sections 2.2.1.2(2) or 2.2.2 is warranted but there isn't any timber remaining on the cutting authority area to apply the redetermined stumpage rate to, then the reappraisal is redundant and not required.

2.2.1 Changed Circumstances

1. For cutting authorities with an expiry date after September 30, 2014:

    a. The licensee must submit a Changed Circumstance Certification that a changed circumstance has not occurred on the cutting authority area, according to subsection 2 of this section, since the latest confirmed appraisal or reappraisal that is not a minister's direction or insect damage reappraisal.

    b. The submission of a Changed Circumstance Certification to the appropriate regional revenue staff must occur:

        i. no later than 60 days after the cutting authority expiry date; or

        ii. no later than 60 days after the licensee completes root disease control activities where the appraisal data submission includes a cost estimate for root disease control, provided the activities occur after the cutting authority expiry date; or

        iii. no later than the submission date agreed to in paragraph (c) of this subsection.

c. The regional revenue staff may agree to a written request from the licensee to extend the submission deadline date of a Changed Circumstance Certification. Any request will require a work plan that includes a new proposed submission date.

2. This subsection applies to cutting authorities issued on or after July 2, 2014. For those cutting authorities issued prior to July 2, 2014 use section 2.2.1(1) as it was prior to July 1, 2014.

   In this manual a changed circumstance means a circumstance where:

   a. i. the licensee or a contractor working on the licensee's behalf has harvested or will harvest the greater of either 1000 m^3 or 10% of the Total Net Cruise Volume of timber on the cutting authority area using a harvest method that is different from the harvest method used in the most recent appraisal or reappraisal of the cutting authority area, and

      ii. the different harvest method when taken into account in a changed circumstance reappraisal will produce the highest stumpage rate within the meaning of section 3.1.

   b. The licensee or a contractor working on the licensee's behalf carries out or will carry out development on the cutting authority area such that there will be a difference of at least 10% between:

      i. the total appraised development cost estimate if it is recalculated under chapter 4 on the basis of the development actually carried out, to the extent this development is in accordance with chapter 4, and

      ii. the total appraised development cost estimate used in the most recent appraisal or reappraisal, where this difference results from circumstances other than a change in the manual or a change as a result of a stumpage adjustment.

   c. Except as provided in subsections 4 or 5 of this section, the cutting authority is scale based and there has been a change[1] in the harvest area for the cutting authority when compared to the appraisal map submitted that exceeds the lesser of:
      i. Five hectares, or

      ii. Five percent of the harvest area for the cutting authority indicated on the appraisal map prior to the change,

   d. i. The cutting authority is cruise based and there has been a change[1] in the harvest area for the cutting authority when compared to the most recent appraisal map submitted that exceeds three hectares.

      ii. The area used for cruise based billing must only be changed to reflect the new area when:

[1] Measured as the absolute change, e.g. an addition of 5 hectares and the subtraction of 5 different hectares is a 10-hectare change for the purposes of this section.

a. the harvest area has decreased and the cutting authority has been amended,

b. the harvest area has increased, or

c. the change in harvest area described in this subsection triggers a changed circumstance under this section.

e. 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 15% of the Total Net Cruise 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 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. 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 25% 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.

h. The most recent appraisal or reappraisal:

i. included a Camp specified operation and a camp was never used ; or

ii. did not include a Camp specified operation but a camp was used that met the requirements of this manual.

i. The most recent appraisal or reappraisal:

i. included a skyline specified operation, or root disease control as part of the tenure obligation adjustment, and a skyline was never used, or root disease control was never carried out on the cutting authority area in an amount that exceeds the greater of three hectares or three percent of the area indicated on the appraisal map; or

ii. did not include a skyline specified operation, or root disease control as part of the tenure obligation adjustment but was subsequently carried out by the licensee beyond the threshold in paragraph i. of this subsection that met the requirements of this manual.

3. Except as provided in subsections 4 or 5 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.

4. Except for paragraph (d) of subsection 2 of this section 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.

5. 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(2) would be reduced, the changed circumstance reappraisal must be done only at the licensee's request.

6. 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(2)(e), the licensee must submit an appraisal data submission to the district manager within:

   i. 60 days of completion of log transportation activities or no later than 30 days prior to the expiry of the cutting permit whichever comes first; or

   ii. 60 days after the licensee completes root disease control activities where the appraisal data submission includes a cost estimate for root disease control, provided the activities occur after the cutting authority expiry date; or

   iii. 60 days after the submission date agreed to in subsection 2.2.1(1)(c),

   if the cutting authority must be reappraised because of a changed circumstance under section 2.2.1.

   b. If the change in harvest area referred to under sections 2.2.1(2)(c) and (d) includes a portion of the cutting authority area for which cruise information is not available, the person who determines the stumpage rate may use the best information that person deems available in the reappraisal.

   c. For a changed circumstance under section 2.2.1(2)(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.

   d. Thereafter the changed circumstance procedure for paragraph (a) or (b) of this section is the same as required by sections 2.1(3) to 2.1(11).

3. Where the district manager believes that a changed circumstance has occurred under subsections (2) or (3) 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(11).

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(2)(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. Except as provided in subsection 2 of this section, where the most recent reappraisal is a minister's directed reappraisal under section 2.2.2 or an insect damage reappraisal under section 2.2.3, the effective date of a changed circumstance reappraisal:

    a. Under section 2.2.1(2)(f) or 2.2.1(2)(g) is the day after the date of the most recent appraisal or reappraisal that is not a reappraisal under sections 2.2.1(5), 2.2.2 or 2.2.3.

    b. Under any other subsection of this section, is the day after the date of the most recent appraisal or reappraisal that is not a reappraisal under sections 2.2.1(5), 2.2.2 dated after July 1, 2010, or a reappraisal under section 2.2.3.

2.2.2 Minister's Direction

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 must 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 must be the same procedure as that required by subsections 2.1(3) through 2.1(11) 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* before it was repealed may be reappraised on or after April 1, 2006 in accordance with this subsection if the licensee submits a revised ADS to the district manager.

        i. Cutting authorities that have not been reappraised in accordance with this section may be reappraised once on or after July 1, 2014 during the remaining term and all extensions,

        ii. Cutting authorities that have been reappraised once in accordance with this section prior to July 1, 2014 may be reappraised once on or after July 1, 2014 during the remaining term and all extensions,

iii. Cutting authorities that have been reappraised twice in accordance with this section prior to July 1, 2014 may not be reappraised in accordance with this section.

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. Subject to subsection (1)(d) of this section, update the insect attack and the down tree code information for all the original trees in each plot in the field for codes 1, 2, 3, 5, 6, 7, 8, E and G 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 and down tree 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 the cutting authority area must 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

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

The effective date of an insect damage reappraisal is the first day of the month following the month in which the reappraisal is submitted in ECAS.

2.3 Stumpage Adjustments

1. Unless otherwise specified by this manual or by the Minister, and subject to section 6.6, a stumpage rate must be adjusted quarterly on each of January 1, April 1, July 1 and October 1, of each year.

2. The adjustment will be the recalculation of the stumpage rate that was determined in the most recent appraisal or reappraisal by using:

   a. the appraisal data used in the most recent appraisal or reappraisal,

   b. the manual in effect on the effective date of the most recent appraisal or reappraisal, and

   c. the stumpage appraisal parameters that the director approves for use in the recalculation of stumpage rates for that quarter.

3. Woodlot Adjustable Stumpage Rates:

   The stumpage rate for a cutting authority issued for a woodlot that meets the criteria in section 6.1.2(2) must be adjusted quarterly.

2.4 Correctable Errors

1. In this section, a correctable error means:

    a. an error in transcribing or compiling approved cruise field data or in the application of approved loss factor and taper equations,

    b. an error in a calculation made as part of the appraisal data submission,

    c. an error in transcribing the data from an appraisal data submission or in performing the calculations specified in the manual, or

    d. an error in the calculation or application of published appraisal parameters.

2. Where a person believes that a correctable error has been made in a stumpage determination, that person must give written notice of the correctable error as follows:

    a. in the case of an appraisal or a reappraisal, the notice must be given to the regional manager, and in the case of a quarterly adjustment, the notice must be given to the director, and

    b. the notice must identify the stumpage determination, the correctable error, and the cause of the correctable error to the extent reasonably possible.

3. The regional manager or the director, upon receipt of the notice must determine whether or not a correctable error was made.

4. Where the regional manager or the director determines that a correctable error has not been made, the person who determined the stumpage rate or the director must notify the person who gave the notice of the correctable error.

5. Where the regional manager or the director determines that a correctable error has been made, then:

    a. the regional manager or the director will notify the person who gave the notice of the correctable error,

    b. the regional manager or the director will take reasonable steps to ensure that all licensees who may have been affected by the error are informed of the decision, and

    c. i. where the regional manager determines that a correctable error has been made in an appraisal or a reappraisal the cutting authority area must be reappraised only to correct the error.

        ii. the effective date of the reappraisal must be the first day of the month following the date on which the notice of the correctable error was received by the regional manager.

d. i. where the director has determined that a correctable error has been made in the calculation of a quarterly stumpage adjustment, the adjustment must be correctly recalculated, and

ii. the effective date of the redetermined rate must be the first day of the month following the date on which the notice of the correctable error was received by the director.

2.5 Redetermination of Stumpage Rate by Agreement

1. If within twenty-one days of the date of determination or redetermination of a stumpage rate (the "original stumpage rate") the licensee and an employee of the ministry authorized under section 1.2.1 (the "employee") agree to a redetermination consistent with the version of the manual used for the original stumpage rate, the employee may redetermine the original stumpage rate.

2. The stumpage rate redetermined under subsection (1) must be effective on the same date as the original stumpage rate.

3. The licensee and the employee may agree to extend the twenty-one day period referred to in subsection (1).

3 Final Estimated Winning Bid

3.1 Highest Stumpage

1. Except as provided in section 5.1 and chapter 6 of this manual the licencee must submit an appraisal data submission that is capable of being used by the person who determines the stumpage rate that will produce the highest stumpage rate once the point of appraisal has been determined in accordance with section 3.5.

2. If the harvest method or transportation route has been deemed unsuitable under paragraph three of this section then the combination of harvest method, development and cycle time that produces the next highest stumpage rate is used.

3. Regardless of the harvest method or transportation route that the licensee uses or intends to use for the cutting authority area, or any other fact or law pertaining to those phases, the district manager when deciding whether a harvest method or transportation route is unsuitable may only consider the following:

    a. the physical features and terrain stability of the cutting authority area and the areas through which access to the cutting authority area may be gained,

    b. the physical features of the areas outside of the cutting authority area that may be affected by the harvesting in or the transportation of the timber from the cutting authority area,

    c. visual quality objectives,

    d. the licensee's written rationale in the appraisal data submission that describes why a harvest method or transportation route should be considered unsuitable.

3.2 MPS Lumber Selling Prices

Selling prices for MPS are based on three-month averages of lumber market values reported by licensees and published monthly by Timber Pricing Branch. They are aggregated by zone based on Points of Appraisal in Table 3-4. When the average market values (AMVs) are approved by the director they become an integral part of this manual.

3.2.1 Lumber AMVs

1. Unless otherwise specified in this section, the species lumber AMVs are based on a three month average of lumber selling prices two (2) months prior to the date of publication. They are derived by dividing the total sales value by the total sales volume.

2. If there is insufficient data reported the AMVs for a species may be determined using a procedure approved by the director.

3. The volume that is manufactured to Canadian Lumber Standard/American Lumber Standard (CLS/ALS) sizes is reported in foot board measure (fbm). Lumber manufactured in non-CLS/ALS sizes is adjusted to equivalent CLS/ALS sizes. The total volume for each species includes all sizes and grades of rough and dressed lumber in the green and dried state. Also included is finger-jointed lumber and machine stress rated lumber.

4. The total net sales value for each species or species group is reported in Canadian dollars (FOB) mill.

3.2.2 Calculation of the Real Stand Selling Price (RSP)

1. The total lumber selling price (SP) in $\$/m^3$ is determined for each coniferous species using lumber recovery factors (LRF) from the cruise compilation summary, LRF update add-ons and the current applicable lumber AMV for the species and zone.

    a. Zonal LRF update add-ons are found in Table 3-1, by species.

    b. Lumber AMVs as published every month.

    c. Calculation of total species lumber selling price.

        i. If the cruise LRF for Lodgepole pine (LO) has been reduced for Mountain Pine Beetle, the reduction must be added back as follows:

            Final LO Cruise LRF = LO Cruise LRF + (LO green attack volume * 3 + LO red attack volume * 33 + LO grey attack volume * 83) ÷ LO pine volume.

        ii. Species Appraisal LRF = Species Cruise LRF + Species LRF update add-on.

        iii. Species SP ($\$/m^3$) = Species AMV($/mbm)/1000 * Species Appraisal LRF.

d. The stand SP is the volume-prorated sum of the species SP.

e. The real stand SP (RSP) is the stand SP divided by the CPIF, as defined in section 3.3.

Table 3-1 LRF Update Add-ons for MPS

Species	**Zone 5** (Northern Interior)	**Zone 6** (Skeena)	**Zone 7** (Southern Interior)	**Zone 8** (Southern Cariboo)	**Zone 9** (Ft. Nelson-Peace)
Lodgepole Pine	107	81	97	96	88
Spruce	128	107	121	117	106
Balsam	120	101	110	110	97
Douglas Fir	97	-	84	86	-
Larch	93	-	84	86	-
Cedar	72	52	66	62	-
Hemlock	74	55	69	67	-
White Pine	91	-	82	82	-
Yellow Pine	-	-	85	90	-

3.3 Estimated Winning Bid Variables

Where volume data is used in the calculation of the variable that calculation must include the Total Net Deciduous Volume unless otherwise indicated in the description of that variable below. The descriptions are in the order that the variable appears in the EWB equation on page 3-10.

CPIF = Consumer Price Index Factor calculated as CPI/109.3.

RSP = Real Stand Selling Price for coniferous species ($/m^3). See section 3.2.

CEDAR = Fraction of Total Net Coniferous Volume that is cedar.

CEDAR DECAY = Cedar decay % from the appraisal summary report/100

ZONE 6 = Skeena selling price zone variable. Zone 6 = 1 if cutting authority is appraised with selling price zone 6, otherwise zone 6 = 0.

HEMBAL = Fraction of Total Net Coniferous Volume that is hemlock and balsam

LAYP = Fraction of Total Net Coniferous Volume that is larch and yellow pine.

FIRYP = Fraction of Total Net Coniferous Volume that is Douglas fir and yellow pine.

DRY_BELT = DRY_BELT = 1 if the cutting authority is located in the Rocky Mountain or 100 Mile House Districts.

Otherwise, DRY_BELT is the fraction of the Net Merchantable Area of the cutting authority that is located in Dry Belt Douglas Fir Zones as per the table in the *Cruising Manual*. If the BEC zone/subzone combination does not appear in that table, then the following logic must apply:

If the subzone is very dry (begins with x) then the zone/subzone combination is Dry Belt.

If the subzone is dry (begins with d) then the zone/subzone combination is Dry Belt only if the BEC zone is IDF, MS or PP.

If the subzone is not very dry or dry (does not begin with x or d) then the zone/subzone combination is not Dry Belt.

CABLE = Fraction of harvest method volume that is appraised as overhead cable yarding (includes Skyline < 600m horizontal)

VOL	=	The zonal volume from Table 3-3 for the cutting authority unless: The cutting authority is a BCTS cutting authority; if so then use the Total Net Coniferous Volume for the cutting authority. The cutting authority is not a BCTS cutting authority and, the sum of all the AAC's for all the licences that the licensee has in the same TSA as the cutting authority being appraised is less than the zonal volume indicated in Table 3-3 for the selling price zone in which the cutting authority is located, if so, then use the greater of: The Total Net Coniferous Volume, or The sum of the AAC volumes described above
DECAY	=	Prorated coniferous species decay % (from appraisal summary report)/100.
FIRE	=	Fraction of Total Net Coniferous Volume that is fire damaged.
VPT	=	Cutting authority average net volume per tree, from appraisal summary report (m^3).
VPH_CON	=	Net coniferous volume per hectare (m^3/ha).
CYCLE	=	Hauling round trip cycle time (Primary Cycle time) + Secondary Cycle Time). See sections 3.5.1 and 3.5.2.
CYCLE_INC6	=	CYCLE – 6.0 hours. If < 0, then 0.
ZONE_9	=	Fort Nelson - Peace selling price zone variable. Zone 9 = 1 if cutting authority is appraised with selling price zone 9, otherwise Zone 9 = 0.
DECID	=	Fraction of the Total Net Cruise Volume that is the Total Net Deciduous Volume.
CB	=	1 if cruise-based, 0 if scale based.
RG35	=	1 if Total Net Coniferous Volume of timber on the cutting authority area is comprised of 35% or greater red and grey Mountain Pine Beetle attacked Lodgepole pine, otherwise RG35 = 0.
AUC2014	=	2014 Auctions variable. AUC2014 = 1.
GREY	=	Fraction of Total Net Coniferous Volume that is grey Mountain Pine Beetle attacked Lodgepole pine.

LAG	=	Lag in years. LAG = 0 if Zone 5 or Zone 6 as defined in Section 3.5 or Cariboo Chilcotin District or Quesnel District, otherwise LAG = 2.
*GSCC_Vol	=	Volume in m^3 of the cutting authority area that is to be ground skid clear cut
*GSPC_Vol	=	Volume in m^3 of the cutting authority area that is to be ground skid partial cut
*GSCC_Slope	=	Slope of the cutting authority area that is to be ground skid clear cut.
*GSCC_Slope15	=	(GSCC Slope -15%) or 0 whichever is greater
*GSPC_Slope	=	Slope of the cutting authority area that is to be ground skid partial cut.
*GSPC_Slope15	=	(GSPC Slope -15%) or 0 whichever is greater
*GSCCPC_Slope	=	[(GSCC_Slope15 * GSCC_Vol + GSPC_Slope15 * GSPC_Vol) / (GSCC_Vol + GSPC_Vol)]
GS_SLOPE	=	$(GSCCPC_Slope)^2$ or 1225 whichever is less
GS_FRACTION	=	Fraction of harvest method volume that is appraised as ground skid clear cut and ground skid partial cut
DECK	=	Fraction of cutting authority volume that has been decked and/or partially harvested in the timber sale licence. Cutting authority volume = total net cruise volume + volume of decked/partially harvested timber + right-of-way volume.
DANB	=	Average number of bidders for the proxy district, in which the cutting authority area is located (see Table 3-2).
PC	=	Fraction of harvest method volume that is appraised as partial cut. PC = (100 – CAPCUT %)/100. See section 4.5 for definition of CAPCUT %. The 80% limit in the definition of CAPCUT in section 4.5 does not apply.
SLOPE	=	Cutting authority average slope from the appraisal summary report (%).
CPI	=	Monthly B.C. Consumer Price Index (CANSIM 326-0020, 2002 = 100) x 1.1787.

*Not an Estimated Winning Variable. These are components of the variable GS_SLOPE.

3.3.1 Haul Method Variable

1. Haul method does not contribute to the calculation of a stumpage rate but must be determined for the transportation route to the point of appraisal, and reported in the appraisal data submission.

