TIMBER PRICING BRANCH

Interior Appraisal Manual

Effective July 1, 2024

Cost Base of: 2022

BRITISH COLUMBIA

2024 Interior Appraisal Manual Highlights

Section or Appendix	Description
Definitions	**Blown down** definition added. **Comparative Cruise** definition amended. **Harvest Area** definition amended. **Harvested** definition amended. **Logical Unit** definition added.
1.4.1	Change from **Single Unit** to **Logical Unit**
1.4.4	Transportation Route - Updated constant in equation
2.4(5)(c) &(d)	Correctable Errors - Revised wording
2.5	Redetermination by Agreement – change from 21 days to 30 days
3.1	Estimated Winning Bid Equation - updated
3.2.1	Updated denominator value
Table 3-1	LRF Update Add-ons – updated table values
Table 3-2	Zonal Volume – updated table values
3.2.19	Updated District Average Number of Bidders (DANB) to Average Natural Log of Number of Bidders (LN_DANB)
Table 3-3	Updated Proxy District Average of Natural Log of Number of Bidders values
3.2.24	Currency Conversion Rate - Change to 2-month average
3.3.1.1	Surface Tow System – updated values

Section or Appendix	Description
3.3.1.2	Log Barge System – updated value
3.3.2.1	Updated Truck-to-Rail transfer rate
3.3.2.2	Barge Transportation (Used for Truck Haul) – updated rate
3.3.2.3	Barge Transportation (Not Used for Truck Haul) – updated rate
3.3.3	Skyline and Intermediate Support Skyline – updated rate
3.3.4	Helicopter Logging – updated rate
3.3.6	High Development Cost – updated values
3.3.7	Uneven Aged Management – This section has been removed.
3.4	Final Estimate Winning Bid – updated ACPI value
4.2.1(2)	Forest Management Administration – updated formula
Table 4-1	FMA Regional Constants – updated table values
4.2.2	Added Cut to Cruise factor into formula and definition
4.3.1.4(2)(d)	Amortization Agreements - Revised wording to allow for trending to cost base of manual
4.3.1.4(2)(h)	Amortization Agreements – change to allow Amortization Agreements to be adjusted twice
4.3.1.4(2)(k)	Removed as it was no longer needed
4.3.2.3	Subgrade Construction Cost Equation – equations updated
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4.3.4.1	Stabilization Material Cost Equations – values updated
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4.7	Low Grade percent Adjustment – removed Table 4-9 and revised wording to remove reference to table 4-9
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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 for a reappraisal for suddenly and severely damaged timber (section 2.2.3), and subject to subsection (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 cruise based and the deciduous timber has not been reserved, the Total Net Cruise Volume; or
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;

"**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*;

"**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*;

"**Blown down**" for the purposes of the **Reserve Trees** or **Reserve Area** definition means an area where the majority of trees have blown down and the area was not identified as a reserve area at the time of cutting authority issuance.

"**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 a Changed Circumstance Certification statement submitted in ECAS by a forest professional (refer to section 2.2.2);

"**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 has similar stand and terrain characteristics as the cutting authority area and is a cruise submitted to the district that meets the standards of the Cruising Manual;

"**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. Timber sale licence that provides for cutting permits;
    c. Tree farm licence;
    d. Community forest agreement;
    e. Woodlot licence;
    f. Timber licence;
    g. Community salvage licence;
    h. Master licence to cut;
    i. Forestry licence to cut; or
    j. First Nations Woodland licence.
2. A timber sale licence under which cutting permits have not or will not be issued;
3. All other licences to cut; or
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;

"**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 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 25(1)(b) and 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 *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;

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

"**Food Premises**" means a place where food is prepared and served as described in the *BC Guidelines for Industrial Camps Regulation*.

"**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 Forest Professionals British Columbia.

"**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 Area**" means the area indicated for harvest on an appraisal map submitted by the licensee in ECAS. For the purposes of a changed circumstance reappraisal for a scale based cutting authority, **Harvested** area must be indicated;

"**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;

"**Harvested**" means the timber that has been felled and removed from the cutting authority area. For the purposes of a changed circumstance reappraisal, Harvested includes all timber that has been felled and/or felled and removed on the cutting authority area;

"**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;

"Logical Unit" means a cutblock, that is composed of one or more openings, where openings are no more than 400 metres from an adjacent opening within the same logical unit, and is managed as one unit for the purposes of harvesting and silviculture.