2. The haul method is Off-highway when loaded logging trucks can travel in whole over roads administered under the *Industrial Roads Act* and Forest Service Roads as defined in the *Forest Act.*

3. The haul method is Highway when loaded logging trucks must travel in whole or in part over roads administered under:

    a. the *Transportation Act*, or

    b. the *Industrial Roads Act* and Forest Service Roads (as defined in the *Forest Act*) where prolonged known road restrictions (e.g., bridge load limit, narrow road, through rock cut, Regulations under the *Workers Compensation Act*, etc.) prevent the use of oversize loads.

Table 3-2 Proxy District Average Number of Bidders (DANB)[1]

District	Proxy District	TFL #	Geographic Area of TSA	TSA#	Supply Block	DANB
DCC	DCC		Williams Lake	29	Other than A, B, C, D	2.8
	DCH		Williams Lake	29	A, B, C, D	2.6
DCS	DCS					4.3
DFN	DFN					1.0
DJA	DJA					2.5
DKA	DHW	18	Robson Valley Kamloops	17 11	A	2.7
	DKA		Excluding proxy district DHW			4.0
DKM	DKM					1.6
DMH	DMH					3.9
DMK	DMK					2.0
DND	DND					2.6
DOS	DOS					3.4
DPC	DPC					1.2
DPG	DHW	18	Robson Valley Kamloops	17 11	A	2.7
	DPG		Excluding proxy district DHW			3.7
DQU	DQU					3.3
DRM	DRM					2.3
DSE	DAB	3, 8, 23	Arrow Boundary	1 2		2.7
	DCO	55, 56	Golden Revelstoke	7 27		2.2
	DKL		Kootenay Lake	13		2.2
DSS	DSS					2.5
DVA	DVA					2.9

[1] From the 5-year auction dataset.

Table 3-3 Zonal Volume[1]

Zone	Total Net Coniferous Volume (m^3)
5	52,535
6	53,046
7 OK	38,901
7 SE	36,732
8	48,549
9	42,041

[1] For the purposes of applying the volume variable in the estimated winning bid equation, first determine the applicable selling price zone for the cutting authority area from Table 3-4 for the highest stumpage point of appraisal. Then if the SP zone is zone 7, use the descriptions below to pick the appropriate zonal volume from Table 3-3 based on which district the cutting authority area is located in.

7OK = Cascades, Okanagan Shuswap, 100 Mile House, and Thompson Rivers Forest Districts excluding Kamloops TSA Block A.

7SE = Prince George, Rocky Mountain and Selkirk Forest Districts plus Kamloops TSA Block A

3.4 Estimated Winning Bid Equation

Using the variables defined in section 3.3, the selling price calculated in section 3.2.2 and the equation below, calculate the estimated winning bid (EWB).

EWB ($/m^3) = CPIF * [7.966
+ 0.2614 * RSP
+ 17.15 * (CEDAR * (1 – CEDAR DECAY) * (1 – ZONE6))
- 9.054 * HEMBAL
- 6.888 * LAYP
- 6.249 * (FIRYP) * DRY_BELT
- 17.96 * CABLE
+ 1.143 * ln (VOL/1000)
- 26.63 * DECAY
- 10.91 * FIRE
+ 4.951 * ln (VPT)
+ 0.006516 * (VPH_CON)
- 1.429 * (CYCLE + (0.5 * CYCLE_INC6))
- 5.724 * ZONE_9
- 11.69 * DECID
- 4.079 * (CB * (1 - RG35))
- 4. 379 * (CB * RG35)
+ 5.463 * AUC2014
- 1.138 * (GREY * (7 – LAG)) * CB * RG35
- 0.006427 * GS_SLOPE * GS_FRACTION
+ 45.54 * DECK
+ 0.8689 * DANB
- 5.843 * PC
- 0.03108 * SLOPE]

If EWB less than $0.25/m^3 then EWB = $0.25/m^3

Note: ln = natural logarithm.

3.5 Point of Appraisal (POA)

1. The POAs that may be considered for use in the appraisal are set out in Table 3-4 unless:

   a. five years have passed from the date that a milling facility was permanently rendered incapable of producing lumber and chips, and

   b. it was the only milling facility associated with that POA, or

   c. The appraisal effective date is past the expiry date for that POA indicated in subsection (4) of this section.

2. The POA chosen for the appraisal must:

   a. Not be excluded by the conditions in subsection 1 of this section,

   b. Be based on transportation routes that have not been deemed unsuitable by the district manager, and

   c. Be the POA with the lowest transportation and development cost (TRDEV) using the following calculation:

   TRDEV Cost ($/$m^3$) = [(1.429 * [CYCLE + (0.5 * CYCLE_INC6)] * CPIF] +
   [(SO's + DC)* (CPI/138.8)]

   Where:

   CYCLE = the cycle time as defined in section 3.3 and measured in accordance with section 3.5.1 and 3.5.2.

   CYCLE_INC6 = as defined in section 3.3.

   CPIF = as defined in section 3.3.

   SO's = the sum of the transportation specified operations that apply to the transportation route from sections 3.6.1 and 3.6.2.

   DC = Total Development Cost in the appraisal.

   CPI = as defined in section 3.3.

3. Except as provided in Table 3-3, the selling price zone indicated in Table 3-4 for the point of appraisal determined under this section must be used in the appraisal.

Table 3-4 Points of Appraisal

Northern Interior (Zone 5)			
Bear Lake	Fort St. James	Mackenzie	Smithers
Burns Lake	Fraser Lake	Prince George	Strathnaver
Clear Lake	Houston	Quesnel	Vanderhoof
Engen	Isle Pierre		

Skeena (Zone 6)	
Terrace	Kitwanga

Southern Interior (Zone 7)			
Adams Lake	Galloway	Merritt	Thrums
Armstrong	Grand Forks	Midway	Valemount
Canal Flats	Kelowna	Princeton	Vavenby
Canoe	Lavington	Radium	Westbank
Castlegar	Lumby	Revelstoke	Ymir
Craigellachie	McBride	Slocan	
Creston			
Elko			

South Cariboo (Zone 8)				
100 Mile House	Chasm	Lytton	Squamish	Williams Lake

Fort Nelson - Peace (Zone 9)	
Chetwynd	Fort St. John

4. The following Point of Appraisal will expire on the date indicated: Clear Lake (April 30, 2016).

3.5.1 Primary Cycle Time

1. The primary cycle time includes loading, hauling, weighing, unloading, return time, and unavoidable delays.

2. If a district has developed standard cycle time schedules from specific road junctions to the point of appraisal, the person who determines the stumpage rate must use these schedules to calculate the Primary Cycle Time in subsection (3) of this section, except to the extent that he or she considers variation necessary to account for sudden and significant changes in road accessibility not reflected in the existing schedules.

3. To determine the primary cycle time, use distances each rounded to the nearest 0.1km using the following procedure:

    a. Determine the weighted average cycle time to the common junction in accordance with the following steps:

        i. Establish the geographical center point of each cutblock and project a line from this point to the nearest road, marking the intersection of the line and the nearest road as the junction for the cutblock;

        ii. From the junction in subparagraph (a)(i), determine the cycle time to the nearest point over which all appraised timber on the cutting authority area must travel on the way to the point of appraisal (the "common junction"); and

        iii. Weight the cycle time from the junction for each cutblock to the common junction by the Total Net Cruise Volume for each cutblock to determine the weighted average cycle time to the common junction.

    b. Determine the cycle time from the common junction by road to:

        i. the mill associated with the point of appraisal (POA) that is closest to the cutting authority area point of appraisal chosen in accordance with Section 3.5;

        ii. in the case of a route to the point of appraisal involving rail transportation, the appraisal place of unloading for placement on railcars; or

        iii. in the case of a route to the point of appraisal involving water transportation:

            aa. the location closest by road to the cutting authority area that is listed in Appendix VI; or

            bb. any closer location to the cutting authority area not included in Appendix VI that has in place authorizations allowing use of the location as a transfer point for water transportation of timber; and

    c. Sum the times calculated under subsection 3(a) and 3(b), and add an estimate for unavoidable delay of 75 minutes for cable yarding systems or 60 minutes for all other systems.

3.5.2 Secondary Cycle Time

1. The secondary cycle time is when logs must be truck hauled following dewatering. To determine the secondary cycle time, use distances each rounded to the nearest 0.1 km from the reload site to the closest mill associated with the point of appraisal.

2. If a district has developed standard cycle time schedules from specific road junctions to the point of appraisal, the person who determines the stumpage rate must use these schedules to calculate the secondary cycle time in subsection (1) of this section, except to the extent that he or she considers variation necessary to account for sudden and significant changes in road accessibility not reflected in the existing schedules.

3.6 Specified Operations

1. Only the specified operations described in sections 3.6.1 to 3.6.7 may be considered in an appraisal or reappraisal.

2. Where appropriate, specified operations are weighted according to the applicable net cruise volume.

3. Before a specified operation is used in an appraisal it must be approved by the person who determines the stumpage rate and the supporting information must be made available upon request.

3.6.1 Water Transportation

Water transportation occurs when logs must be transported by water between the cutting authority and the point of appraisal or reload. This includes all costs of dumping, booming, developing and operating dumping and booming grounds, and towing. The specified operation for reservoir lakes applies to all marine appraisals and to Arrow, Kinbasket, Ootsa, Revelstoke and Williston Lakes. All other lakes receive the natural lake specified operation.

1. Dump and Boom:

   Reservoir Lakes and Marine: = $\$3.42/m^3$

   Natural Lakes: = $\$3.42/m^3$

2. Tow:

   All = $\$1.89/m^3$

3. Dewater and Reload:

   All = $\$2.58/m^3$

   Only considered if the mill infeed is not located on the same lake, or a dam transfer is required.

3.6.2 Special Transportation Systems

A special transportation system specified operation may be used in the appraisal where geographic conditions dictate its use.

The cost estimates include all costs associated with servicing the appropriate cutting authorities, (excluding all on-site costs of owning and operating a camp facility) and operation of bubble systems where applicable.

The recognized special transportation systems are as follows:

1. Railway

    a. Truck-to-Rail Transfer

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

    All = $2.58/m^3$

    b. Railway Transportation

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

Table 3-5 Rail Log Transportation

Origin	Cost Estimate	Point of Appraisal
Leo Creek	$13.18/m^3$	Fort St. James
Lovell	$17.31/m^3$	Fort St. James
Bear Lake	$24.27/m^3$	Fort St. James
Minaret Creek	$26.66/m^3$	Fort St. James
Niteal	$23.23/m^3$	Fort St. John

2. Barge/Ferry Used for Truck Haul (Private)

   When a truck haul road is interrupted by a body of water and the operation of a barge/ferry system is the most efficient means to provide a transportation link to harvesting areas, the specified operation for this phase, regardless of ownership is:

   All lakes = $\$4.17/m^3$

3. Barge/Ferry Not Used for Truck Haul (Private)

   When a cutting authority can be served only by water, and daily (operating days only) ferry/barge services are feasible for crew transportation, the specified operation for this phase, regardless of ownership is:

   All lakes = $\$1.29/m^3$

3.6.3 Camp Costs

1. A camp specified operation may be included in an appraisal if all of the criteria in this section are met for the cutting authority area being appraised.

2. Workers, who work on the cutting authority area, must reside in the camp and travel each day of work during timber harvesting and hauling operations from the camp to the cutting authority area.

3. The licensee submitting the appraisal must incur the following:

   a. Costs to establish the camp either through capital expenditure or through long term lease arrangements, and

   b. Costs to operate and maintain the camp.

4. The camp must:

   a. Be comprised of buildings or structures of a permanent or semi-permanent nature,

   b. Have a cookhouse(s) and a bunkhouse(s),

   c. Have full time camp staff, and

   d. Be located outside of a support centre listed in Table 3-6.

5. Where two licensees share the costs referred to in paragraph three and four of this section for a single camp:

   a. There must be a written agreement between the two licensees documenting the cost sharing arrangement and specifying each party's contribution,

   b. One of the two licensees must not contribute more than 60% of the costs, and

   c. Each licensee must compile a statement of costs net of recoveries and Total Net Cruise Volume attributable to its harvesting operations serviced by the camp.

6. Where a cutting authority area serviced by a camp:

   a. Rail access only = $3.61/m^3,

   b. Non-rail access remote camp = $3.66 /m^3

      i. "Non-rail access remote camp" is defined as a camp located greater than:

      ii. Five (5) hours loaded one-way log truck haul to a support centre, or

      iii. Three (3) hours loaded one-way log truck haul to a support centre and the primary log haul is to either a log dump for water transportation and/or a rail siding for a rail transportation specified operation.

   c. Non-rail access all other camps = $1.35/m^3

Table 3-6 Support Centres

North Area

Burns Lake	Kitwanga	Smithers	Terrace
Houston	New Hazelton	Stewart	Prince George
Kitimat	Fort St. James	Fraser Lake	Fort St. John
Chetwynd	Fort Nelson	Mackenzie	Dawson Creek
Vanderhoof	McBride	Valemount	

South Area

Boston Bar	Kamloops	Merritt	Salmon Arm
Clearwater	Kelowna	Pemberton	Vernon
Hope	Lillooet	Penticton	Nakusp
Canal Flats	Creston	Grand Forks	Nelson
Castlegar	Fernie	Greenwood	Revelstoke
Cranbrook	Golden	Invermere	100 Mile House
Williams Lake		Princeton	Quesnel

3.6.4 Skyline and Intermediate Support Skyline

1. Except as provided in paragraph 4 of this section, a skyline specified operation cost estimate may be included in an appraisal for each cut block where the average yarding distance (slope) is greater than 300 meters, or intermediate supports are used.

2. The average yarding distance is determined by:

    a. Drawing a series of transects (minimum four) with their origin at a tower landing, being equi-angle apart and measured to the back-line. This is done for each block; blocks will not be amalgamated for the purpose of average yarding distance calculation.

    b. Yarding distance will be measured as slope distance from the centre of the tower landing to the falling boundary.

    c. The sum of transect lengths divided by the number of transects equals the average yarding distance.

3. Where the ministry and the licensee agree that forest and land management is better served by the use of a "skyline system" in a particular logging chance, then the average yarding distance greater than 300 meters requirement is waived.

4. Cut blocks where the average yarding distance is 600 meters or greater (measured horizontally) will be considered as helicopter in the appraisal.

5. The specified operation cost estimate is: $\$4.34/m^3$ for the harvest method volume appraised as skyline.

3.6.5 Helicopter Logging

The specified operation cost estimate is $\$88.59/m^3$ for the harvest method volume appraised as Heli.

3.6.6 Horse Logging

The specified operation cost estimate is $\$8.67/m^3$ for the harvest method volume appraised as horse.

3.6.7 High Development Cost

For BCTS timber sale licences only, where the development cost estimate (DC) determined under chapter 4, is greater than $\$2.66/m^3$, the high development cost specified operations estimate (HDC) is calculated as follows:

HDC $/m^3 = DC – 1.30

If DC < = 2.66, HDC = 0

3.7 Final Estimated Winning Bid

1. Subject to subsection (3) of this section, the Final Estimated Winning Bid (FEWB) is the difference between the estimated winning bid and the total of the specified operations that are applicable to the appraisal or reappraisal of the cutting authority area.

2. Expressed as an equation:

$$FEWB = EWB - (SO \times (CPI \div 138.8))$$

Where:

EWB = The Estimated Winning Bid determined under section 3.4.

SO = The sum of the applicable specified operations in the appraisal or a reappraisal of a cutting authority area as may be calculated under section 3.6 expressed in $\$/m^3$.

CPI = Monthly BC Consumer Price Index (refer to section 3.3).

3. Where the FEWB calculated under subsection 2 of this section is less than $\$0.25/m^3$, then the FEWB must be $\$0.25/m^3$.

4 Tenure Obligation Adjustments

4.1 Tenure Obligation Adjustment (TOA)

1. Except where a cutting authority area is the area authorized for harvest under a timber sale licence entered into under section 20 of the *Act* or section 21 as it was before it was repealed, and subject to subsection (2) of this section, the types of costs that may be used in the calculation of the tenure obligation adjustment in the appraisal or reappraisal of a cutting authority area are:

    a. the final forest management administration cost,

    b. the total development cost,

    c. the final total road management cost, and

    d. the total silviculture cost.

2. A cost referred to in subsection 1 of this section may only be used in the appraisal or reappraisal of a cutting authority area if:

    a. The holder of the cutting authority authorizing harvesting on the cutting authority area will incur that kind of cost:

    b. when exercising an authority or carrying out an obligation under the cutting authority, or

    c. subject to section 4.3, when carrying out an activity on a road when acting under the authority of the Crown, a road permit holder, a road use permit holder, or a private road owner.

3. In this chapter:

    a. “development” means road development, cattleguards, fencing and pipeline crossings.

    b. "road" includes bridges, drainage structures and any other pertinent structures that are part of the road.

4. The tenure obligation adjustment is calculated under section 4.9.

4.2 Administration Costs

4.2.1 Forest Management Administration (FMA)

Forest management administration costs are those costs directly related to supervision and administration of the activities listed below such as:

- Office Operations,
- Cruising,
- Environmental Protection,
- Consultants fees (section 4.3.3),
- Archaeological surveys,
- Right-of-way easements,
- Foreshore and other land leases,
- Tree marking Beetle probing & Pheromone baiting,
- Engineering (bridge inspections, road layout, survey including geotechnical surveys, and design, other than those applicable as engineered cost estimate).
- Suitable Secondary Stand Structure Survey.

The forest management administration cost estimate in an appraisal is determined as follows:

$$\text{FMA } (\$/m^3) = 3.2265 + (0.0033 * \text{CP slope}^2)$$

Where:

CP Slope - is the cutting permit average slope from the Cruise Appraisal Summary Report.

If the equation yields less than $\$3.29/m^3$ then use $\$3.29/m^3$. If the equation yields more than $\$11.44/m^3$ then use $\$11.44/m^3$.

4.2.2 Final Forest Management Administration (FFMA)

For cruise based cutting authorities:

$$\text{FFMA } (\$/m^3) = \text{FMA } (\$/m^3)$$

For scale based cutting authorities:

$$\text{FFMA } (\$/m^3) = \text{FMA } (\$/m^3) * \frac{[\text{TNCV } (m^3) + \text{D}(m^3)]}{\text{TNCV}(m^3)}$$

Where:

TNCV = Total Net Coniferous Volume

D = Total Net Deciduous Volume

4.3 Development

1. The total development cost estimate in an appraisal or reappraisal must be determined in accordance with and subject to the conditions of this section.

2. There are two categories of development, namely:

   a. New construction projects.

   b. Reconstruction or replacement projects.

3. A development cost estimate that may be calculated under this section is calculated for each road, bridge or other drainage structure that is required to be newly constructed, reconstructed or replaced by the licensee on Crown land, or as provided in section 4.3.1.2, in order for the licensee to access Crown timber that it is authorized to harvest.

4. The total development cost estimate is the total of all of the development cost estimates that are calculated under subsection 3 in accordance with the procedures in the document titled "Specifications: the Interior Market Pricing System."

5. The two methods of estimating development costs are as follows:

   a. Tabular cost estimate: A tabular cost estimate is made in accordance with sections 4.3.2 through 4.3.2.6 when the project is a new construction project, other than a situation listed in section 4.3.3(7).

   b. Detailed engineering cost estimate (ECE): an ECE is made in accordance with sections 4.3.3 and 4.3.3.1 when:

      i. a new construction project is a situation listed in section 4.3.3(7), or,

      ii. the project is a reconstruction or replacement project.