"Long-Term Arrangement" for the purposes of camp specified operations, means for a period of one or more years;

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

"**Mature Timber**" means, exclusively for the purposes of section 30 of the Wildfire Regulation of the Wildfire 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 sections 25(1)(b) and 27(1)(c) of the Wildfire Act, timber meeting the Interior Timber Merchantability Specifications described in Table 1-2 in this manual.

"**Minister**" means Minister of Forests;

"**Ministry**" means Ministry of Forests;

"MPS" means Market Pricing System;

"**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;

"**Original Appraisal**" means the appraisal data submission effective on the effective date of the cutting authority;

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

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

"**Primary Harvesting Activities**" means the cutting and removal of timber from a cutting authority area;

"**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 300m 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 100m 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;

"**Reserve Trees** or **Reserve Area**" for the purposes of this manual, cannot include trees or areas that have been felled, harvested, or blown down.

"**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;

"Tethered or Winch-Assist Harvest Method" means a harvest method on slopes too steep for conventional ground-based equipment that utilizes cable winch systems to stabilize and assist the equipment used to forward/skid (and/or hoe-chuck) the timber.

"**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 project 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 project that is developed.

1.2 Terms of Reference

1. Pursuant to section 105 of the *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 Mountain Resorts Branch of the Ministry of Tourism, Arts, Culture and Sport are authorized to determine or redetermine stumpage rates in accordance with section 6.8(1) or (2).

1.2.2 Stumpage Appraisal Parameters

1. Stumpage Appraisal Parameter (the "parameters") means the Market Pricing System Lumber Average Market Values (AMVs), BC Consumer Price Index, 12-month Running AAC minus total harvest, and the US Dollar Exchange Rate as published each month by Timber Pricing Branch.

2. When the parameters are approved by the director and published on the Timber Pricing Branch website, they become an integral part of this manual.

   http://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/interior-timber-pricing/interior-appraisal-parameters

1.2.2.1 Lumber Average Market Values (AMVs)

1. Unless otherwise specified in this section, the lumber AMVs are an average of lumber market values, two months prior to the date of publication. Each species or species group is aggregated by selling price zone based on point of appraisal (POA) in Table 1-1.

2. Lumber market values are derived by dividing the total sales value by the total sales volume reported by licensees to Timber Pricing Branch; where

   a. total sales value means for each species or species group the net sales reported in Canadian dollars (FOB) mill; and

   b. total sales volume means for each species or species group all sizes and grades of rough and dressed lumber in the green and dried state; and finger-jointed lumber and machine stress rated lumber.

3. The volume that is manufactured to Canadian Lumber Standard/American Lumber Standards (CLS/ALS) is in foot board measure (fbm). Volume that is manufactured to non-CLS/ALS sizes are adjusted to equivalent CLS/ALS sizes.

4. If there is insufficient data reported, the lumber AMV for a species or species group may be determined using an alternate procedure approved by the director.

1.2.3 Minimum Stumpage Rate

1. A stumpage rate or an upset determined using this manual must not be less than the prescribed minimum stumpage rate.

1.2.4 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, every calculation required to be performed will be performed to the full capacity of a calculating machine with the results rounded to the appropriate number of decimal places.

3. A result from 5 to 9 will be rounded upward and a result from 1 to 4 will be rounded downward.

4. 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.

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

6. Road section lengths will be added, and the total length of all road sections will be rounded once to the nearest 100 meters. Cycle time calculations will be added, and the final resultant cycle time rounded once to the nearest 0.1 hour.

1.3 Point of Appraisal (POA)

1. The POA used in an appraisal is the POA for the appraised Transportation Route determined under section 1.4.4.
2. The POAs that may be considered for use in the appraisal are set out in Table 1-1 unless:
   a. the last remaining milling facility associated with the POA is permanently rendered incapable of producing lumber and chips and a minimum of three years has passed since the mill stopped producing; or
   b. eight years has passed since the mill stopped producing; or
   c. the appraisal effective date is past the expiry date for that POA indicated in subsection (4) of this section.
3. For the purposes of subsection (2)(a), permanently rendered incapable means the equipment required to produce lumber and chips has either been destroyed or permanently removed from the site.
4. The selling price zone used in an appraisal is the Zone indicated in Table 1-1 for the point of appraisal; except for determining the Conifer Zonal Volume (as provided in Table 3-2).