6. Subject to section 4.3.1.4 and to subsection 12 of this section, the development cost estimate of a project, or the licensee's share of the cost of a project, that has been authorized may only be used in the appraisal or reappraisal of the licensee's first fully appraised tributary cutting authority area that is authorized for harvest by the licence under which or because of which that authorization has been given.

7. A development cost estimate made in accordance with section 4.3.1 applies to all development cost estimates made under this section.

8. Where a licensee undertakes a new construction project or a reconstruction or replacement project using materials that it has either purchased from a person who is not at arm's length from the licensee or that it has previously used at another location, the cost estimate of the project may only include the cost of:

    a. dismantling the materials at the site where they were previously used,

    b. transporting the materials to the project location, and

    c. installing the materials at the project location.

9. No development costs for a project may be included in an appraisal or reappraisal where they have been paid for by another party, including the provincial or federal government.

10. Where a road that is administered by the Ministry of Transportation and Infrastructure requires reconstruction or an upgrade in order to be used for the hauling of Crown timber, the cost of the project may not be used in an appraisal or reappraisal unless:

    a. the use of the cost of that project has received prior approval from the director of Timber Pricing Branch, and

    b. it is based on competitive bids from persons operating at arm's length from the licensee that undertakes the project.

11. Where the cost of an authorized project is shared by two or more licensees, a licensee's share of the total development cost estimate may be apportioned in accordance with section 4.3.1.4.

12. Where a reconstruction or replacement project was not planned at the time of the appraisal of a cutting authority area and was not used in a reappraisal of that cutting authority area, the cost estimate of that project may be used in the appraisal of the next fully appraised tributary cutting authority area from which harvested timber is to be transported over that project.

13. The development cost estimate for a reconstruction or replacement project may not exceed the development cost estimate that would have been made if the project had been a new construction project at that same location.

14. No cost may be considered in an appraisal or reappraisal if the cost was as a result of the licensee's negligence, or failure to comply with legislation.

4.3.1 Development Costs

Where proration is required for section 4.3.1.1 and 4.3.1.2:

$$\text{Crown Share} = \text{Total Estimated Cost} \times \frac{\text{Appraised Timber Volume}}{\text{Total Timber Volume}}$$

Where:

Crown Share ($)	=	Dollar amount prorated to stumpage-bearing timber in the cutting authority being appraised.
Total Estimated Cost ($)	=	Dollar amount of the total development cost estimate.
Appraised Timber Volume (m^3)	=	Volume of Crown timber that is tributary to the project and under the control of the licensee or a company legally associated with the licensee, including volume in all areas contributing to the allowable annual cut determination.
Total Timber Volume (m^3)	=	Total volume of Crown and private timber that is tributary to the project and under the control of the licensee or a company legally associated with the licensee.

In all cases volumes are estimated from the latest approved operational or inventory cruise data and maps of the area within the drainage to the height of land.

The Crown share is a dollar amount which is included in the appraisal of a tributary cutting authority, subject to section 4.3.1.4.

Development cost estimate is prorated according to the outline below (see also Appendix II).

4.3.1.1 Development Cost Estimates on Crown Lands

1. Development providing access to appraised timber only:

   Total estimated costs are included in the appraisal.

2. Development providing access to non-appraised timber or non-timber resources only:

   Cost estimates are not included in the appraisal.

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

   All cost estimates are prorated between appraised timber and non-appraised timber or non-timber resources as determined by the person who determines the stumpage rate. The appraised timber portion is then included in the appraisal.

4.3.1.2 Development Cost Estimates on Private Land

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 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) and then the Crown portion is included in the appraisal.

4.3.1.3 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 the 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. 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 must continue to be included upon reappraisal.

4.3.1.4 Amortization Agreements

1. Where the development cost estimate in an appraisal of a cutting authority (the "first cutting authority")

    a. includes development costs for an authorized project that the licensee requires to access one or more cutting authority areas tributary to the first cutting authority area, and

    b. exceeds $4.00/m³ exclusive of development costs apportioned to the first cutting authority under any prior agreement under this section,

the regional manager may enter into a written agreement with the licensee authorizing distribution of a portion of the development cost estimate, exclusive of previously apportioned costs as specified in paragraph (b) of this section, to one or more cutting authorities that are tributary to, and may be issued under the same licence as, the first cutting authority, and in the case of distribution to two or more such tributary cutting authorities, specifying the apportionment between or among them. The portion of the development cost estimate that the regional manager may agree to apportion under this section is only that which the person who determines the stumpage rate determines is required to access timber that is tributary to the first cutting authority.

2. An agreement under subsection (1) is subject to the following conditions:

    a. For the purposes of this section, "authorized project" means a project that the person who determines the stumpage rate has accepted as consistent with this manual.

    b. The agreement must identify any future tributary timber included in the agreement by a unique identifier for each future cutting authority along with the costs being apportioned to each cutting authority identified in the agreement.

    c. The development cost estimate apportioned to a tributary cutting authority under an amortization agreement must be used in the appraisal or reappraisal of the tributary cutting authority in the amount specified in the agreement. The amount specified may not be revised:

        i. with reference to the cost base of the manual in effect on the effective date of the tributary cutting authority, or

        ii. to take into account new information submitted by the licensee about the development, unless pursuant to an amendment to the agreement

necessitated by a changed circumstance reappraisal as authorized under paragraph (k) of this section.

d. Costs for in-block development are not eligible for inclusion in the agreement unless the person who determines the stumpage rate is satisfied that they are required to access future tributary timber.

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

f. The agreement is entered into only for the purposes of determining a stumpage rate and confers no obligation on the Crown to compensate the licensee for any unamortized costs.

g. The agreement must be signed by the licensee and the regional manager, and must not be for a term, including extensions, longer than ten years unless otherwise approved by the regional manager.

h. The regional manager and licensee may not amend the agreement to adjust the total amount apportioned or, consequentially, any part amount apportioned to a tributary cutting authority, except as authorized under this subsection.

i. The apportionment specified in the agreement under this section may be adjusted once during the total term of the agreement, provided the adjustment is between or among only those tributary cutting authorities included in the agreement that have not yet been issued at the time of the adjustment.

j. One additional tributary cutting authority that was not previously identified in the agreement may be added once during the total term of the agreement.

k. In the event of a changed circumstance reappraisal of the first cutting authority, the amounts specified in the agreement must be amended to reflect proportionately the new total amount of the apportioned development cost estimate as determined in the changed circumstance reappraisal among only those cutting authorities included in the agreement that have not yet been issued as of the submission date of the changed circumstance reappraisal.

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

4.3.2 Tabular Cost Estimates

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

4.3.2.1 Subgrade Construction

The subgrade construction cost estimate includes:

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

Right-of-way felling and logging is excluded.

4.3.2.2 Subgrade Construction Variables

For appraisal purposes the following subgrade construction variables are recognized:

1. Section length: (L)

   a. Each section should be representative of a single soil moisture code. Section lengths are recorded to the nearest 0.1 km. Each section should be 1 km or longer, although some individual section lengths less than 1 km but greater than or equal to 0.100 km are acceptable for extreme variations of slope or % rock. The section length includes that portion traversing through landings.

   b. All road segments less than 0.100 km, are to be aggregated with other adjacent road segments, making appropriate adjustments to average site conditions using the distance-weighted averages for the site variables for that section.

   c. A short spur road less than 0.100 km may be aggregated with a similar stand-alone non-adjacent road section.

2. Road Types:

   a. Long Term (LT) - A long term road is a road with a continuous raised sub-grade and ditch line (the raised sub-grade and ditch line may be interrupted for short section <100 m in length (e.g., when crossing a short section of rock or at the crest of a hill). In flat terrain the ditch line may simply be the depression created when sub-grade material is excavated to create a raised sub-grade.

   b. Short Term (S) - A short term road is a road with the stumps removed and a bladed running surface. There may be elements of ditching and elevated grade, particularly around wet areas but these features are not continuous.

c. Snow/Ice Road: - A snow/ice road is a single lane seasonal winter road including turnouts, with a flat road profile that is built with a combination of snow, ice and dirt, on a surface that may or may not have been stumped. The driving surface is built up using multiple layers of snow and ice such that extra stabilizing material costs are not applicable. A flat road profile means the side slope is less than or equal to 15% and there is minimal side cut. Minimal means that cuts into mineral or organic soil must not exceed 0.5 m in depth for distances up to 0.1 km. Seismic lines being used for roads, that have not previously been used as roads, will be considered as new construction and qualify as snow/ice roads provided they fall within the above criteria.

3. Uphill Side Slope: (SLOPE %)

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

4. Percent Rock: (ROCK %)

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

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

Where:

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

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

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

5. Soil Moisture Regime Class (SMR):

   Those biogeoclimatic zones/subzones with site series identified as "M", "VM" or "W" in the dark shaded area of the table in Appendix III are considered "Wet" for appraisal purposes. The zones/subzones with site series identified as "SD" and "F" in the light shaded area are considered "Moist". Those zones/subzones with the site series identified as "ED", "VD", "MD" in the unshaded area are considered "DRY".

6. Biogeoclimatic Zone Abbreviations Used in Section 4.3.2.3

   BWBS - Boreal White and Black Spruce

   ESSF - Engelmann Spruce - Subalpine Fir

   ICH - Interior Cedar Hemlock

4.3.2.3 Subgrade Cost Estimate

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

Road Group	**Equation**
1	Refer to subsection 4.3.3(7)(o)
2	8737+ (144 * SLOPE %)
3	4677 + (3037 * LT)
4	4771 + (1806 * WET) + (5248 * LT)
5	4787 + (79 * SLOPE %) + (1489 * LT)
6	4985 + (53 * SLOPE %) + (3101 * LT)
7	7673 + (128 * SLOPE %) + (4548 * LT) - (4072 * BWBS)
8	4260 – (1502 * DRY) + (2824 * LT)
9	4366 + (218 * SLOPE %) – (1834 * DRY) + (6532 * LT)
10	3976 + (179 * SLOPE %) + (1983 * LT) + (3469 * ICH) + (3469 * ESSF)
11	5834 + (828 * SLOPE %) + (273 * ROCK %) ($8526/km set as minimum. If equation yields less than $8526 then use $8526)
12	4107 + (284 * SLOPE %) + (5201 * LT)

Where:

Road groups are defined in Table 4-1.

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

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

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

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

WET = 1 if the Soil Moisture Code is WET.
Otherwise WET = 0

DRY = 1 if the Soil Moisture Code is DRY.
Otherwise DRY = 0

Snow and Ice (Winter) Roads

The subgrade cost estimate for new snow and ice roads is $4,072/km.

Table 4-1 Road Groups

Road Group #	Districts Included	Within the Geographic Boundary of a TSA, SB and TFL
1		Cascadia TSA Blks 9, 10, 11 Kalum TSA, TFLs 1, 41 Nass TSA Pacific TSA Blk 28A, 28B
2	Skeena Stikine	
3	Nadina	
4		Williams Lake TSA, SBs J, K & L Prince George TSA, SBs G & H, TFLs 30, 53 Quesnel TSA, SBs E through I, TFL52 100 Mile House TSA, SBs G & H Cascadia TSA Blks 5, 6, 7
5	Vanderhoof	Prince George TSA, SBs C, E, F & I, TFL 52 Blk B[1], Cascadia TSA Blk 8
6		Mackenzie TSA, SBs G through P, Prince George TSA SB's A & B
7	Peace Fort Nelson	Mackenzie TSA, SBs A through F
8		Williams Lake TSA, SBs A through I Quesnel TSA, SBs A through D 100 Mile House TSA, SBs A through F
9	Cascades	TFLs 15, 49, 59, Okanagan TSA, SBs 1 through 5 Kamloops TSA SBs 2, 3, 4, TFL 35
10	Rocky Mountain	Boundary TSA, TFL 8
11		Arrow TSA, TFL 23, 3, 33 Golden TSA Kootenay Lake TSA Revelstoke TSA, TFLs 55, 56 Okanagan TSA SBs 8, 9 Cascadia TSA Blks 1 through 4
12		Kamloops TSA SB 1, TFL 18 Williams Lake TSA, SBs M & N Okanagan TSA, SBs 6, 7 Robson Valley TSA

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

[1] Portion of TFL 52 that was within the former TFL5.

4.3.2.4 Drainage Structures

An appraisal may include a cost estimate for large drainage structures only where their requirement is substantiated by field data. All pipe culverts under 950 mm in diameter or the equivalent cross-section area and all single log abutment culverts up to 3.4 m span length are included in the subgrade cost estimates (see section 4.3.2.1).

For a detailed description of large drainage structures see page 37 of the *Forest Road Engineering Guidebook* (June 2002).

For a detailed description of smaller drainage structures see pages 104 (Pipe Culverts) and 106 (Log Culverts) of the *Forest Road Engineering Guidebook* (June 2002).

An electronic version of the above guidebook can be accessed at:

http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Guidetoc.htm

1. Culverts

   The cost estimates for the supply and installation of culverts from 0.3 m to 1.8 m in diameter are determined from Table 4-2. Culverts smaller than 0.95 m are included in the subgrade cost estimates in section 4.3.2.3.

   Costs for culverts smaller than 0.95 m are included in Table 4-2 for use where a detailed engineering cost estimate in section 4.3.3 requires the use of culverts smaller than 0.95 m. Detailed engineering cost estimates are required for culverts larger than 1.8 m, no interpolation of values is permitted. Total installation cost for culverts includes all costs of transporting the culvert to the jobsite and all costs of installation of the culvert to the final subgrade stage.

Table 4-2 Culvert Appraisal Cost Estimates

INSTALLED CULVERT COST ESTIMATE ($)														
Culvert length (m)	**Equivalent Round Diameter**													
	0.3	**0.4**	**0.45**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**0.95**	**1**	**1.2**	**1.4**	**1.6**	**1.8**
	X-Sectional Area (m^2)													
	0.07	**0.13**	**0.16**	**0.2**	**0.28**	**0.38**	**0.5**	**0.64**	**0.71**	**0.79**	**1.13**	**1.54**	**2.01**	**2.54**
9	456	578	652	734	926	1152	1412	1708	1869	2038	2803	3707	4750	5932
10	474	609	691	783	995	1246	1536	1864	2043	2231	3081	4085	5244	6558
11	491	640	730	831	1065	1341	1659	2021	2217	2424	3359	4464	5739	7183
12	508	671	769	879	1134	1435	1783	2177	2391	2617	3637	4842	6233	7809
13	526	702	808	927	1204	1530	1907	2334	2566	2811	3915	5221	6727	8435
14	543	732	847	976	1273	1625	2030	2490	2740	3004	4193	5600	7222	9061
15	561	763	886	1024	1343	1719	2154	2646	2914	3197	4472	5978	7716	9686
16	578	794	926	1072	1412	1814	2278	2803	3089	3390	4750	6357	8211	10312
17	595	825	965	1121	1482	1909	2401	2959	3263	3583	5028	6735	8705	10938
18	613	856	1004	1169	1551	2003	2525	3116	3437	3776	5306	7114	9200	11564
19	630	887	1043	1217	1621	2098	2648	3272	3612	3969	5584	7492	9694	12190
20	647	918	1082	1265	1690	2193	2772	3429	3786	4163	5862	7871	10189	12815
21	665	949	1121	1314	1760	2287	2896	3585	3960	4356	6140	8249	10683	13441
22	682	980	1160	1362	1829	2382	3019	3742	4135	4549	6418	8628	11177	14067
23	700	1011	1199	1410	1899	2476	3143	3898	4309	4742	6697	9007	11672	14693
24	717	1041	1238	1459	1969	2571	3266	4054	4483	4935	6975	9385	12166	15318
25	734	1072	1278	1507	2038	2666	3390	4211	4658	5128	7253	9764	12661	15944
26	752	1103	1317	1555	2108	2760	3514	4367	4832	5321	7531	10142	13155	16570
27	769	1134	1356	1603	2177	2855	3637	4524	5006	5515	7809	10521	13650	17196
28	786	1165	1395	1652	2247	2950	3761	4680	5180	5708	8087	10899	14144	17822
29	804	1196	1434	1700	2316	3044	3884	4837	5355	5901	8365	11278	14639	18447
30	821	1227	1473	1748	2386	3139	4008	4993	5529	6094	8643	11656	15133	19073

2. Bridges

   Cost estimates for both log bridges and non-log bridges, where required and not included in subgrade cost estimates, are made as detailed engineering cost estimates (section 4.3.3).

4.3.2.5 Additional Stabilizing Material

Additional stabilizing material is the placement of gravel or broken rock on the road subgrade to provide stable support and a running surface for logging equipment using the road during the harvesting of tributary timber (see section 4.3.3(7)(m) for cost estimates pertaining to the use of special materials). Where stabilizing material developed during the subgrade or ditch construction is insufficient, a cost estimate for additional stabilizing material to be trucked in from selected borrow pits may be included in the appraisal.

Unit Cost Estimate

The unit cost estimate ($/km) for the additional stabilizing material includes:

- borrow pit preparation,
- rock drilling, explosives, loading of explosives and blasting,
- loosening and/or pushing materials in borrow pits when required (e.g., compacted or cemented gravel, oversize material, etc.),
- loading gravel trucks,
- truck hauling, and
- spreading and compacting the material.

The cost estimates assume borrow pits are located adjacent to the road side and are not part of the subgrade excavation. If a new road needs to be constructed to access the borrow pit, then an access road cost estimate is required in addition to the in-place unit cost estimates.

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(7)(o)
2	19823
3	9238 + (1066 * D) + (11271 * Q)
4	7504 + (679 * D)
5	8458
6	13104 + (774 * D)
7	13104 + (774 * D)
8	9673
9	13222 + (1473 * D)
10	10942
11	10942
12	10942

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)

Q = 1 if quarried or ripped rock, otherwise Q = 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 or fencing are required to mitigate the impacts resulting from harvesting on the cutting authority area, the following cost estimates apply:

   a. Cattle Guards $6147 each

b.	Remedial Fences and Wing Fences	$1,224 per 100 m (post and wire, post and rail and/or log snake fence construction only), used to mitigate the removal of natural range barriers
c.	Logging Debris Fences	$250 per 100 m (logging debris used to protect sensitive riparian areas within a cut block)

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

	$3,076 per single pipe crossing
	$3,085 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 must be estimated by preparing a detailed engineering cost estimate. The regional manager may approve standardized procedures for preparing cost estimates for those activities listed in subsection (7) of this section for use in projects as listed below.

2. Where specific development projects involve detailed engineering cost estimates, the district manager must be advised of project details no later than 60 days before the start of work on the project, unless otherwise agreed to between the district manager and the licensee.

3. For appraisal purposes, development project costs for ECE's are made on the basis of

    a. 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

    b. for costs incurred prior to the appraisal data submission, the equipment and labour rates specified in Appendix I at the time the costs were incurred. Otherwise, use the equipment and labour rates specified in Appendix I at the time of the appraisal data submission.

    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(4) (using more accurate on site information) the new detailed engineering cost estimate replaces the original (used in the initial appraisal).

    a. 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.

    b. 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 must be used in the ECE as determined by the person who determines the stumpage rate.

6. Where road sections estimated using an ECE 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 placement 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.

7. 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 m^3 of harvested Crown timber hauled over them annually for at least ten years.