Table 1-1: Points of Appraisal

Zone 5 (Northern Interior)	Zone 6 (Skeena)	Zone 7 (Southern Interior)		Zone 8 (South Cariboo)	Zone 9 (Fort Nelson-Peace)
Bear Lake Burns Lake Engen Fort St. James Fraser Lake Houston Mackenzie Prince George Quesnel Smithers Strathnaver Vanderhoof	Terrace	Adams Lake Armstrong Castlegar Creston Elko Galloway Grand Forks Lavington Merritt	Midway Princeton Radium Revelstoke Thrums Westbank Ymir	100 Mile House Williams Lake	Fort St. John Chetwynd

1.4 Fully Appraised Cutting Authority Area

1.4.1 Cutblocks

1. Each cutblock in a cutting authority must be
   a. a logical unit; and
   b. contained entirely within the geographic boundary of a forest district.

1.4.2 Maximum Area

1. A cutting authority area must be within a polygon smaller than 7,850 hectares formed by straight lines around the furthest boundaries of the furthest cutblocks (see example in Figure 1); excluding the area of the polygon not in the Timber Harvesting Land Base (THLB).
2. For the salvage of fire damaged timber, subsection 1 does not apply however all blocks must be within the same management unit and are appraised to the same POA. All blocks must:
   a. consist of at least 40% fire damaged timber; and
   b. be fully within a mapped wildfire boundary.

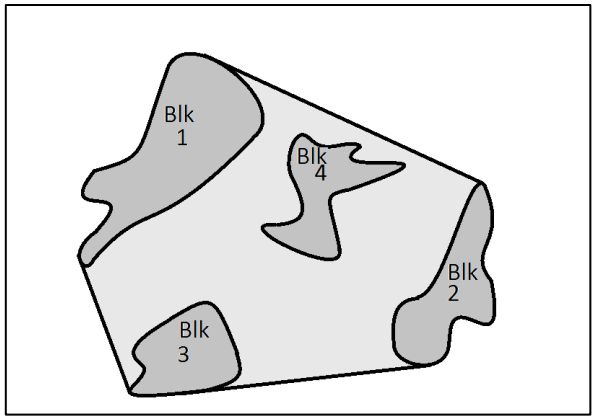


Figure 1: Example of polygon enclosing four blocks in a cutting authority.

1.4.3 Mountain Pine Beetle Cruise Based

1. Subsection (2) does not apply to cutting authorities issued on or after January 1, 2024.
2. A cutting authority must be made up of cutblock(s) where
   a. each cutblock has 35% or more red and grey Mountain Pine Beetle (MPB) attacked Lodgepole pine in the appraisal summary report; or
   b. each cutblock has less than 35% red and grey MPB attacked Lodgepole pine in the appraisal summary report.

1.4.4 Transportation Route

1. A cutting authority must be made up of cutblock(s) where the transportation route of each cutblock is to a common POA.
2. The collection of transportation routes in (1) cannot include more than one type of water transportation system.
3. For cutblocks located in an area with water transportation systems available, the transportation route in subsection (1) means the route with the lowest transportation cost (TC) by cutblock, using the appraisal log dump with the shortest cycle time from the cutblock, and using the following equation:

   TC = [2.166 * (CYCLE + (0.5 * CYCLE_INC6)) * CPIF] + [SOs * (CPI/ACPI)]

   Where

CYCLE	=	as defined in section 3.2.12.
CYCLE_INC6	=	CYCLE (calculated above) – 6.0 hours. If < 0, then 0.
SOs	=	the sum of the water transportation system specified operations costs from section 3.3.1 (surface tow system or log barge system as indicated by the appraisal log dump location in Appendix VI) that apply to the route.
CPI	=	as defined in section 3.2.1
ACPI	=	as defined in section 3.4
CPIF	=	as defined in section 3.2.1

4. For cutting authorities other than those in subsection (3), the transportation route in subsection (1) means the route with the shortest cycle time (excluding barge delays) calculated using the procedure in subsection 3.2.12.
5. A transportation route must be:
   a. a route suitable for the transportation of logs at the time of the submission of the original appraisal in ECAS; or
   b. a route that will become suitable with development projects (including amortized development) submitted in the appraisal and meet the provisions in this manual.

1.4.4.1 Unsuitable Transportation Route

1. The district manager may deem a transportation route unsuitable in his or her district if satisfied that one or more of the following conditions would prevent the use of the transportation route.
   a. In the case of a road section or bridge,
      i. the road section or bridge has become impassable to logging trucks and the condition of impassibility is unrelated to lack of use or maintenance of roads under road permit obligations of any licensee, and is expected to persist for at least one year; or

ii. the road section was originally designed for favorable hauling and has since become available for adverse hauling but is inappropriate for industrial traffic use; or

iii. the road section is restricted or inappropriate for industrial traffic use.

b. In the case of an Appraisal Log Dump, the log dump site has no authorizations in place for the use of the site for water transportation of logs, and reclamation of the site is complete.

2. A determination made in subsection (1) is in effect from the date the district manager deems the route unsuitable.

3. The district manager must revoke a determination made in subsection (1) when of the opinion that the condition(s) that led to the determination have ceased to exist. A determination in subsection (1) expires on the date the district manager deems the route suitable again.

1.4.5 Harvest Method

1. The licensee must submit, and the person determining the stumpage rate must use, the harvest method(s) suitable for the site conditions and that produces the highest stumpage rate in an appraisal.
2. When submitting a non-conventional harvest method in an appraisal or reappraisal for an area with less than 30% slope, the licensee must provide a professional rationale, to the person determining the stumpage rate, explaining why the site conditions require a higher cost method. Site conditions may be terrain stability or visual quality objectives that prevent the use of conventional harvest methods.

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 1-2 below and in accordance with the following Ministry publications:

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

   http://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/timber-cruising/timber-cruising-manual

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

   http://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/timber-cruising/cruise-compilation-manual

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

   a. the Cruise Compilation Report;

   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; and

   d. a detailed description of the leave tree characteristics.

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

Table 1-2: Interior Timber Merchantability Specifications

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
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 or BCTS Executive Director 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.

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:

      http://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/electronic-commerce-appraisal-system

      i. An ADS in ECAS must be submitted 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 submitted by a forest professional unless appraised under sections 6.1.2, 6.1.3 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 Species

1. The following commercial species are appraised as coniferous: Balsam, Cedar, Douglas-fir, Hemlock, Larch, Lodgepole pine, Spruce, Western white pine and Yellow pine.

2. For Yellow-cedar or Grand fir found in the cruise, the appraised species is Hemlock.

3. For Whitebark pine found in the cruise, the appraised species is Lodgepole pine.

1.5.4 Appraisal Map

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

1.5.5 Documentation

1. For each cutting authority, a licensee representative must keep proper and adequate written documentation of any advice, direction or approvals received from regional revenue staff. This includes advice on eligibility of costs or provisions in this manual. If documentation is inadequate the cost estimates or provisions may be disallowed.

2. A licensee representative must keep proper and adequate documentation of all development projects (including amortized development) and harvesting activities started on or after April 1, 2017 for each cutting authority effective April 1, 2017 or later.

   a. For development projects with cost estimates less than $25,000, tendered contracts, or costs derived from cost estimate tables (or cost estimate formulas) in the manual, a licensee must keep evidence that the project occurred. If evidence is inadequate or unavailable the cost estimates may be disallowed.

   b. For development projects with cost estimates $25,000 or more, full documentation is required. If documentation is inadequate or unavailable the cost estimates may be disallowed.

3. For the purpose of subsection (2),

   a. “Projects” means ECE situations as per section 4.3.6 and subject to the definition for common subgrade construction variables in section 4.3.2.2. Works separated by a distance greater than or equal to 100 metres and drainage structures are considered separate projects.

   b. “Evidence” means physical evidence of a project. Where physical evidence may not be evident after the completion of primary harvesting activities a licensee must keep georeferenced photos, contracts, invoices, journal entries, emails, or professional statements and record statement/and drawings (for bridges and major culverts) as documentation the project occurred.

      i. In the case of a tendered contract, the licensee must be able to show the tender process and results.

   c. “Full Documentation” means georeferenced photos, contracts, invoices, journal entries, or emails of the project activities. Equipment types and hours worked, hours/or days in labour or professional services, materials and costs must all be clearly detailed for each project.