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

    c. When rock percent as calculated in section 4.3.2.2(4) is greater than 50%, 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(10).

    g. Structural maintenance of bridges, substructure and cribwork.

    h. Road Reactivation activities necessary to re-open a road where there were no prior road management obligations.

i. Reconstruction of roads and pertinent structures required to return the subgrade or structure to the standard that existed at the time of original construction. Cost estimates for reconstruction are not to exceed the tabular cost for new construction under similar conditions.

j. Upgrade of roads and pertinent structures resulting in changes to the standard of the existing road and/or structure, including changes to the width of the running surface, horizontal and vertical realignment, additional culverts, lengthening of existing pullouts or adding additional pullouts where not required by the road standard or use of the road at the time of original construction. Blasting, or major switch back re-alignment is not restricted by the minimum 0.100 km section length requirement.

k. i. Placement 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.

l. 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.

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

n. 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).

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

p. The costs of designing and constructing a forwarding road, where the timber pricing co-ordinator is satisfied that when included in an appraisal it will result in an appraisal with 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.

8. 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.

9. 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 and for pipe culverts greater than 1.8 m in diameter or 30 m in length regardless of diameter: 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.

10. 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 and on or after April 1, 2013).

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.

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

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

4.3.3.1 Trending of Detailed Engineering Costs

Detailed engineering costs are not trended.

4.4 Road Management

Where the licensee is obliged to carry out road management activities, the road management cost estimate includes but is not limited to, costs for the following:

a. all access management
b. all deactivation
c. bridge re-decking/wearing surface replacement
d. brushing
e. cattle guard cleanout
f. cross ditch construction
g. culvert removal
h. culvert repairs and thawing
i. culvert replacement
j. ditching
k. dust control
l. grading
m. grass seeding
n. minor flood and storm damage repair
o. non-structural maintenance of bridges
p. road ripping
q. road use charges paid to other licensees
r. roadside treatments
s. sanding
t. seasonal erosion control
u. sign maintenance
v. slough removal
w. snowplowing and refreezing
x. spot gravelling (< 0.3 km distance)
y. water bar construction (seasonal)

The cost estimate for all road management carried out on logging operations depends on the geographic location of the cutting authority area (refer to Table 4-3).

Cutting authorities issued under forms of tenure not located administratively within a tree farm licence area or timber supply area will be assigned the road management cost estimate for the TFL or TSA/supply block in which the cutting authority is geographically located.

Table 4-3 Road Management Cost Estimates

Area	TFL #	TSA	TSA #	Supply Block	$/m^3
North		Bulkley	3	All	4.15
		Cascadia	45	9, 10 & 11	4.15
		Cassiar	4	All	4.15
		Dawson Creek	41	All	1.26
		Fort Nelson	8	All	1.26
		Fort St. John	40	All	1.26
		Kalum	10	All	4.15
		Kispiox	12	All	4.15
		Lakes	14	All	1.99
		Mackenzie	16	All	2.27
		Morice	20	All	1.99
		Nass	43	All	4.15
		Pacific	44	28-A, 28-B	4.15
		Prince George	24	A, B	1.27
		Prince George	24	C	0.91
		Prince George	24	D	1.36
		Prince George	24	E, F, I	1.77
		Prince George	24	G, H	1.87
	1				4.15
	30				1.87
	41				4.15
	48				1.26
	53				1.87
South		100 Mile House	23	A, B, C, D	1.48
		100 Mile House	23	E, F, G. H	1.63
		Arrow	1	All	2.31
		Boundary	2	C, D, G	2.31
		Boundary	2	E, F	2.71
		Cascadia	45	1, 2, 3 & 4	2.31
		Cascadia	45	5, 6, 7 & 8	1.87
		Cranbrook	5	All	1.72
		Golden	7	All	3.34
		Invermere	9	All	1.72
		Kamloops	11	1	1.87
		Kamloops	11	2, 3, 4	1.72
		Kootenay Lake	13	All	2.08
		Lillooet	15	All	4.15
		Merritt	18	All	1.67
		Okanagan	22	1, 2, 3	2.71
		Okanagan	22	4, 5, 6, 7	3.27
		Okanagan	22	8, 9	3.34
		Quesnel	26	A, B, C, D	1.01
		Quesnel	26	E, F, G, H, I	1.87

Area	TFL #	TSA	TSA #	Supply Block	$/m^3
		Revelstoke	27	All	3.34
		Robson Valley	17	All	1.87
		Williams Lake	29	A, B, C, D, E, I	1.48
		Williams Lake	29	F, G, H, J	1.48
		Williams Lake	29	K, L, M, N	1.63
	3				2.31
	*5[1]				1.77
	8				2.71
	14				1.72
	18				1.87
	23				2.31
	33				3.34
	35				1.72
	49				3.27
	52				1.87
	55				3.34
	56				3.34
	59				2.71

[1] That portion of TFL 52 that was within the former TFL5

4.4.1 Road and Land Use Charges

Prior to a road or land use charge being included in the TOA, the licensee must:

a. submit a "Request for Approval of a Road Use Charge" form with the appraisal data submission; and

b. receive written approval of the road or land use charge from the regional manager.

1. Charges as a Share of Road Management

a. No recognition is made of such charges. The road management cost estimate in section 4.4 includes all relevant costs whether incurred directly by the licensee or by payment to another party for services performed.

2. Charges Other Than for Road Management

There are three main categories of road status:

a. Forest Service Roads

No road use charges will be included in the TOA for a road that is declared, determined, built, maintained or modified by the provincial government.

b. Permitted Roads

No road use charges will be included in the TOA for roads built on Crown land, authorized by road permit or other cutting authority documents. This category also includes foreshore leases, camp areas and dryland sorts.

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 an agent of either, may be included in the TOA 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 forest legislation and must be proven through the presentation of auditable documents.

3. Other Land Use Charges

Only non-governmental land use charges may be included in the TOA.

4.4.2 Final Road Management (FRM)

The Final Road Management (FRM) cost estimate is determined as follows:

1. For cruise based cutting authorities:

$$FRM\ (\$/m^3) = RM\ (\$/m^3) + RU\ (\$/m^3)$$

2. For scale based cutting authorities:

$$IRM\ (\$/m^3) = \frac{RM\ (\$/m^3) * [TNCV\ (m^3) + D\ (m^3)]}{TNCV\ (m^3)}$$

$$IRU\ (\$/m^3) = \frac{RU\ (\$/m^3) * [TNCV\ (m^3) + D\ (m^3)]}{TNCV\ (m^3)}$$

$$FRM\ (\$/m^3) = IRM\ (\$/m^3) + IRU\ (\$/m^3)$$

Where:

IRM	=	Interim Road Management cost estimate
IRU	=	Interim Road and Land Use Charges
RM	=	Road Management cost estimate from table 4-3
RU	=	Road and land use charges applicable under section 4.4.1
TNCV	=	Total Net Coniferous Volume from the cruise
D	=	Total Net Deciduous Volume from the cruise

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 to which the basic silviculture cost estimate may be applied in the appraisal is the gross silviculture area (GSA). The GSA includes NMA from the cruise and any other portion of the cutting authority area not included in the NMA, where the licensee has an obligation to establish a free-growing stand.

3. Table 4-4 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 4-4 for the primary and secondary BEC combination identified in the appraisal data submission based on their respective % by net merchantable area identified in the appraisal data submission.

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

$$\text{Basic Silviculture } (\$/m^3) = \frac{\left[\text{NMA} * \text{Cost} * \left(\frac{\text{CAPCUT\%}}{100}\right) * 1.25\right] + \left[(\text{GSA} - \text{NMA}) * \text{Cost}\right]}{(\text{TNCV or TNCRV})^1}$$

Where:

NMA	=	Net merchantable area (ha). This area must be the same area directly attributable to the appraised Total Net Cruise Volume for the cutting authority.
Cost	=	Prorated BECzone/subzone/variant cost ($/ha) from Table 4-4
TNCV	=	Total Net Coniferous Volume (m^3).

[1] For scale based CAs, use TNCV. For cruise based CAs use TNCRV.

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.

TNCRV = Total Net Cruise Volume (m^3).

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% based on the net volume measured to the Interior Standard Timber Merchantability Specifications (section 1.5).

Partial cut areas that have less than 90% volume removal are not to be averaged with those areas that are equal to or greater than 90%. 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.

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

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

CAPCUT = Cutting Authority (CA) partial cut %. If CAPCUT%>80% CAPCUT% = 80, otherwise:

CAPCUT% = (CA TNCRV/CA Gross TNCRV) * 100

CA Gross TNCRV(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))

Where:

PCUT	=	Logging method PCUT (%)
CAPCUT	=	Cutting Authority (CA) partial cut percent
V	=	Harvest Method Volume (m^3) required to be logged by each system
Heli (C)	=	helicopter logging (clear cut)
Heli (P)	=	helicopter logging (partial cut)
Horse(C)	=	horse logging (clear cut)
GS (C)	=	ground skidding (clear cut)
GS (P)	=	ground skidding (partial cut)
OC(C)	=	overhead cable logging (clear cut)
OC(P)	=	overhead cable logging (partial cut)
SK(C)	=	skyline logging (clear cut)

4.5.1 Root Disease Control

1. Costs for root disease control may only be included in the calculation of the TOA when the treatment is required in a Site Plan, is indicated on the appraisal map, or meets the requirements in this manual.
2. The cost estimates are determined on the basis of information at hand using the procedures approved by the region or Timber Pricing Branch.

4.5.2 Total Silviculture Cost Estimate

$$Total\ Silviculture\ (\$/m^3) = Basic\ Silviculture\ (\$/m^3) + \frac{Root\ Disease\ Control\ (\$)}{TNCV\ or\ TNCRV\ (m^3)}^{1}$$

[1] For scale based CAs, use TNCV. For cruise based CAs, use TNCRV.

Table 4-4 BEC Silviculture Cost Estimates*

BEC Zone	Subzone	Variant	$/ha
BWBS	**un**		**1119**
BWBS	dk		1119
BWBS	dk	1	1119
BWBS	dk	2	1119
BWBS	mk		1119
BWBS	mw		1119
BWBS	mw	1	1149
BWBS	mw	2	997
BWBS	vk		1119
BWBS	wk	1	1076
BWBS	wk	2	1076
BWBS	wk	3	1076
CWH	**un**		**674**
CWH	vh	1	674
CWH	vh	2	674
CWH	vm		674
CWH	vm	1	674
CWH	vm	2	674
CWH	vm	3	674
CWH	wh	1	674
CWH	wh	2	674
CWH	wm		674
CWH	ws	1	674
CWH	ws	2	674
CWH	xm	1	674
CWH	xm	2	674
ESSF	**un**		**1079**
ESSF	dc	1	1152
ESSF	dc	2	1202
ESSF	dcp	1	1079
ESSF	dcp	2	1079
ESSF	dk		853
ESSF	dk	1	853
ESSF	dk	3	853
ESSF	dk	4	853
ESSF	dkp		1079

BEC Zone	Subzone	Variant	$/ha
ESSF	dku		1079
ESSF	dm		1079
ESSF	dv		1079
ESSF	dvp		1079
ESSF	mc		1079
ESSF	mcp		1079
ESSF	mk		1079
ESSF	mkp		1079
ESSF	mm	1	1079
ESSF	mm	2	1079
ESSF	mmp	1	1079
ESSF	mmp	2	1079
ESSF	mv	1	616
ESSF	mv	2	739
ESSF	mv	3	913
ESSF	mv	4	739
ESSF	mvp	1	1079
ESSF	mvp	2	1079
ESSF	mvp	3	1079
ESSF	mvp	4	1079
ESSF	mw		1061
ESSF	mwp		1079
ESSF	vc		3615
ESSF	vc	2	3615
ESSF	vcp		1079
ESSF	vv		1079
ESSF	vvp		1079
ESSF	wc	1	1781
ESSF	wc	2	1363
ESSF	wc	3	1608
ESSF	wc	4	1661
ESSF	wcp	2	1079
ESSF	wcp	3	1079
ESSF	wcp	4	1079
ESSF	wk	1	1243
ESSF	wk	2	970

BEC Zone	Subzone	Variant	$/ha
ESSF	wm		1768
ESSF	wmp		1079
ESSF	wv		1079
ESSF	wvp		1079
ESSF	xc		1071
ESSF	xc	1	1071
ESSF	xcp		1079
ESSF	xv	1	1079
ESSF	xv	2	1079
ESSF	xvp	2	1079
ICH	**un**		**1569**
ICH	dk		1569
ICH	dm		1569
ICH	dw		1533
ICH	dw	1	1533
ICH	dw	2	1451
ICH	mc	1	1569
ICH	mc	2	1569
ICH	mk	1	1148
ICH	mk	2	1416
ICH	mk	3	1155
ICH	mm		1569
ICH	mw	1	1651
ICH	mw	2	1700
ICH	mw	3	1546
ICH	vc		1569
ICH	vk	1	3371
ICH	vk	2	3085
ICH	wc		1569
ICH	wk	1	2439
ICH	wk	2	2212
ICH	wk	3	2212
ICH	wk	4	2212
ICH	xw		1569
IDF	**un**		**790**
IDF	dk	1	945
IDF	dk	2	1034
IDF	dk	3	457
IDF	dk	4	486

BEC Zone	Subzone	Variant	$/ha
IDF	dm	1	1038
IDF	dm	2	532
IDF	dw		790
IDF	mw	1	1535
IDF	mw	2	1371
IDF	ww		790
IDF	xh	1	932
IDF	xh	2	932
IDF	xh	4	932
IDF	xm		790
IDF	xw		790
MH	**un**		**1510**
MS	**un**		**780**
MS	dc	1	780
MS	dc	2	780
MS	dk		854
MS	dk	1	854
MS	dk	4	854
MS	dm	1	877
MS	dm	2	976
MS	dv		780
MS	xk		823
MS	xk	1	819
MS	xk	2	819
MS	xv		415
PP	**un**		**70**
PP	dh	1	70
PP	dh	2	70
PP	wh	1	70
PP	xh	2	70
SBPS	**un**		**530**
SBPS	dc		618
SBPS	mc		620
SBPS	mk		585
SBPS	xc		265
SBS	**un**		**838**
SBS	dh		838
SBS	dh	1	838
SBS	dh	2	838

BEC Zone	Subzone	Variant	$/ha
SBS	dk		846
SBS	dw	1	979
SBS	dw	2	710
SBS	dw	3	712
SBS	mc	1	864
SBS	mc	2	803
SBS	mc	3	714
SBS	mh		838
SBS	mk	1	802
SBS	mk	2	771
SBS	mm		940
SBS	mw		1056
SBS	vk		838
SBS	wk	1	1077
SBS	wk	2	1162
SBS	wk	3	1017
SWB	**un**		**1158**
SWB	dk		1158
SWB	dks		1158
SWB	mk		1158
SWB	mks		1158
SWB	vk		1158
SWB	vks		1158

* The dollar per hectare ($/ha) cost estimates are net of overhead

4.6 Low Grade Percent Adjustment

1. The POA low grade percent adjustment by timber species as shown in Tables 4-5 and 4-6 must 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 must be the percent adjustment by timber species by the POA to which the cutting authority area is appraised. Where the Total Net 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 4-6 is used. For cutting authorities with less than 35% red and grey MPB attacked Lodgepole pine, the adjustment is used from Table 4-5.

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 Volume on the cutting authority area.

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

Table 4-5 Point of Appraisal (POA) Low Grade Percent Adjustment by Timber Species (Cutting Authorities with Less than 35% R&G MPB Damage see 4.6(2))

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
100 Mile	0.4880	0.2894	0.0749	0.5407	0.0834	0.5719	0.2957	0.4276	0.3276
Adams Lake	0.2179	0.1995	0.0407	0.1167	0.0917	0.3325	0.0902	0.2723	0.3276
Armstrong	0.3206	0.1727	0.0610	0.1703	0.0983	0.3527	0.1062	0.4278	0.3276
Bear Lake	0.3804	0.9228	0.2348	0.7271	0.0834	0.7493	0.1860	0.4276	0.3276
Burns Lake	0.2978	0.9228	0.1187	0.6185	0.0834	0.4297	0.1582	0.4276	0.3276
Canal Flats	0.1757	0.2266	0.1007	0.2569	0.0882	0.1679	0.0754	0.4278	0.3160
Canoe	0.2116	0.1906	0.0366	0.2324	0.0681	0.2983	0.0766	0.2145	0.3276
Castlegar	0.4261	0.1447	0.0360	0.1591	0.0854	0.3653	0.0992	0.5805	0.3276
Chasm	0.4401	0.2894	0.0465	0.5407	0.0834	0.5777	0.2059	0.4276	0.3276
Chetwynd	0.2680	0.2222	0.0567	0.3452	0.0834	0.2829	0.1100	0.4276	0.3276
Clear Lake	0.3509	0.9228	0.1770	0.6185	0.0834	0.7318	0.1809	0.4276	0.3276
Craigellachie	0.3816	0.3454	0.0263	0.3731	0.1013	0.3397	0.1536	0.3486	0.3276
Creston	0.1070	0.0963	0.0442	0.0561	0.0748	0.1075	0.0439	0.4278	0.3276
Elko	0.1443	0.2266	0.1036	0.2569	0.1191	0.1403	0.0718	0.4278	0.3213
Engen	0.2991	0.9228	0.1187	0.6185	0.0834	0.7991	0.2174	0.4276	0.3276
Fort St. James	0.3381	0.9228	0.1187	0.6185	0.0834	0.6324	0.1814	0.4276	0.3276
Fort St. John	0.2703	0.2222	0.0567	0.3452	0.0834	0.3188	0.1163	0.4276	0.3276
Fraser Lake	0.2991	0.9228	0.1187	0.6185	0.0834	0.7991	0.2174	0.4276	0.3276
Galloway	0.1385	0.2266	0.0695	0.2569	0.0992	0.0862	0.0795	0.4278	0.3276
Grand Forks	0.3317	0.1138	0.0634	0.3464	0.0833	0.1581	0.0892	0.4278	0.3276
Houston	0.2978	0.9228	0.1187	0.6185	0.0834	0.4297	0.1582	0.4276	0.3276
Isle Pierre	0.2991	0.9228	0.1187	0.6185	0.0834	0.7991	0.2174	0.4276	0.3276
Kelowna	0.3243	0.2250	0.0596	0.2569	0.0667	0.2415	0.0904	0.4278	0.3276
Kitwanga	0.1293	0.0868	0.0567	0.3384	0.0834	0.0764	0.0253	0.4276	0.3276
Lavington	0.2919	0.1755	0.0607	0.1363	0.0812	0.3352	0.0867	0.4278	0.3276
Lumby	0.3510	0.2211	0.0508	0.2559	0.0808	0.3650	0.1103	0.6127	0.3276
Lytton	0.4265	0.2894	0.0290	0.6743	0.0834	0.3155	0.0993	0.4276	0.3276
Mackenzie	0.2709	0.9228	0.1187	0.6185	0.0834	0.4353	0.1262	0.4276	0.3276
McBride	0.1912	0.5299	0.0427	0.2569	0.0832	0.4760	0.0878	0.4278	0.3276
Merritt	0.3281	0.2266	0.0460	0.2569	0.0832	0.4107	0.1117	0.4278	0.3276
Midway	0.2556	0.2470	0.0781	0.1742	0.0895	0.2003	0.0868	0.4278	0.3276
Prince George	0.3509	0.9228	0.1770	0.6185	0.0834	0.7318	0.1809	0.4276	0.3276
Princeton	0.2892	0.2266	0.0532	0.2569	0.0832	0.2889	0.1335	0.4278	0.3276
Quesnel	0.3569	0.9228	0.0339	0.6185	0.0834	0.8838	0.1015	0.4276	0.3276
Radium	0.1327	0.1330	0.0414	0.2569	0.0724	0.1265	0.0593	0.4278	0.3276
Revelstoke	0.2885	0.3867	0.0283	0.4785	0.1511	0.2120	0.1138	0.5787	0.3276
Slocan	0.2919	0.0694	0.0400	0.1086	0.0836	0.5054	0.1016	0.5486	0.3276
Smithers	0.2610	0.9228	0.1187	0.6185	0.0834	0.2364	0.1021	0.4276	0.3276
Squamish	0.4265	0.2894	0.0290	0.6743	0.0834	0.3155	0.0993	0.4276	0.3276
Strathnaver	0.3577	0.9228	0.0597	0.6185	0.0834	0.7794	0.1203	0.4276	0.3276
Terrace	0.2305	0.0431	0.0567	0.4012	0.0834	0.0770	0.0728	0.4276	0.3276
Thrums	0.3638	0.0793	0.0428	0.1090	0.0739	0.5019	0.0985	0.4331	0.3276
Valemount	0.1912	0.5299	0.0427	0.2569	0.0832	0.4760	0.0878	0.4278	0.3276
Vanderhoof	0.2991	0.9228	0.1187	0.6185	0.0834	0.7991	0.2174	0.4276	0.3276
Vavenby	0.3552	0.1323	0.0480	0.1148	0.0832	0.4791	0.1422	0.0851	0.3276
Westbank	0.3125	0.2266	0.0614	0.2569	0.0628	0.2511	0.0898	0.4278	0.3276
Williams Lake	0.2854	0.2894	0.0990	0.5407	0.0834	0.5203	0.1656	0.4276	0.3276
Ymir	0.3313	0.0793	0.0373	0.1824	0.0499	0.3998	0.0868	0.5173	0.3276

Table 4-6 Point of Appraisal (POA) Low Grade Percent Adjustment by Timber Species (Cutting Authorities with 35% or more R&G MPB Damage see 4.6(2))

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
100 Mile	0.3766	0.1791	0.1062	0.2233	0.5769	0.6858	0.1550	0.3226	0.8364
Adams Lake	0.2740	0.6669	0.0201	0.1025	0.0647	0.4296	0.0630	0.5172	0.8364
Armstrong	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Bear Lake	0.3257	0.2123	0.1064	0.2235	0.1941	0.8582	0.1850	0.0043	0.8364
Burns Lake	0.2644	0.2123	0.0710	0.2235	0.1941	0.6669	0.1670	0.0043	0.8364
Canal Flats	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Canoe	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Castlegar	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Chasm	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
Chetwynd	0.2180	0.4030	0.0762	0.1417	0.1679	0.2517	0.0761	0.5183	0.8364
Clear Lake	0.3040	0.2123	0.0724	0.2235	0.1941	0.7627	0.1704	0.0043	0.8364
Craigellachie	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Creston	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Elko	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Engen	0.3275	0.2123	0.0710	0.2235	0.1941	0.7778	0.2003	0.0043	0.8364
Fort St. James	0.2986	0.2123	0.0648	0.2235	0.1941	0.6793	0.1669	0.0043	0.8364
Fort St. John	0.2180	0.4030	0.0762	0.1417	0.1679	0.2517	0.0761	0.5183	0.8364
Fraser Lake	0.1684	0.2123	0.0710	0.2235	0.1941	0.8193	0.1666	0.0043	0.8364
Galloway	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Grand Forks	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Houston	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Isle Pierre	0.3534	0.2123	0.0880	0.2235	0.1941	0.8172	0.2109	0.0043	0.8364
Kelowna	0.2589	0.4081	0.0710	0.1025	0.0647	0.3852	0.0738	0.5507	0.8364
Kitwanga	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Lavington	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Lumby	0.3908	0.4081	0.0694	0.1025	0.0647	0.3198	0.0885	0.5507	0.8364
Lytton	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
Mackenzie	0.2668	0.2123	0.0710	0.2235	0.1941	0.6467	0.1588	0.0043	0.8364
McBride	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Merritt	0.2173	0.4081	0.0853	0.1025	0.0647	0.3557	0.0883	0.5507	0.8660
Midway	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Prince George	0.3515	0.2123	0.0780	0.2235	0.1941	0.8105	0.2052	0.0043	0.8364
Princeton	0.2729	0.4081	0.0529	0.1025	0.0486	0.3661	0.1475	0.5507	0.8364
Quesnel	0.1964	0.2123	0.0705	0.2235	0.1941	0.6129	0.1250	0.0043	0.8364
Radium	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Revelstoke	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Slocan	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Smithers	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Squamish	0.2719	0.1791	0.0900	0.2233	0.5769	0.6669	0.1434	0.3226	0.8364
Strathnaver	0.3105	0.2123	0.0363	0.2235	0.1941	0.7423	0.1325	0.0043	0.8364
Terrace	0.2876	0.2123	0.0710	0.2235	0.1941	0.6828	0.2106	0.0043	0.8364
Thrums	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Valemount	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Vanderhoof	0.2900	0.2123	0.0154	0.2235	0.1941	0.7683	0.1852	0.0043	0.8364
Vavenby	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364
Westbank	0.2589	0.4081	0.0710	0.1025	0.0647	0.3852	0.0738	0.5507	0.8364
Williams Lake	0.2998	0.1791	0.0967	0.2681	0.7827	0.5856	0.1046	0.3226	0.8364
Ymir	0.2782	0.1884	0.0553	0.1014	0.0503	0.4966	0.0921	0.1825	0.8364

4.7 Market Logger Cost

1. The market logger cost (MLC) is used in the calculation of the tenure obligation adjustment in an appraisal or reappraisal of a cutting authority area.

2. MLC is expressed in $/m^3 and is calculated from the MPS data set

$$MLC = \left[\left(\frac{1.30}{1 - LG}\right) + 0.08\right] x \left[\frac{CPI}{138.8}\right]$$

Where:

$1.30/m^3 is the average market logger development cost for the auction dataset.

LG is the low grade percent adjustment from Tables 4-5 or 4-6 (for cruise based cutting authorities, LG =0).

$0.08/m^3 is the market logger specified operation cost from the auction dataset.

CPI is the monthly BC Consumer Price Index (refer to section 3.3).

138.8 is the average CPI for the cost base (2012/13).

4.8 Return to Forest Management (RFM)

The return to forest management factor is 1.031.

4.9 Final Tenure Obligation Adjustment

1. The tenure obligation adjustment is used in the determination of the stumpage rate for a cutting authority other than a timber sale licence entered into under section 20 of the *Act*.

2. The final tenure obligation adjustment (FTOA) is calculated as follows:

$$FTOA = \left[\frac{TTOA)}{1 - LG}\right] \times RFM - MLC$$

$$TTOA = (FFMA + DC + FRM + TS)\ x\ \left[\frac{CPI}{138.8}\right]$$

Where:

TTOA	=	Total Tenure Obligation Adjustment ($/m^3)
FFMA	=	Final Forest Management Administration cost ($/m^3)
DC	=	Total Development cost ($/m^3)
FRM	=	Final Road Management cost ($/m^3)
TS	=	Total Silviculture cost ($/m^3)
LG	=	Low Grade percent adjustment (for cruise based cutting authorities, LG =0)
RFM	=	Return to Forest Management
MLC	=	Market Logger Cost ($/m^3)
CPI	=	Monthly BC Consumer Price Index (see section 3.3)

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5 Stumpage Rate Determination

5.1 Stumpage Rate Determination for a Cutting Authority Entered into Under a BCTS Licence

1. Sections 5.1.1 through 5.1.3 are the policies and procedures for determining the upset for a cutting authority that is entered into under a BCTS licence.

2. a. The Market Pricing System for BCTS can only be used in the appraisal of a BCTS licence where data is available to do a full appraisal.

   b. Where the data is not available to do a full appraisal of a cutting authority area, the appraisal must use the procedures outlined in chapter 6 of this manual.

3. a. All upsets for section 20 timber sale licences advertised on or after November 1, 2003, and subject to Section 6.7 of this manual Forestry Licences to Cut entered into under section 47.6(3) of the *Forest Act* are fixed for the term and all extensions except where:

      i. a reappraisal is done under section 2.2.1(2)(e) due to sudden and severe damage, or

      ii. a Minister's directed reappraisal is done under section 2.2.2.

5.1.1 Upset Stumpage Rates (Upset)

1. The upset can either be an upset rate ($/m^3) or an upset value ($).

2. The variable cost to prepare the timber for sale (VCU) is calculated by the timber sales manager.

3. Except as otherwise provided in this section the upset for a timber sale licence shall not be less than the greater of either:

   a. The indicated upset determined by the regional revenue staff under section 5.1.2, or

   b. The VCU

   Unless approved by the Executive Director, BCTS.

4. Where applications for a timber sale licence with an upset determined under subsections (3) or (6) of this section have been invited but no applications have been received, the upset for the re-advertised timber sale shall be no less than the VCU.

5. a. The upset for decked timber or partially harvested timber shall be the upset requested by the timber sales manager.

   b. If the Timber Sales Manager intends to sell the decked timber or partially harvested timber competitively as a lump sum, the upset value is the upset value requested by the Timber Sales Manager multiplied by the volume of the decked or partially harvested timber as determined by an authorised scaler using a method approved by the minister.

6. The upset for a timber sale licence where the Total Net Deciduous Volume to be harvested on the cutting authority area is equal to or greater than sixty percent of the Total Net Cruise Volume on the cutting authority area shall be determined in accordance with section 5.1.1(3).

7. A timber sale licence where the timber on the cutting authority area does not meet the criteria in section 6.9 requires the approval of the Executive Director, BCTS before it can be cruise based.

5.1.2 IU Calculation

IU = FEWB x (1- DF)

or

IU = SALVAGE x (1-DF)

Where: IU = Indicated upset

FEWB = Final estimated winning bid from section 3.7

SALVAGE = Stand-as-a-whole stumpage rate from section 6.4.3(3)

DF = 0.30

Where the IU calculated under this section is less than $\$0.25/m^3$, then the IU must be $\$0.25/m^3$.

5.1.3 Total Stumpage

1. The total stumpage is the total of the upset plus the bonus, if any, that must be paid by the licensee.

2. Except as otherwise provided in this section, where the upset is determined under subsections 3 and 5(a) of section 5.1.1, and

   a. The timber sale is scale based for billing, the total stumpage applies to Grades 1 and 2 coniferous sawlogs, or

   b. The timber sale is cruise based for billing, the total stumpage payable applies to the Total Net Cruise Volume; with the exception of cruise-based salvage cutting authorities where the total stumpage payable applies to the total net merchantable volume.

3. Where the upset is determined under 5(b) of section 5.1.1, the total stumpage applies to the entire volume of decked or partially harvested timber.

4. Where the upset is determined under subsection 6 of section 5.1.1, and

    a. The timber sale is scale based for billing, the total stumpage applies to Grades 1 and 2, coniferous and deciduous sawlogs, or

    b. The timber sale is cruise based for billing, the total stumpage applies to the Total Net Cruise Volume.

5.2 Stumpage Rate Determination for a Cutting Authority Other than a Cutting Authority Entered into Under a BCTS Licence, or a Cutting Authority for Which a Stumpage Rate is Determined Under Chapter 6

Sections 5.2.1 through 5.2.3 are the policies and procedures for determining a stumpage rate for a cutting authority other than a cutting authority entered into under a BCTS licence or a cutting authority for which a stumpage rate is determined under chapter 6.

5.2.1 Indicated Rate (IR)

1. The IR is the difference between the final estimated winning bid (FEWB) calculated for the cutting authority under section 3.7 and the tenure obligation adjustment (TOA) calculated under section 4.9.

2. Expressed as an equation:

$$IR = FEWB - FTOA$$

5.2.2 Reserve Stumpage

The reserve stumpage for a cutting authority is determined by selecting:

1. The greater of:

   a. the indicated rate, or
   b. the minimum stumpage rate.

2. The greater of:

   a. the upset stumpage rate or value, or
   b. the minimum stumpage rate or equivalent value.

5.2.3 Stumpage Rate

1. Unless otherwise provided in subsection 2 of this section, the total stumpage is the sum of the reserve stumpage plus any administration and silviculture levies which may apply under section 5.3.

2. If the cutting authority is awarded on the basis of competition, the total stumpage is:

   a. the sum of the reserve stumpage plus the bonus bid, or
   b. the sum of the reserve stumpage plus the bonus offer.

5.3 Levies

1. Where the Crown is responsible for basic silviculture on a cutting authority, a silviculture levy may be added to the stumpage rate or the reserve stumpage rate for any or all species and grades.

2. The levy is equal to the district manager's or timber sales manager's cost estimate of silviculture costs to be incurred by the Crown.

3. Development/Administration Levy

   a. A development levy may be added to the reserve stumpage rate. The development levy is equal to the appraisal cost estimate of road construction provided by the Crown as approved by the regional manager.

   b. An administration levy may be added to the reserve stumpage rate. The administration levy is equal to the district manager's cost estimate of administration provided by the Crown for preparing a Forestry Licence to Cut for salvage timber. An administration cost estimate is made for every cutting authority where the district office has to prepare all details of a Forestry Licence to Cut for salvage. No levy is applicable to professional applications.

      The amount of any levy may be re-determined at reappraisal only

6 Miscellaneous Policies

6.1 Coniferous Average Sawlog Stumpage Rates by Forest Zone and Species

1. Each of the following forest zones referred to in Tables 6-1, 6-2, 6-4, 6-5 and 6-6 is made up of the following forest districts and or geographic units:
    i. North Central Zone - Fort St. James, Mackenzie, Nadina, Prince George (less Robson Valley TSA), Quesnel and Vanderhoof.

    ii. North East Zone - Fort Nelson and Peace.

    iii. North West Zone - Coast Mountain (excluding that portion that lies geographically within the North Coast Timber Supply Area), Skeena Stikine.

    iv. South Central Zone – Williams Lake TSA Blocks A, B, C, D, E & I.

    v. South East Zone - Okanagan Shuswap, Rocky Mountain, Selkirk, and Thompson Rivers (plus Robson Valley TSA).

    vi. South West Zone - 100 Mile House, Cascades, and Williams Lake TSA Blocks F, G, H, and J to N.

2. Where a species of coniferous timber is not listed in Table 6-1, 6-2, 6-4 and 6-5, the rate that must be used for that species of timber is the rate listed in the column headed as OTHER.

Table 6-1 Coniferous Average Sawlog Stumpage Rates in $/m^3 by Forest Zone and Species

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	W. PINE	Y. PINE	OTHER[1]
North Central	21.49	-	27.77	23.74	-	17.57	22.42	-	-	21.45
North East	4.41	-	-	-	-	8.50	8.54	-	-	8.40
North West	7.77	3.42	-	7.21	-	12.19	8.41	-	-	8.72
South Central	0.41	-	0.77	-	-	6.70	10.79	-	-	5.57
South East	17.01	21.12	21.67	17.72	20.12	18.73	17.57	18.52	14.77	19.21
South West	17.77	20.86	20.78	16.37	-	25.68	21.38	19.97	-	22.60

[1] Average for the Forest Zone

6.1.1 Community Forest Agreements

1. The sawlog stumpage rate for each species of coniferous timber harvested under any cutting authority issued under a Community Forest Agreement is the rate prescribed in Table 6-2 for the forest zone in which the cutting authority area is located.

2. Section 1.4(1)(d), sections 6.1.2 through 6.5 and sections 6.7 through 6.9 do not apply to Community Forest Agreement cutting authorities.

3. The stumpage rate determined under this section is redetermined on August 1 of each year in accordance with this section.

6.1.2 Woodlot Licences

1. Except as provided in subsection (2) of this section, the sawlog stumpage rate for each species of coniferous timber harvested under a cutting permit issued for a woodlot licence with an effective date after November 30, 2008 is the rate prescribed in Table 6-2 for the forest zone in which the cutting authority area is located.

2. Where a woodlot licence cutting permit has been issued with an effective date after November 30, 2008 for the purpose of using amounts from an eligible extended road amortization agreement in an appraisal, then the stumpage rate will be determined using the procedures in this manual excluding this section.

3. Except as provided in subsection (4) of this section, the sawlog stumpage rate for coniferous timber harvested under a road permit issued for a woodlot licence is the rate prescribed in Table 6-2 for the forest zone in which the timber mark applies.

4. Where a woodlot has an eligible extended road amortization agreement before December 1, 2008 the sawlog stumpage rate for a road permit with an effective date on or after December 1, 2008 is calculated using the procedures in section 6.3.

5. The sawlog stumpage rate for each species of coniferous timber harvested under a blanket salvage cutting authority issued for a woodlot licence is the rate prescribed in Table 6-2 for the forest zone in which the blanket salvage cutting authority applies.

6. The stumpage rate determined under subsections (1), (3) and (5) of this section is redetermined on August 1, each year in accordance with this section.

7. Except as provided in subsections (2) and (4) of this section, sections 1.4(1)(d), 6.1.1, 6.1.3 through 6.5, and sections 6.7 through 6.9 do not apply to Woodlot Licence cutting authorities.

Table 6-2 Community Forest Agreements and Woodlot Licences: Coniferous Average Sawlog Stumpage Rates in $/m^3

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	W. PINE	Y. PINE	OTHER[1]
North Central	3.22	-	4.17	3.56	-	2.64	3.36	-	-	3.22
North East	0.66	-	-	-	-	1.28	1.28	-	-	1.26
North West	1.17	0.51	-	1.08	-	1.83	1.26	-	-	1.31
South Central	0.25	-	0.25	-	-	1.01	1.62	-	-	0.84
South East	2.55	3.17	3.25	2.66	3.02	2.81	2.64	2.78	2.22	2.88
South West	2.67	3.13	3.12	2.46	-	3.85	3.21	3.00	-	3.39

[1] Average for the Forest Zone

6.1.3 Incidental Conifer in Deciduous Leading Stands

1. Except as provided in section 5.1.1(6), this section applies to coniferous timber in a cutting authority area where the total estimated volume of all deciduous species to be harvested is greater than 70% of the total estimated volume of all species to be harvested.

2. a. The stumpage rate for coniferous timber is the rate prescribed in Table 6-3 for the smaller of the area of the forest district/district portion, timber supply area, region, or Area in which the entire cutting authority area for the tenure is located.

   b. Where the Crown is responsible for basic silviculture on the cutting authority area, the stumpage rate for each species of coniferous timber must be the sum of the rate determined under paragraph (a) of this subsection and the silviculture levy determined under section 5.3.

3. A stumpage rate determined under subsection 2 must be redetermined on June 1, of each year in accordance with this section.

4. Notwithstanding subsection (2) in this section, the stumpage rate may be determined through a full appraisal in accordance with chapters 1, 2, 3, 4, and 5.

5. 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.