2 Appraisals, Reappraisals and Stumpage Adjustments

2.1 Appraisals

1. A stumpage rate, or in the case of BCTS the upset stumpage rate, (from here on referred to as "the rate") is determined using the manual in effect on the effective date of the cutting authority (refer to section 1.1 for the definition of the effective date).

2.1.1 Appraisal Data Submission Process

1. The appraisal data submission process must be followed for fully appraised cutting authorities.
   a. The licensee or BCTS representative (from here on referred to as "the submitter") must submit an ADS to the district manager (refer to section 1.5.2 for ADS requirements) at the same time the submitter makes an application for a cutting authority.
   b. The district manager may review the ADS for provisions of the manual the submitter may not have considered. These provisions are limited to those required under section 1.4 and 1.5.1. The district manager must give any information he or she considers relevant to the appraisal to the person who determines the stumpage rate.
   c. The person who determines the stumpage rate (from here on referred to as "the SDM") may review the information supplied by the district manager (in subsection b) and review the ADS for missing or incompatible data, or errors and/or provisions of the manual the submitter may not have considered and may inform the submitter of their findings.
   d. The submitter may consider the information provided in subsection (c) and may revise the ADS.
   e. The SDM may consider any new information provided by the submitter, and any other available information relevant to the ADS and may change the data in ECAS in order to determine the rate.
   f. The SDM determines the rate.
   g. Details of the rate calculation are made available from the General Appraisal System (GAS). Licensee representatives may also be notified automatically.

      To request automatic notifications, send an email request to Timber Pricing Branch at forhvap.gashelp@gov.bc.ca.
   h. For BCTS only, immediately following the award of a TSL
      i. the submitter enters the sale information and resubmits the ADS ("second pass"); and
      ii. the SDM determines the rate.

2.2 Reappraisals

1. This section applies to fully appraised cutting authorities effective on or after April 1, 2017 (for fully appraised cutting authorities effective prior to this date use section 2.2 as it was prior to April 1, 2017).
2. Where the policies and procedures in this manual require a reappraisal, the stumpage rate must be determined 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.
3. A reappraisal is a complete reassessment of the cutting authority on the effective date of the reappraisal, with the exception of a reappraisal directed by the Minister (section 2.2.4), an insect damage reappraisal (section 2.2.5), a compilation version reappraisal (section 2.2.6), or an unsuitable transportation route reappraisal (section 2.2.7).
4. A reappraisal may not be used to change the appraisal from a full appraisal to a tabular stumpage rate (chapter 6) or vice versa.
5. If a cutting authority is reappraised, any bonus bid or bonus offer in existence does not change and remains in effect.

2.2.1 Reappraisal Data Submissions

1. If a reappraisal is required, a licensee representative must submit an ADS to the district manager, and the appraisal data submission process (section 2.1.1 (1) (b) to (g)) must be followed.
2. A changed circumstance reappraisal must only be submitted after the completion of primary harvesting activities.

2.2.2 Changed Circumstances

1. This section applies to all fully appraised adjustable rate cutting authorities.
2. A changed circumstance means a circumstance where:
   a. the operations used or carried out on a cutting authority area are different from what was identified in the original appraisal. These changes in operations include:
      i. a change in **Point of Appraisal** due to a shorter transportation route (or in the case of section 1.4.4 (3) a lower cost transportation route) becoming available with development projects submitted in another appraisal data submission by the same licensee, prior to the completion of primary harvesting activities; or
      ii. a change in **harvest method(s)** that exceeds the greater of 1000 m^3 or 10% of the total net cruise volume. If the change is to a higher cost harvest method, the licensee submitter must include a rationale to explain why the change is required; or

iii. a change in **development** that exceeds the greater of $5,000 or 3% of the total development cost estimate in the original appraisal recalculated under chapter 4, on the basis of the development work actually carried out, to the extent this development is in accordance with chapter 4; or

aa. a licensee representative may choose to submit a changed circumstance reappraisal in paragraph (iii) to re-estimate only the development costs in the original appraisal if it does not meet the minimum change requirement; or

iv. a change in the **special transportation** specified operation; or

v. a change in the **root disease** control treatment area that exceeds the greater of 3 hectares or 3% of the total treatment area, or

vi. a change in the **skyline harvest** area that exceeds the greater of 3 hectares or 3% of the total skyline harvest area; or

vii. a change in the appraised **water transportation** route because a change in the water level rendered a log dump unfeasible; or

viii. a change in the appraised **enhanced silviculture** treatment area; or

ix. a change where **camp** was indicated in the original appraisal data submission and did not meet the criteria in section 3.2.27, or vise-versa; or

x. a change in the **uneven-aged forest management** specified operation; or

xi. a change in the appraised **cultural burning** treatment area

b. the cutting authority harvest area is different from what was used in the original appraisal. These changes include:

i. an absolute[1] change in **harvest area** that exceeds the greater of 5 hectares or 5% from an original appraisal for a **scale based** cutting authority; or

ii. an absolute[1] change in **harvest area** that exceeds 3 hectares from an original appraisal for a **cruise based** cutting authority.

aa. For cruise-based billing purposes in subsection (2)(b)(ii) the harvest area must only be changed to reflect the new harvest area when the harvest area has decreased and the cutting authority has been amended, or the harvest area has increased.

c. the cutting authority harvest area is different from what was used in the original appraisal and amended for one or both of the following reasons:

i. a **timber damaging event** where trees are damaged as a result of a major wind or ice (>20 ha), wildfire or landslide; or

ii. a licence holder voluntarily defers harvest area within the Old Growth Technical Advisory Panel - Priority Deferral Areas (https://catalogue.data.gov.bc.ca/dataset/old-growth-technical-advisory-panel-tap-priority-deferral-areas/resource/47333f4e-1c84-

[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.

4bb5-b3fe-6031fa78de20).

Notwithstanding subsection 2.2 (1) and (2) and 4.3.1(3) and (7), a cutting authority issued July 31, 2005 or later may be reappraised under this subsection and include non-tributary development projects required to access timber in the original cutting authority if construction started prior to the cutting authority amendment.

d. the cutting authority **reserve area** or **leave tree characteristics** are different from what was used in the original appraisal. These changes include:

   i. for cutting authorities issued July 1, 2019 or later, an absolute[1] change in the reserve area(s); or

   ii. for cutting authorities issued May 1, 2020 or later, a change in the leave tree characteristics.

e. the cutting authority has an **unharvested cutblock**, with at least one other harvested cutblock within the cutting authority.

   i. An unharvested cutblock is defined as a cutblock with 90% or more of the cutblock's total net cruise volume still remaining on site (i.e. standing or felled/decked timber), and the timber is not reserved from cutting.

   ii. The cutting authority must be scale-based for billing, issued July 1, 2022 or later and have 15% or more of the cutting authority's net merchantable area unharvested (i.e. the area with timber still remaining and not reserved from cutting, including an estimate of the area associated with any timber felled/decked and left on site).

   iii. The reappraisal must exclude all unharvested cutblocks and the associated development projects in the original appraisal.

   iv. Planned or constructed development projects in the original appraisal and removed in the reappraisal may be submitted in the ADS of a future tributary cutting authority.

   v. A licensee representative may request from a person authorized to determine a stumpage rate, an exemption from submitting a reappraisal under this subsection if the unharvested cutblock(s) is due to circumstances out of their control.