6.2 Cutting Authorities With 5000 m^3 or Less Volume

1. Where the total estimated coniferous volume to be harvested in a cutting authority area is 2000 m^3 or less, and where the agreement under which the cutting authority authorizing harvesting on the cutting authority area has been issued has a coniferous allowable annual cut of not more than 3000 m^3, or no coniferous annual allowable cut:

    a. The stumpage rate for each species of coniferous timber in the cutting authority area must be determined using the stumpage rate in Table 6-1 for the forest zone in which the cutting authority area is located, except that,

        i. Where the agreement holder is not required to establish a free growing crop of trees on the cutting authority area, the stumpage rate for each species of coniferous timber must be the sum of the rate determined under paragraph (a) of this subsection and the basic silviculture cost[1] for the species in the applicable Interior Area, or

        ii. Where the Crown is responsible for basic silviculture on the cutting authority area, the stumpage rate for each species of coniferous timber must be the sum of the rate determined under paragraph (a) of this subsection and the silviculture levy determined under section 5.3.

2. Except as provided in subsection 4 of this section or section 6.2.1, where the total estimated coniferous volume to be harvested on a cutting authority area is 5000 m^3 or less, and the cutting authority authorizing harvesting on the cutting authority area is a competitively awarded forestry licence to cut, other than a BCTS licence:

    a. Except as provided in paragraph (d) of this subsection, the upset stumpage rate for each species of coniferous timber in the cutting authority area will be 70 % of the stumpage rate for that species in Table 6-1 for the forest zone in which the cutting authority area is located, except that,

    b. Where applications for a forestry licence to cut have been invited with upset stumpage rates determined under this subsection and no applications have been received, the upset stumpage rate for each species of coniferous timber must be the rate requested by the district manager and approved by the regional manager.

    c. Where the regional manager does not anticipate that applications for a forestry licence to cut will be received due to market conditions or timber profile, the upset stumpage rate for each species of coniferous timber must be the rate requested by the district manager and approved by the regional manager.

[1] From the Interior Basic Silviculture Costs published quarterly and available on the Timber Pricing Branch website.

d. Where the Crown is responsible for basic silviculture on the cutting authority area, the upset stumpage rate for each species of coniferous timber must be the sum of the rate determined under paragraphs (a), (b) or (c) of this subsection and the basic silviculture levy determined under section 5.3.

3. Where the cutting authority authorizing harvesting is a competitively awarded licence to cut other than a BCTS licence, and

   a. The Total Net Cruise Volume is 5000 m^3 or less, and

   b. The cutting authority has been approved as cruise based under section 106 of the *Act*,

   the upset must be no less than the district's cost to prepare the timber for sale as calculated by the district manager and the total stumpage must apply to all species of timber on the cutting authority area.

4. An upset stumpage rate determined under subsection (2) of this section must not be less than the district's variable cost per cubic meter to prepare the timber for sale as calculated by the district manager.

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

6. a. Notwithstanding subsections (1), (2) or (3) of this section, where the total coniferous volume to be harvested on a cutting authority area is 5000 m^3 or less, the stumpage rate may be determined through a full appraisal in accordance with chapters 1, 2, 3, 4 and 5.

   b. Where the stumpage rate is determined in accordance with this subsection the total stumpage rate is fixed for the term and all extensions.

6.2.1 Forestry Licences to Cut for Specific Purposes (No Volume Limit)

1. a. Where the cutting authority is a forestry licence to cut awarded to the highest bidder, other than a BCTS licence and it has been issued:

      i. For the purpose of protecting a community from wildfire as prescribed under section 1 of the Licence to Cut Regulation, or
      ii. For the purpose of removing damaged timber from natural stands or plantations where:

         aa. at least 70% of the total estimated volume of all species on the cutting authority area is Pine that has been damaged by mountain pine beetle, and either

         bb. at the time of death, the age of the damaged timber was not more than 60 years, or

         cc. a field survey indicates that the average stems per hectare on the cutting authority area is greater than 2000 with a minimum diameter

at breast height of 5 centimetres, or

iii. For the purpose of utilizing post harvest material in piles on landings or at roadside after a waste assessment has been made.

Then, the upset stumpage rate must be the rate approved by the Regional Manager.

b. Where the invitation for applications for a forestry licence to cut awarded to the highest bidder referred to in paragraph (1)(a) of this subsection requires a bonus offer, and the amount of stumpage payable will be based on a cruise instead of a scale of the timber under section 106 of the *Act*, the upset stumpage rate must be the rate approved by the Regional Manager, and must apply to the net merchantable volume on the cutting authority area.

c. Where the forestry licence to cut is issued without competition for the purposes described in paragraph (1)(a)(i) of this section the sawlog stumpage rate for such species of coniferous timber must be:

i. Except as provided in (ii), the stumpage rate in Table 6-1 for the forest zone in which the cutting authority area is located.

ii. If more than one-third of the total volume of coniferous timber on the cutting authority area is damaged timber as defined in section 6.4(3), the stumpage rate in Table 6-4 for the forest zone in which the cutting authority area is located.

iii. When the licence to cut is issued to the lowest eligible bidder on a contract issued for the purpose referred to in paragraph (1)(a)(i) of this subsection, the stumpage rate determined from the applicable paragraph (c)(i) or (c)(ii) above.

d. Where the forestry licence to cut is issued without competition meets the requirements set out in paragraph (1)(a)(ii) of this section, the coniferous sawlog stumpage rate must be $\$1.20/m^3$ when the licence to cut is issued to the lowest eligible bidder on a contract issued for the purpose referred to in paragraph (1)(a)(ii).

e. Notwithstanding any paragraph in this subsection when the timber on the cutting authority area will be scaled as chips or hogged tree material the reserve stumpage rate must be the rate from Table 6-7.

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 and must not be less than the district's variable cost to prepare the timber for sale as calculated by the district manager.

3. Notwithstanding subsections 1(c) or (d) the stumpage rate for the forestry licence to cut may be determined through a full appraisal in accordance with chapters 1, 2, 3, 4 and 5. The cruise data that is used in the appraisal may be from the cruise of a comparable cutting authority as per section 1.5.1.1.

4. Except as provided in section 2.2.2, when 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 Permit Stumpage Rates

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. This section does not apply to Community Forest Agreements in section 6.1.1, Woodlots Licences in section 6.1.2 except 6.1.2(4), or any timber in the Research Forests noted in Table 6-7.

3. A stumpage rate determined under this section, other than for a road permit for a BCTS licence under subsection (7), must be re-determined annually on June 1st in accordance with this section.

4. Except as provided in subsection (7)(b), stumpage rates determined under this section are scale based for billing.

5. Except as provided in subsections (6) and (7) of this section, the stumpage rate for a road permit must be the weighted average sawlog stumpage rate:

   a. from the table provided to the regions by Timber 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 permit cutting authority area is located, and that are issued under the licence that entitles the licensee to apply for the road permit, if there is a minimum positive scale based billed volume of 500 m^3 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 forest district/district portion, timber supply area, region, or Area in which the entire cutting authority area for the tenure is located.

6. If there are no records from which the weighted average sawlog stumpage rate may be determined under paragraphs (a) or (b) of subsection (5) of this section, then the stumpage rate, for each species of coniferous timber, is the rate in Table 6-1 for the forest zone in which the road or blanket salvage permit cutting authority area is located.

7. a. The total stumpage rate ($/$m^3$) for a road permit granted to the holder of a scale based timber sale licence entered into under section 20 of the Act must be the

same as the total stumpage rate ($/m^3) for the timber sale licence which entitled the holder to apply for the road permit.

b. The total stumpage rate ($/ha) for a road permit granted to the holder of a cruise based timber sale licence entered into under section 20 of the *Act* must be the same as the total stumpage rate ($/ha) of the timber sale licence which entitled the holder to apply for the road permit.

8. The costs of roads authorized for construction under road permits are eligible for inclusion as development cost estimates under section 4.3 in the appraisal of the licensees' first fully appraised tributary cutting authority. These roads will not be considered as existing roads under section 4.3.1.3(1).

9. Where a woodlot has an eligible extended road amortization agreement before December 1, 2008 the sawlog stumpage rate for a road permit with an effective date on or after December 1, 2008 is calculated using the procedures in this section.

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)**
Cascades	23.54	Lillooet	3.79
		Merritt	25.93
Coast Mountain (excluding North Coast Timber Supply Area)	3.93	Cascadia Blks 9,10,11	2.16
		Kalum	2.16
		Nass	6.30
		Pacific Bks 28A,28B	2.16
Nadina	15.62	Lakes	22.41
		Morice	14.60
Peace	8.40	Dawson Creek	7.03
		Fort St John	9.29
Prince George	23.84	Robson Valley	13.98
Quesnel	20.37	Cascadia Bks 5,6,7,8	20.37
		Quesnel	20.37
Rocky Mountain	16.51	Cranbrook	17.54
		Invermere	15.79
Selkirk	19.59	Arrow	20.52
		Boundary	20.70
		Cascadia Blks 1,2,3	20.52
		Cascadia Blk. 4	15.41
		Golden	19.97
		Kootenay Lake	18.79
		Revelstoke	15.41
Skeena Stikine	12.37	Bulkley	15.32
		Cassiar	3.58
		Kispiox	12.52

District/District Portion is Smallest Unit			
TSA	**Rate ($/m^3)**	**District/District Portion**	**Rate ($/m^3)**
Prince George	24.27	Fort St. James	25.30
		Vanderhoof	8.28
Williams Lake	22.27	Cariboo Chilcotin	22.27
		Williams Lake TSA Blocks, A, B, C, D, E & I	5.57

District & TSA are the same		
District	**TSA**	**Rate ($/m3)**
Fort Nelson	Fort Nelson	8.40*
Mackenzie	Mackenzie	20.95
Okanagan Shuswap	Okanagan	19.83
Thompson Rivers	Kamloops	20.40
100 Mile House	100 Mile House	11.95

*Regional rate

Region is Smallest Unit			
Area	**Rate ($/m^3)**	**Region**	**Rate ($/m^3)**
North	16.19	Northeast	8.40
		Omenica	23.15
		Skeena	11.14
South	19.73	Cariboo	19.30
		Kootenay Boundary	18.44
		Thompson-Okanagan	20.85

6.4 Salvage Timber Stumpage Rates

6.4.1 Post-Harvest Material or Damaged Timber

1. This section applies to cutting authorities issued under licences which do not have an allowable annual cut.

2. Post-Harvest Material is either:

   a. wooden culverts and bridges, or

   b. post logging residue.

3. Damaged Timber is timber that:

   a. Has been blown down,

   b. Has been damaged by fire, disease, snow press, or

   c. Will die within one year, as determined by the district manager, as a result of the affects of the mountain pine beetle, or other forest pests.

   d. Will be or has been used for trap trees and associated overflow trees.

4. Except as provided in section 6.2.1(1)(c)(ii), the criteria and methodology for the calculation of salvaged timber stumpage rates are:

   a. Post-harvest material may not be combined in the same cutting authority area with damaged timber.

   b. Except where damage to adjacent or contiguous timber occurs after harvesting is completed on the adjacent primary logging cutting permit area and the harvesting equipment has been demobilized from the area, damaged timber salvage cutting authority areas must be scattered, and not be adjacent to or contiguous with an existing cutting authority area.

   c. Except as provided in subsection (4)(d) of this section the total area of a clearcut salvage harvesting area must not exceed 5 hectares.

   d. Where salvage of only damaged stems through partial cutting will leave a stand that meets minimum stocking standards, the area harvested may be larger than 5 hectares.

   e. Salvage logging stumpage rates may only be determined for a cutting authority where more than one-third of the total estimated volume of coniferous timber to be harvested in the cutting authority area is damaged timber.

   f. Post-Harvest Material salvage may only occur after primary logging has been satisfactorily completed and residue and waste assessments have been submitted to and accepted by the Ministry.

g. Salvage cannot occur on a road right-of-way which has an active timber mark associated with it.

h. Except as provided in section 2.2.2, a stumpage rate determined under this section is fixed for the term of the cutting authority and all extensions.

5. a. The Damaged Timber sawlog stumpage rate for each species of coniferous timber is the rate in Table 6-4 for the Forest Zone in which the cutting authority area is located.

b. Where the Crown is responsible for basic silviculture on the cutting authority area, the stumpage rate for each species of coniferous timber must be the sum of the rate determined under paragraph (a) of this subsection and the silviculture levy determined under section 5.3.

6. The Post-Harvest Material sawlog stumpage rate for each species of coniferous timber is the rate in Table 6-5 for the forest zone in which the cutting authority area is located.

Table 6-4 Coniferous Average Sawlog Stumpage Rates for Salvage of Damaged Timber by Forest Zone and Species in $/m^3

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	W. PINE	Y. PINE	OTHER[1]
North Central	12.89	-	24.99	14.24	-	13.18	20.18	-	-	12.87
North East	2.65	-	-	-	-	6.38	7.69	-	-	5.04
North West	4.66	3.08	-	4.33	-	9.14	7.57	-	-	5.23
South Central	0.25	-	0.69	-	-	5.03	9.71	-	-	3.34
South East	10.21	19.01	19.50	10.63	18.11	14.05	15.81	13.89	11.08	11.53
South West	10.66	18.77	18.70	9.82	-	19.26	19.24	14.98	-	13.56

[1] Average for the Forest Zone

Table 6-5 Coniferous Average Sawlog Stumpage Rates for Salvage of Post-Harvest Material by Forest Zone and Species in $/m^3

FOREST ZONE	BALSAM	CEDAR	FIR	HEMLOCK	LARCH	L. PINE	SPRUCE	W. PINE	Y. PINE	OTHER[1]
North Central	5.37	-	13.89	5.94	-	8.79	11.21	-	-	5.36
North East	1.10	-	-	-	-	4.25	4.27	-	-	2.10
North West	1.94	2.74	-	1.80	-	6.10	4.21	-	-	2.18
South Central	0.25	-	0.39	-	-	3.35	5.40	-	-	1.39
South East	4.25	16.90	10.84	4.43	10.06	9.37	8.79	9.26	7.39	4.80
South West	4.44	16.69	10.39	4.09	-	12.84	10.69	9.99	-	5.65

[1] Average for the Forest Zone

6.4.2 Blanket Salvage Cutting Authorities

1. This section may apply to cutting authorities issued under licences with an allowable annual cut or maximum harvest volume; excluding Community Forest Agreements in section 6.1.1, Woodlots Licences in section 6.1.2, BCTS or any timber in the Research Forests noted in Table 6-7.

2. Except as otherwise provided in this section, this section applies to existing blanket salvage cutting authorities and new blanket salvage cutting authorities issued on or after June 1, 2014.

3. For blanket salvage cutting authorities that were issued prior to June 1, 2014, and any cutblocks that were amended into those cutting authorities prior to June 1, 2014, the stumpage rate for each species of coniferous timber on the cutting authority area is the stumpage rate for that species indicated in Table 6-4 for the forest zone in which the cutting authority area is located.

4. For blanket salvage cutting authorities issued on or after June 1, 2014 and any cutblocks amended into those cutting authorities or into cutting authorities issued prior to or after June 1, 2014, where the cutblocks:

    a. are restricted to a maximum of 15 hectares and in no case greater than 5,000 m^3,

    b. are issued for the purposes of harvesting damaged timber as defined in section 6.4.1(3), and

    c. are consistent with the district's forest health strategy, then

    the stumpage rate for each species of coniferous timber on the cutting authority area is the stumpage rate for that species indicated in Table 6-4 for the forest zone in which the cutting authority area is located.

5. All blanket salvage cutting authorities are scale based for billing.

6. A stumpage rate determined under this section must be re-determined annually on June 1st in accordance with this section.

6.4.3 Cruise Based Salvage Cutting Authorities

1. This section may apply to cutting authorities entered into under a Timber Sale Licence, or issued under licences with an allowable annual cut or maximum harvest volume; excluding Community Forest Agreements in section 6.1.1, Woodlots Licences in section 6.1.2, or any timber in the Research Forests noted in Table 6-7.

2. The primary purpose for the cutting authority must be the removal of Mountain Pine Beetle (MPB) attacked Lodgepole pine where:

   a. The estimated total net coniferous volume of timber on each cutblock for the cutting authority area is comprised of 75% or more grey MPB attacked Lodgepole pine[1]; and

   b. The conifer species other than Lodgepole pine must be evenly distributed throughout each cutblock.

3. The stand-as-a-whole stumpage rate on the cutting authority area is the greater of:

   a. Stumpage rate

      = BASE RATE – [1.429 * (CYCLE + (0.5 * CYCLE_INC6)) – 5.724 * ZONE 9] * CPIF - [SO's * (CPI/138.8)];

      Where:

      BASE RATE = Rate indicated in Table 6-6 for the Forest Zone in which the cutting authority is located.

      CYCLE = as defined in section 3.3 and measured in accordance with sections 3.5.1 and 3.5.2.

      CYCLE_INC6, ZONE 9, CPI, and CPIF = as defined in section 3.3.

      SO's = the sum of the transportation specified operations that apply to the transportation route from sections 3.6.1 and 3.6.2.

   b. The prescribed minimum stumpage rate.

[1] Seventy-five (75) percent or more of the estimated total net coniferous volume defined as grey attack in each cutblock, based on a professional estimate by a forest professional registered with the Association of BC Forest Professionals. The professional estimate must include a description and supporting information of how the estimate was generated.

Table 6-6 Base Rate* for Cruise Based Salvage Cutting Authorities by Forest Zone

FOREST ZONE	BASE RATE** ($/m^3)	TSL BASE RATE*** ($/m3)
North Central	12.21	21.61
North East	12.21	21.61
North West	12.21	21.61
South Central	6.38	14.12
South East	13.52	25.08
South West	12.71	23.26

* Rate prior to adjustments for transportation and zone 9

** The Base Rate for cutting authorities issued under licences with an allowable annual cut or maximum harvest volume

*** The Base Rate for cutting authorities entered into under a Timber Sale Licence

4. All cruise based salvage cutting authorities under this section are cruise based for billing.

5. The net merchantable volume per hectare for the cutting authority area must be determined using the method described in section 2.9.1 of the *Cruising Manual*.

6. The total net merchantable volume is equal to the net merchantable area multiplied by the net merchantable volume per hectare.

7. A stumpage rate determined under this section must be re-determined on June 1st of each year, starting June 1, 2016, in accordance with this section.

6.5 Decked and Partially Harvested Timber for a Cutting Authority Other than a Cutting Authority Entered Into Under a BCTS Licence

1. When decked timber only is advertised for sale to the highest bidder, the upset stumpage rate for the timber must be the total of the silviculture levy determined under section 5.3 and:

    a. The prescribed minimum stumpage rate if the timber has been decked for over three years, or

    b. 70% of the stumpage rate from Table 6-4 for the applicable species and forest zone if the timber has been decked for three years or less.

2. When decked timber only is sold directly without the use of the competitive bidding process, the stumpage rate for the timber must be the total of the silviculture levy determined under section 5.3 and:

    a. The variable cost to prepare the timber for sale if the timber has been decked for over three years, or

    b. The stumpage rate from Table 6-4 for the applicable species and forest zone if the timber has been decked for three years or less.

3. When partially harvested timber only is advertised for sale to the highest bidder the upset stumpage rate for the timber must be the total of the silviculture levy determined under section 5.3 and:

    a. The prescribed minimum stumpage rate, if three years or more have passed since the timber was felled, or

    b. 70% of the stumpage rate for the applicable species and forest zone from Table 6-5 if less than three years have passed since the timber was felled.

4. When partially harvested timber only is sold directly without the use of the competitive bidding process, the stumpage rate for the timber must be the total of the silviculture levy determined under section 5.3 and:

    a. The variable cost to prepare the timber for sale if three years or more have passed since the timber was felled, or

    b. The stumpage rate from Table 6-5 for the applicable species and forest zone if less than three years have passed since the timber was felled.

5. a. Where applications for decked timber or partially harvested timber being sold to the highest bidder have been invited with an upset stumpage rate determined under subsections 1(b), 3(b) or 6(a) of this section and no applications have been received, the upset stumpage rate must be the rate approved by the Regional Manager.

   b. Where the regional manager does not anticipate that applications will be received for decked timber or partially harvested timber being sold to the highest bidder due to market conditions or timber profile, the upset stumpage rate determined under subsections 1(b), 3(b) and 6(a) of this section must be the rate approved by the regional manager.

   c. An upset stumpage rate determined under paragraphs (a) or (b) of this subsection must not be less than the district's variable cost to prepare the timber for sale.

6. a. Where applications for a forestry licence to cut that applies to both decked timber and partially harvested timber have been invited, the upset stumpage rate must be the total of the rate determined using the procedures in subsection (1) of this section, as if the timber was all decked timber and the silviculture levy determined under section 5.3.

   b. Where a forestry licence to cut that applies to both decked timber and partially harvested timber is entered into directly without the use of the competitive bidding process the stumpage rate must be the total of the rate determined using the procedure in subsection 2 of this section as if the timber was all decked timber and the silviculture levy determined under section 5.3.

7. Where the upset stumpage rate or the stumpage rate has been determined using this section the total stumpage rate must be fixed for the term of the cutting authority and all extensions.

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

6.6 Miscellaneous Stumpage Rates

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 6-7 are as prescribed in that table. This table does not apply to cruise based cutting authorities.

Table 6-7 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[2]	$0.25/m^3
All Species	HF	Hogged tree material from post-harvest material where a waste assessment has been made[2]	$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) and 5.1.1(5)	$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) and 5.1.1(5)	$0.50/m^3
All Species	SS	Stakes & Sticks.	$1.20/m^3
All Species	XM	Christmas Tree Length: 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 Shuswap, 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 Products as described in the Special Forest Products Regulation under the *Act*.

[2] Where the post harvest material is removed under a different tenure from the original cruise based cutting authority, a waste assessment is not required.

District/TSA 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], or, authorizations for investigative purposes issued under the *Land Act*.	Ft. Nelson Mackenzie Peace Rocky Mountain	$ 836 /ha $ 1066 /ha $ 1025 /ha $ 1385 /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 2000 m^3 or less, of merchantable coniferous volume. For pipe line rights-of-way cutting authorities greater than 2000 m^3 use section 6.7.

6.7 Specific Licences to Cut

1. This section applies to:

    a. Master licences to cut,

    b. Occupant licences to cut, and

    c. Forestry licences to cut :

        i. Issued under section 47.6(3) of the *Act* in conjunction with an activity funded out of the BCTS account,

        ii. Issued in conjunction with a works contract other than BCTS, or

        iii. Issued for a fence line or protection of a fence line administered under the *Range Act*.

2. This section does not apply to:

    a. Cutting authorities issued for any of the activities listed in Table 6-7 that have an area reserve stumpage rate in the following districts: Fort Nelson, Peace, Mackenzie, or Rocky Mountain, or

    b. The proposed Site C reservoir and dam site, or

    c. Projects where cruising of the timber to be harvested on any tenure listed in subsection (1) has been initiated for use in a full appraisal prior to November 1, 2013.

3. Unless otherwise directed under section 2.2.2, the stumpage rate for any tenure listed in subsection (1) issued on or after November 1, 2013, must be the stumpage rate prescribed in Table 6-3 for the smaller of the area of the forest district, timber supply area, region, or Area in which the entire cutting authority area for the tenure is located, plus the average basic silviculture cost[1] for all species for the applicable Interior Area in which the cutting authority area is located at the time the stumpage rate is determined.

4. Where the licensee will have a silvicultural obligation imposed by the Ministry then the basic silviculture cost is not added under subsection (3) of this section.

5. Where the timber felled on the cutting authority area of any tenure listed in subsection (1) will not be removed from the site the volume used for billing may be estimated using an alternate method of scale approved by the Minister.

[1] From the Interior Basic Silviculture Costs published quarterly and available on the Timber Pricing Branch website.

6. Except as provided under paragraph (7) of this section, the stumpage rate determined under this section will be re-determined annually on June 1st.

7. The stumpage rate determined under this section for a forestry licence to cut issued under section 47.6(3) of the *Act* is fixed for the term 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 subsection (1) 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 in accordance with chapters 1, 2, 3, 4 and 5.

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 Total Net 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[1], 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 ADS to the district manager before June 1, 2010, and,

        iii. the Total Net Coniferous Volume of timber on the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine[1], or,

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

        i. the stumpage rate is adjustable,

        ii. the licensee submitted an ADS to the district manager on or after June 1, 2010, and

        iii. the Total Net Coniferous Volume in each cutblock within the cutting authority area is comprised of 35% or more red and grey MPB attacked Lodgepole pine[1], or,

    d. Except as provided in subsection (4) of this section, under a timber sale licence with a fixed stumpage rate, which meets the criteria in paragraph (1)(c) (ii) and (iii) of this section, or a timber sale licence with a fixed stumpage rate where the executive director, BCTS has approved cruise based under section 106 of the *Act*, or

    e. Under a cutting authority that meets the criteria of section 6.4.3.

[1] The absolute fraction to the nearest 0.1% derived from dividing the sum of the Red and Grey attack volumes in each cutblock by the total net coniferous cruise volume in each cut block (both from the appraisal summary report from the cruise compilation).

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 must be calculated as stand as a whole in accordance with the following:

   a. the stumpage rate is determined using chapters 1, 2, 3, 4, 5, or section 6.4.3 of this manual,

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

3. Except as provided in subsections (4), (5) and (6) of this section, if, after a reappraisal under section 2.2.3 of this manual:

   a. the Total Net 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 an occupant licence to cut has been issued for the purposes of removing timber for agriculture, the stumpage payable must be scale based.

6. 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 must remain scale based.

7. 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 must be prorated by the person who determines the stumpage rate using Tables 4-5 or 4-6 of this manual as per section 4.6.

6.10 Section 103(3) of the *Act*

Stumpage for the purposes of section 103(3) of the *Act* must be calculated in accordance with the procedure approved by the Director. The stumpage rate is fixed.

Appendices

Appendix I Equipment and Labour Rates

a. "All Found" Equipment Rates (Source: 2013-2014 B.C. Road Builders & Heavy Construction Association, Equipment Rental Rate Guide ("The Blue Book")

EQUIPMENT DESCRIPTION	BLUE BOOK SECTION NUMBER	[1]BLUE BOOK CATEGORY	BLUE BOOK MODELS	$/HOUR
Drilling Equipment - Rock Drill	1.4		750 cfm compressor including Tank Drill Outfit and 2 operators	246.75
Excavator – Heavy Hydraulic *	7.3	45,000 – 50,999 lbs	Case CX210C; Deere 200D-L; Doosan DX225LC; Hitachi ZX200LC-3, ZX210LC-5; Kobelco SK210; Link-Belt 210X2, 210X3; Volvo EC220D/DL	154.50
Excavator – Heavy Hydraulic *	7.3	51,000 – 58,999 lbs	Case CX250C, CX225MSR; Cat 320E LLR; Deere 225D-LC, 240D-LC, 250G-LC; Doosan DX235LCR, DX255LC; Hitachi ZX225USLC-3, ZX250LC-5; Kobelco 215SRLC, 235SLRC, SK260LC; Link-Belt 225 Spin Ace, 240X2, 250X3; Volvo EC250D/DL, ECR235D/DL, 235X3	159.94
Excavator – Heavy Hydraulic *	7.3	59,000 – 67,999 lbs	Case CX250C, CX300-C; Cat 324E; Deere 270D-LC, 290G-LC; Doosan DX300LC; Hitachi ZX270LC, ZX290LC-5; Kobelco SK260LC-9, SK295LC; Link-Belt 290X2, 300X3	179.63
Excavator – Heavy Hydraulic *	7.3	68,000 – 87,999 lbs	Case 350C; Cat 329E, 336EL, 328DL CR; Deere 350D-LC, 350G-LC; Doosan DX350LC; Hitachi ZX350LC-3, ZX350LC-5, ZX470LC-5; Kobelco SK295LC-9, SK350LC-9; Komatsu PC308USLC-3; Link-Belt 350X3; Volvo EC300D/DL, EC340DL	217.80
Excavator – Heavy Hydraulic *	7.3	88,000 – 95,999 lbs	Doosan DX420LC	231.72
Excavator – Heavy Hydraulic *	7.3	96,000 – 102,999 lbs	Doosan DX480LC	278.03
Excavator – Wheel	7.2	70,000+ lbs	Cat M325DL MH (out of date model)	179.10
Grader	8.1	200-249 FWHP	Case 885B, 885B AWD; Cat 160M2; Deere 872G; Volvo G940B, G946B AWD, G960B, G970, G976 AWD, G990	157.40
Lifting Equipment - Crane	9.2	18 tonnes		117.15
Loader - Front End 4X4 (Gravel)	10.2	5 cu yd ($3.82m^3$)	Cat 966K; Doosan DL420; Deere 744K; Kawasaki 90ZV-2; Volvo L150G	180.60
Loader – Front End (Logs)	10.2	6 cu yd ($4.59m^3$)	Doosan DL450; Kawasaki 92ZV-2; Volvo L220G	188.85
Skidder - Grapple Rubber Tired	17.1	21,000 – 28,000 lbs 104-152 hp	Cat 515, Clark F-66-D and H-66-G; Deere 548-GII, 548-GIII; TimberJack 360-D (out-of-date models)	101.50
Skidder + Roller – Towed: Pneumatic Tired or Vibratory Steel Wheel	17.1 & 13.6	2.7-3.6 tonne roller	Cat 515, Clark F-66-D and H-66-G; Deere 548-GII, 548-GIII; TimberJack 360-D (out-of-date models)	116.20
Skidder + Roller – Towed: Sheepsfoot and grid	17.1 & 13.5	32 in. diameter (813mm) 2 drums rollers	Cat 515, Clark F-66-D and H-66-G; Deere 548-GII, 548-GIII; TimberJack 360-D (out-of-date models)	117.05
Tractor - Crawler	15.2	85-129.9 FWHP	Case 1150K-XLT-3, 850L-XLT; Cat D4K2 XL, D52K XL; Deere 650J LT, 650J-LGP, 650J-XLT, 700J LGP, 700J LT, 700J XLT, 700K	140.00
Tractor - Crawler	15.2	130-189.9 FWHP	Deere 750K, 850J	181.95
Tractor - Crawler	15.2	190-259.9 FWHP	Cat D7E; Deere 764 HSD, 850K, 950J, 950J LGP	215.75
Tractor - Crawler	15.2	260-359.9 FWHP	Cat D8T; Deere 1050J	258.90
Tractor - Crawler	15.2	360-519.9 FWHP	Cat D9T; Dressta TD-40E	311.50
Truck – Concrete Transit Mix	4.5	8 cu yd ($6.1 m^3$)		105.55
Truck – Dump Gravel – Standard S/A or Tandem	16.1	14 cu yd ($10.7m^3$)	Standard haul	94.11
Truck – Dump Gravel – Standard S/A or Tandem	16.1	14 cu yd ($10.7m^3$)	Includes 10% for rip-rap haul	103.52
Truck – Dump Gravel Articulated	16.8	20-24 tonnes	Bell B25D; Deere 250D, 250D-II; Terex TA350, TA400; Volvo A25E, A25F	160.30

Truck – Dump Gravel Articulated	16.8	25–29 tonnes	Bell B30D; Doosan DA30; Deere 300D, 300D-II, Terex TA250, TA300; Volvo A30E, A30F	177.50
Truck – Logging (Highway)	16.2-C	6 axle 45,000 kg	Tandem tractor & lowbed with booster	119.05
Truck – Log Self Loading	16.2-C & 16.3		Truck – Logging (Highway) and 5-tonne deck crane	132.20
Truck - Lowbed	16.2-C	5 axle unit	Tandem tractor and lowbed	108.05
Truck - Lowbed	16.2-C	7 axle unit	A or B train (or triple axle with booster)	136.60
Truck – Miscellaneous – Pilot Vehicle	16.2-A			51.70

* includes 10% additional cost - 5% for brush guard package and 5% for hydraulic thumb.

"All Found" includes all costs, expenses and profits necessary for the project work being undertaken with an allowance for operator's wages plus benefits (does not include a swamper). Operators are expected to report to the project site at their own expense unless there is an agreement to the contrary due to project location. Rates include insurance and WorkSafeBC costs.

"[1]BLUE BOOK CATEGORY" Categories as applicable provide:

- Capacity in cubic feet per minute, diameter or tonnes (Drills, Rollers, Cranes)
- Capacity in yards/m^3 (Concrete Trucks, Gravel Dump Trucks, Loaders)
- Number of axles and/or gross vehicle weight in kilograms (Logging Trucks, Lowbeds)
- Operating weight in pounds or tonnes (Excavators, Skidders, Articulated Trucks)
- Power in flywheel horsepower (Crawler Tractors, Graders)

"[2]BLUE BOOK MODELS" – Associated rates in $/hour are for Blue Book equipment models for years 2011-2014 unless "out of date" (pre-2010) in which case the rate in $/hr is for the relevant Blue Book equipment model for the specified year.

b. Miscellaneous Equipment Rates (Source: 2013-2014 Blue Book)

EQUIPMENT DESCRIPTION	BLUE BOOK SECTION NUMBER	BLUE BOOK CATEGORY	*$/HOUR
Concrete Mixer	4.4	6 cu ft (0.17 m^3)	7.74
Concrete Vibrator	4.3	12' to 21' (3.65m – 6.10m)	5.11
Powersaw	11.1	Over 20+ inch blade; over 57cm^3	3.70

*Labour not included

c. Wage Rates (Source: 2010-14 United Steelworkers agreement rates)

LABOUR DESCRIPTION	GROUP	*$/HOUR
Labourer	Group I	36.75
Roadman	Group II	37.06
Crib/Culvert Maker, Powderman	Group VII	38.93
Landingman	Group VIII	39.42
Rockdriller & Powderman (for load & blast only)	Group VII & XI	86.26
Bridgeman	Tradesman	48.20
Faller, including powersaw cost		69.32

*Effective June 15, 2013. Includes 40% for payroll loading

1. Except as provided in subsection 4 below, the labour and equipment rates in the Appendix I table will be used for all detailed engineering cost estimates made under section 4.3.3 of this manual.

2. Except for subsections 3 and 4 of this appendix, there are no additions permitted to the Appendix I table rates.

3. A nominal cost estimate of $50.00/person/day for the period of the project is permitted in the ECE for:

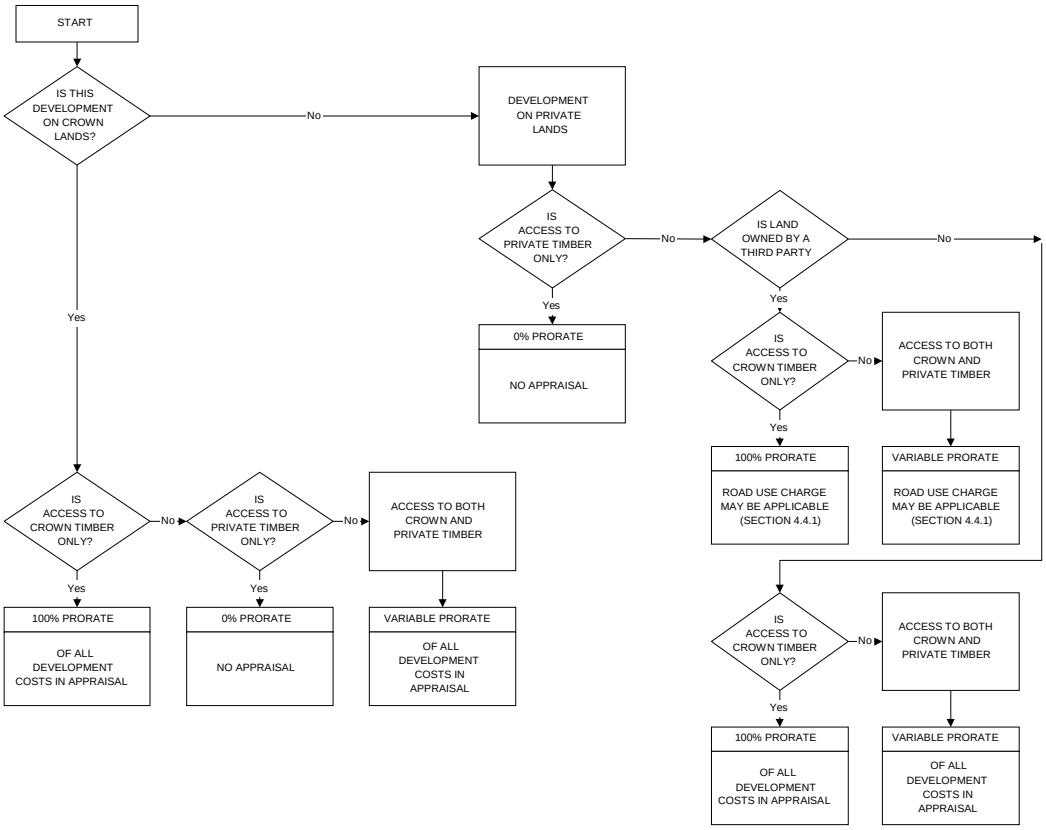
   a. crew transportation, if the crew transportation cost has not already been accounted for in the appraisal, and if applicable,

   b. crew accommodation, if those doing the work must stay in a camp[1] while working on the project and the licensee whose appraisal includes the ECE is not getting the camp specified operation in the appraisal.

4. Use of rates for equipment not listed in this appendix must be approved by the regional timber pricing co-ordinator.

[1] As defined in section 3.6.3

Appendix II Development Cost Proration



Crown Timber = Appraised timber including appraised Timber Licences

Private Timber = Non-appraised timber

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

Appendix III Relative Soil Moisture to Absolute Soil Moisture Conversion Table

Area	BEC Zone	Subzone		Relative Soil Moisture Regime Class (from field guide)						
				1	2	3	4	5	6	7
SOUTH	BG	xh1	ED	ED	ED	ED	ED	SD	M	W
SOUTH	BG	xh2	ED	ED	ED	ED	ED	SD	M	W
SOUTH	BG	xh3	ED	ED	ED	ED	ED	SD	M	W
SOUTH	BG	xw1	ED	ED	ED	ED	ED	SD	M	W
SOUTH	BG	xw2	ED	ED	ED	ED	ED	SD	M	W
SOUTH	ESSF	dc1	VD	MD	MD	SD	SD/F	M	VM	W
SOUTH	ESSF	dc2	VD	MD	MD	SD	SD/F	M	VM	W
SOUTH	ESSF	dk	VD	MD	MD	SD	SD/F	M	VM	W
SOUTH	ESSF	dv	VD	MD	MD	SD	SD/F	M	VM	W
SOUTH	ESSF	mw	VD	MD	MD	SD	F	M	VM	W
SOUTH	ESSF	vc	MD	SD	SD	F	M	VM	VM	W
SOUTH	ESSF	vv	MD	SD	SD	F	M	VM	VM	W
SOUTH	ESSF	wc1	MD	MD	SD	F	M	M	VM	W
SOUTH	ESSF	wc2	MD	MD	SD	F	M	M	VM	W
SOUTH	ESSF	wc3	MD	MD	SD	F	M	M	VM	W
SOUTH	ESSF	wc4	MD	MD	SD	F	M	M	VM	W
SOUTH	ESSF	wk1	MD	MD	SD	F	M	M	VM	W
SOUTH	ESSF	wm	MD	MD	SD	F	F	M	VM	W
SOUTH	ESSF	xc	VD	VD	MD	MD	SD	M	VM	W
SOUTH	ESSF	xv	VD	VD	MD	MD	SD	F	M	W
SOUTH	ICH	dk	VD	VD	VD	MD	SD	M	VM	W
SOUTH	ICH	dw1	VD	VD	MD	SD	F	M	VM	W
SOUTH	ICH	dw2	ED	ED	VD	MD	SD	M	VM	W
SOUTH	ICH	mk1	VD	MD	MD	SD	F	M	VM	W
SOUTH	ICH	mk2	VD	MD	MD	SD	F	M	VM	W
SOUTH	ICH	mk3	VD	MD	MD	SD	F	M	VM	W
SOUTH	ICH	mw1	VD	MD	MD	SD	F	M	VM	W

Area	BEC Zone	Subzone		Relative Soil Moisture Regime Class (from field guide) 1	2	3	4	5	6	7
SOUTH	ICH	mw2	VD	MD	MD	SD	F	M	VM	W
SOUTH	ICH	mw3	VD	MD	MD	SD	F	M	VM	W
SOUTH	ICH	vk1	MD	MD	SD	F	M	M	VM	W
SOUTH	ICH	wk1	VD	MD	SD	F	F	M	VM	W
SOUTH	ICH	wk2	VD	MD	SD	F	F	M	VM	W
SOUTH	ICH	wk4	VD	MD	SD	F	F	M	VM	W
SOUTH	ICH	xw	VD	VD	VD	MD	SD	M	VM	W
SOUTH	IDF	dk1	ED	VD	VD	VD	MD	F	M	W
SOUTH	IDF	dk2	ED	VD	VD	VD	MD	F	M	W
SOUTH	IDF	dk3	ED	VD	VD	VD	MD	F	M	W
SOUTH	IDF	dk4	ED	VD	VD	VD	MD	F	M	W
SOUTH	IDF	dm1	ED	VD	VD	VD	MD	F	M	W
SOUTH	IDF	dm2	ED	VD	VD	VD	MD	F	M	W
SOUTH	IDF	mw1	VD	VD	VD	MD	SD	F	VM	W
SOUTH	IDF	mw2	VD	VD	VD	MD	SD	F	VM	W
SOUTH	IDF	u	ED	VD	VD	MD	MD	F	VM	W
SOUTH	IDF	ww	VD	VD	VD	MD	SD	F	M	W
SOUTH	IDF	xh1	ED	ED	VD	VD	MD	SD	M	W
SOUTH	IDF	xh2	ED	ED	VD	VD	MD	SD	M	W
SOUTH	IDF	xm	ED	ED	VD	VD	MD	SD	M	W
SOUTH	IDF	xw	ED	ED	VD	VD	MD	SD	M	W
SOUTH	MS	dc	VD	VD	VD	MD	SD	M	VM	W
SOUTH	MS	dk	VD	VD	VD	MD	SD	M	VM	W
SOUTH	MS	dm1	VD	VD	VD	MD	SD	M	VM	W
SOUTH	MS	dm2	VD	VD	VD	MD	SD	M	VM	W
SOUTH	MS	xk	VD	VD	VD	VD	MD	F	M	W
SOUTH	MS	xv	VD	VD	VD	MD	SD	F	VM	W
SOUTH	PP	dh1	ED	ED	ED	VD	VD	SD	M	W
SOUTH	PP	dh2	ED	ED	ED	VD	VD	SD	M	W

Area	BEC Zone	Subzone		Relative Soil Moisture Regime Class (from field guide)						
				1	2	3	4	5	6	7
SOUTH	PP	xh1	ED	ED	ED	ED	VD	SD	M	W
SOUTH	PP	xh2	ED	ED	ED	ED	VD	SD	M	W
SOUTH	SBPS	dc	ED	ED	VD	MD	SD	F	M-VM	W
SOUTH	SBPS	mc	VD	VD	VD	MD	SD	F	M-VM	W
SOUTH	SBPS	mk	ED	VD	VD	MD	SD	F	M-VM	W
SOUTH	SBPS	xc	ED	ED	VD	VD	MD	SD	M	W
SOUTH	SBS	dw1	VD	MD	MD	SD	SD	F	M	W
SOUTH	SBS	dw2	VD	MD	MD	SD	SD	F	M	W
SOUTH	SBS	mc1	VD	MD	MD	SD	F	M	VM	W
SOUTH	SBS	mc2	VD	MD	MD	SD	F	M	VM	W
SOUTH	SBS	mh	VD	MD	MD	SD	SD	M	VM	W
SOUTH	SBS	mm	VD	MD	MD	SD	F	M	VM	W
SOUTH	SBS	mw	VD	MD	MD	SD	F	M	VM	W
SOUTH	SBS	wk1	VD	MD	SD	F	F	M	VM	W
NORTH	BWBS	dk	VD	MD	MD	SD	F	M	VM	W
NORTH	BWBS	mk	VD	MD	MD	SD	F	M	VM	W
NORTH	BWBS	mw	VD	MD	MD	SD	F	M	VM	W
NORTH	BWBS	wk1	VD	MD	SD	SD	F	M	VM	W
NORTH	BWBS	wk2	VD	MD	SD	SD	F	M	VM	W
NORTH	BWBS	wk3	VD	MD	SD	SD	F	M	VM	W
NORTH	CWH	vh2	SD	SD	F	F	M	VM	W	W
NORTH	CWH	vm1	MD	SD	SD	F	F	M	VM	W
NORTH	CWH	vm2	MD	SD	SD	F	F	M	VM	W
NORTH	CWH	wm	SD	SD	SD	F	F	M	VM	W
NORTH	CWH	ws1	VD	MD	MD	SD	F	M	VM	W
NORTH	CWH	ws2	VD	MD	MD	SD	F	M	VM	W
NORTH	ESSF	mc	VD	MD	SD	SD	F	M	VM	W

Area	BEC Zone	Subzone		Relative Soil Moisture Regime Class (from field guide) 1	2	3	4	5	6	7
NORTH	ESSF	mk	VD	MD	MD	SD	F	M	VM	W
NORTH	ESSF	mm1	VD	MD	MD	SD	F	M	VM	W
NORTH	ESSF	mv1	VD	MD	SD	SD	F	M	VM	W
NORTH	ESSF	mv2	VD	MD	SD	SD	F	M	VM	W
NORTH	ESSF	mv3	VD	MD	SD	SD	F	M	VM	W
NORTH	ESSF	mv4	VD	MD	SD	SD	F	M	VM	W
NORTH	ESSF	wc2	MD	MD	SD	F	M	M	VM	W
NORTH	ESSF	wc3	MD	MD	SD	F	M	M	VM	W
NORTH	ESSF	wk1	MD	MD	SD	F	M	M	VM	W
NORTH	ESSF	wk2	MD	MD	SD	F	M	M	VM	W
NORTH	ESSF	wv	MD	SD	SD	F	F	M	VM	W
NORTH	ICH	mc1	VD	MD	SD	SD	F	M	MV	W
NORTH	ICH	mc1a	VD	MD	SD	SD	F	M	MV	W
NORTH	ICH	mc2	VD	MD	SD	SD	F	M	MV	W
NORTH	ICH	mm	VD	MD	MD	SD	F	M	VM	W
NORTH	ICH	vc	MD	SD	SD	F	M	M	VM	W
NORTH	ICH	vk2	MD	SD	SD	F	M	M	VM	W
NORTH	ICH	wc	MD	MD	SD	F	F	M	VM	W
NORTH	ICH	wk1	VD	MD	SD	F	F	M	VM	W
NORTH	ICH	wk3	VD	MD	SD	F	F	M	VM	W
NORTH	ICH	wk4	VD	MD	SD	F	F	M	VM	W
NORTH	MH	mm1	SD	SD	F	F	F	M	VM	W
NORTH	MH	mm2	SD	SD	F	F	F	M	VM	W
NORTH	MH	wh	SD	SD	F	F	F	M	VM	W
NORTH	SBPS	mc	VD	VD	VD	MD	SD	F	M-VM	W
NORTH	SBS	dh	VD	MD	MD	SD	SD	F	M	W
NORTH	SBS	dk	VD	MD	MD	SD	SD	F	M-VM	W
NORTH	SBS	dw1	VD	MD	MD	SD	SD	F	M	W

Area	BEC Zone	Subzone		Relative Soil Moisture Regime Class (from field guide) 1	2	3	4	5	6	7
NORTH	SBS	dw2	VD	MD	MD	SD	SD	F	M	W
NORTH	SBS	dw3	VD	MD	MD	SD	SD	F	M	W
NORTH	SBS	mc2	VD	MD	MD	SD	F	M	VM	W
NORTH	SBS	mc3	VD	MD	MD	SD	F	M	VM	W
NORTH	SBS	mh	VD	MD	MD	SD	SD	M	VM	W
NORTH	SBS	mk1	VD	MD	MD	SD	F	M	VM	W
NORTH	SBS	mk2	VD	MD	MD	SD	F	M	VM	W
NORTH	SBS	mw	VD	MD	MD	SD	F	M	VM	W
NORTH	SBS	vk	MD	SD	SD	F	M	M	VM	W
NORTH	SBS	wk1	VD	MD	SD	F	F	M	VM	W
NORTH	SBS	wk2	VD	MD	SD	F	F	M	VM	W
NORTH	SBS	wk3	VD	MD	SD	F	F	M	VM	W
COAST	CDF	mm	VD	VD	MD	MD	MD	SD	F	W
COAST	CWH	dm	VD	MD	MD	SD	F	M	VM	W
COAST	CWH	ds1	VD	MD	MD	SD	F	M	VM	W
COAST	CWH	ds2	VD	MD	MD	SD	F	M	VM	W
COAST	CWH	mm1	MD	SD	SD	F	F	M	VM	W
COAST	CWH	mm2	MD	SD	SD	F	F	M	VM	W
COAST	CWH	ms1	VD	MD	MD	SD	F	M	VM	W
COAST	CWH	ms2	VD	MD	MD	SD	F	M	VM	W
COAST	CWH	vh1	SD	SD	F	F	M	VM	W	W
COAST	CWH	vh2	SD	SD	F	F	M	VM	W	W
COAST	CWH	vm1	MD	SD	SD	F	F	M	VM	W
COAST	CWH	vm2	MD	SD	SD	F	F	M	VM	W
COAST	CWH	wh1	SD	SD	SD	F	F	M	VM	W
COAST	CWH	wh2	SD	SD	SD	F	F	M	VM	W
COAST	CWH	ws2	VD	MD	MD	SD	F	M	VM	W

Area	BEC Zone	Subzone	Relative Soil Moisture Regime Class (from field guide)							
				1	2	3	4	5	6	7
COAST	CWH	xm	VD	MD	MD	SD	F	M	VM	W
COAST	ESSF	mw	VD	MD	MD	SD	F	M	VM	W
COAST	IDF	ww	VD	VD	VD	MD	SD	F	M	W
COAST	MH	mm1	SD	SD	F	F	F	M	VM	W
COAST	MH	mm2	SD	SD	F	F	F	M	VM	W
COAST	MH	wh	SD	SD	F	F	F	M	VM	W

NOTES:
ED = Extremely (0, extreme xeric)
VD = Very Dry (1, xeric)
MD = Moderately Dry (2, sub-xeric)
SD = Slightly Dry (3, sub-mesic)
F = Fresh (4, mesic)
M = Moist (5, sub-hygric)
VM = Very Moist (6, hygric)
W = Wet (7, sub-hydric)

Absolute Soil Moisture	**Soil Moisture Code**
ED, VD, or MD	D-Dry
SD or F	M-Moist
M, VM or W	W-Wet

Appendix IV Appraisal Map Content

The map(s) submitted with the appraisal data submission must be at a scale of 1:5000 or 1:10000. Additional maps at other scales may be included as required. At a minimum the map(s) must indicate the following information:

a. Cutting authority boundaries.

b. Delineation of retention or reserved areas within the cutting authority.

c. Delineation of biogeoclimatic zone, subzone and variant areas.

d. Delineation of areas by harvest method (ground, cable, or helicopter, etc.) and clear cut or partial cut (as defined in the IAM).

e. Delineation of areas that are the subject of specified operations cost estimates (e.g., root disease control).

f. The geographic centre point of each cutblock and common junction of the permit.

g. Existing roads.

h. Roads to be built by type (long term, short term) and by section, as submitted in the ADS, including sections to be gravelled and or sections that are “wet” (as defined in this manual).

i. Location of roads/structures that are included in detailed engineered estimates.

j. Location and type of other development such as remedial fencing, cattleguards and pipeline crossings.

k. Map Scale indicated using a graphic bar scale.

The appraisal map may include other information considered relevant to the appraisal, and must be attached to the appraisal data submission in electronic format.

For reappraisal data submissions, reference may be made to the original map submitted. Any change to the harvest plan or area of harvest due to a “changed circumstance” (section 2.2.1) during the term of the cutting authority must be mapped and submitted to the district with the ADS, for the reappraisal.

Appendix V Geophysical Clearance Line Categories

The following categories of geophysical line clearing apply to Table 6-7. All clearing activity in the categories below must follow the best practices of meandering avoidance, line of site to a maximum of 200 metres, and avoidance of merchantable timber wherever possible. Failure to employ these best practices (as determined by the district manager) will result in the line clearing being billed as Category 1. The categories are defined as follows:

Category 1 - Any line section over 100 metres in length and over 4.25 metres in width.

Category 2 - Any line section over 100 metres in length and between 3.0 metres and 4.25 metres in width.

Category 3 - Any line section over 100 metres in length and less than 3.0 metres in width.

Appendix VI Appraisal Log Dumps

Area	District	Marine (M) Natural (N) or Reservoir (R)	Water Body Name	Dump Location Name
NORTH	Coast Mountain	M	Devastation Channel	Heysham Creek
NORTH	Coast Mountain	M	Devastation Channel	Hugh Creek
NORTH	Coast Mountain	M	Devastation Channel	North Kitsaway
NORTH	Coast Mountain	M	Devastation Channel	Pike/Sleeman
NORTH	Coast Mountain	M	Devastation Channel	South Kitsaway
NORTH	Coast Mountain	M	Douglas Channel	Miskatla
NORTH	Coast Mountain	M	Eagle Bay	Eagle Bay
NORTH	Coast Mountain	M	Gardner Canal	Barrie Creek
NORTH	Coast Mountain	M	Gardner Canal	Collins Bay
NORTH	Coast Mountain	M	Gardner Canal	Kemano Bay
NORTH	Coast Mountain	M	Kildala Arm	Dala River
NORTH	Coast Mountain	M	Kildala Arm	Falls River
NORTH	Coast Mountain	M	Kitimat Arm	Minette Bay
NORTH	Coast Mountain	M	Verney Passage	Cheenis Creek
NORTH	Mackenzie	R	Williston Lake	Bear Valley
NORTH	Mackenzie	R	Williston Lake	Chowika
NORTH	Mackenzie	R	Williston Lake	Clearwater
NORTH	Mackenzie	R	Williston Lake	Factor Ross
NORTH	Mackenzie	R	Williston Lake	Ingenika
NORTH	Mackenzie	R	Williston Lake	Lost Cabin
NORTH	Mackenzie	R	Williston Lake	Manson
NORTH	Mackenzie	R	Williston Lake	Mesilinka
NORTH	Mackenzie	R	Williston Lake	Nation
NORTH	Mackenzie	R	Williston Lake	Omineca
NORTH	Mackenzie	R	Williston Lake	Ospika
NORTH	Mackenzie	R	Williston Lake	Swannell
NORTH	Nadina	R	Knewstubb Lake	Ootsa Cheslatta
NORTH	Nadina	R	Knewstubb Lake	Ootsa Deerhorn
NORTH	Nadina	R	Knewstubb Lake	Table Bay
NORTH	Nadina	R	Knewstubb Lake	Tahtsa Reach
SOUTH	Okanagan Shuswap	N	Okanagan Lake	Bear Creek
SOUTH	Okanagan Shuswap	N	Shuswap Lake	Lee Creek
SOUTH	Okanagan Shuswap	N	Shuswap Lake	2 Mile
SOUTH	Okanagan Shuswap	N	Shuswap Lake	Wilson Creek
SOUTH	Selkirk	R	Arrow Lakes	Cayuse
SOUTH	Selkirk	R	Arrow Lakes	Fosthall
SOUTH	Selkirk	R	Arrow Lakes	Halfway
SOUTH	Selkirk	R	Arrow Lakes	Island Point - Gladstone

Area	District	Marine (M) Natural (N) or Reservoir (R)	Water Body Name	Dump Location Name
SOUTH	Selkirk	R	Arrow Lakes	Needles
SOUTH	Selkirk	R	Arrow Lakes	Octopus
SOUTH	Selkirk	R	Arrow Lakes	Renata
SOUTH	Selkirk	R	Arrow Lakes	Shelter Bay
SOUTH	Selkirk	R	Arrow Lakes	Snag Bay
SOUTH	Selkirk	R	Arrow Lakes	Stobo
SOUTH	Selkirk	N	Slocan Lake	Rosebery
SOUTH	Thompson Rivers	N	Adams Lake	North end

Appendix VII Amortization Agreement Form - Interior

BRITISH COLUMBIA Ministry of Forests, Lands and Natural Resource Operations

Amortization Agreement - Interior

This document constitutes an agreement to distribute a portion of the development cost estimate included in the appraisal for the cutting authority indicated below to the tributary cutting authority or cutting authorities identified below in accordance with the *Interior Appraisal Manual* in effect at the time the agreement is signed.

The agreement must be reviewed and approved by the Regional Executive Director (or designate). A copy of this agreement becomes an integral part of the appraisal for each of the tributary cutting authorities identified below.

Complete Legal Name of Licensee:			
Licensee Address:			
Licence:	**CP:**	**Mark:**	**ECAS ID:**

Project(s): *(see attached)*	
TOTAL COST ESTIMATE FOR APPORTIONMENT ($):	_____
Cutting Authority	**Amount Apportioned ($)**
Total Amount Apportioned ($):	

This agreement is made for appraisal purposes only and does not confer any obligation on the Crown to compensate licensees for any unamortized costs.

Approved by Regional Executive Director or designate Name & Title (printed)	**Licensee Representative Name & Title** (printed)
RED or Designate Signature	**Licensee Representative Signature**
Date Signed (yyyy-mm-dd)	**Date Signed** (yyyy-mm-dd)

FS 1422 HVA 2015/07 Please be advised that this information may be released under the *Freedom of Information and Protection of Privacy Act*

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