3. A licensee representative must submit a certified changed circumstance reappraisal data submission; or certify that no changed circumstances have occurred since the original appraisal no later than 180 days after the completion of primary harvesting activities or the cutting authority expiry date, whichever comes first.

   a. A licensee representative may request an extension to the 180-day submission deadline by submitting a work plan and a new submission date to the regional revenue staff. If agreed to, the proposed submission date is the new submission deadline.

   b. A licensee representative may choose not to submit a changed circumstance reappraisal if by using the appraisal effective in the month/quarter with the highest stumpage rate, the difference between the total stumpage for the appraisal and the total

[1] Measured as the absolute change, e.g. an addition of 0.5 hectares and the subtraction of 0.5 different hectares is a 1-hectare change for the purposes of this section.

stumpage that would be calculated in a reappraisal as a result of a changed circumstance, is less than $5,000. Total stumpage is calculated using the rate ($/$m^3$) x the total net cruise volume (m^3).

i. The provision in paragraph (b) above does not apply to a changed circumstance under subsections (2)(b)(ii), (2)(d) or (e).

ii. In the case of paragraph (b) above, a licensee representative must certify and provide a rationale why a changed circumstance reappraisal data submission is not required.

4. The effective date of a changed circumstance reappraisal is the day after the effective date of the cutting authority.

5. If a person responsible for stumpage determinations believes that a changed circumstance has occurred, and the licensee fails to provide a reappraisal data submission, they may initiate a reappraisal using the information that is available to them and must notify the licensee of that action.

6. If a changed circumstance is a result of a change in subsections (2)(b) through (2)(e) and a portion of the cutting authority area does not have cruise information available, the person who determines the stumpage rate may use the best information he/she deems available.

2.2.3 Suddenly and Severely Damaged Timber

1. A licensee or BCTS representative may submit a reappraisal data submission for suddenly or severely damaged timber. Notwithstanding subsection 2.2 (1), the submission must be within 90 days of the date when the event that caused the sudden and severe damage stopped on the cutting authority area.

2. At least 15% of the total net cruise volume must be suddenly and severely damaged.

3. If a licensee was responsible or failed to comply with the Wildfire Act or Wildfire Regulations this section does not apply.

4. Only the standing timber remaining on the cutting authority area after the sudden and severe damage may be considered in the reappraisal data submission.

5. 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.

6. Where the licensee amends the cutting authority to include additional damaged timber, the licensee must submit cruise information for approval, for the added area, to the Area Pricing Statutory Decision Maker (SDM) prior to the commencement of harvest on the added area.

   a. This added cruise information cannot be used in a Suddenly and Severely Damage Timber reappraisal but, if approved by the SDM in subsection 6 above, must be used in the changed circumstance reappraisal after the completion of harvesting.

2.2.4 Minister's Direction

1. The Minister may at any time direct the determination, redetermination, or variance of a stumpage rate.
2. The Minister must direct the determination, redetermination, or variance of a stumpage rate effective on a future date.
3. The determination, redetermination or variance must be made in accordance with any other directions that the Minister may direct.
4. A licensee representative must submit to the district manager a reappraisal data submission, if requested by the district manager within 45 days of the Minister's direction.
5. Where a reappraisal is warranted but there isn't any timber remaining on the cutting authority area to apply the redetermined stumpage rate to, the reappraisal is redundant and not required.

2.2.5 Insect Damage

1. a. A cutting authority with an adjustable stumpage rate 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 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. Subject to subsection (1)(d) of this section, the licensee may 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.

d. If a cutting authority area is reappraised due to a changed circumstance or suddenly and severely damage timber (in accordance with section 2.2.2 or 2.2.3) and the effective date of the reappraisal is prior to an insect damage reappraisal for that cutting authority area under this section, then the cutting authority area must be reappraised subsequent to the reappraisal using only the same information and effective date as the original insect damage reappraisal under this section (except for information that has changed as a result of the reappraisal under section 2.2.2 or 2.2.3).

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.

2.2.5.1 Insect Damage Reappraisal Procedure

1. The insect damage reappraisal procedure is the procedure required by section 2.2.1.

2.2.5.2 Effective Date of an Insect Damage Reappraisal

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

2.2.6 Compilation Version

1. Notwithstanding section 2.2 (1) and (2), a licensee representative may submit a reappraisal data submission for a cutting authority with the cruise data recompiled using a newer compilation version approved in the cruise compilation manual.
2. The reappraisal data submission must be the ADS that was used in the most recent appraisal or reappraisal of the cutting authority area prior to the new compilation revision, with changes only permitted to the reappraisal data submission as a result of the recompilation of the cruise data.
3. The reappraisal data submission must be submitted in ECAS no later than 6 months after the effective date of the amended cruise compilation manual.
4. The effective date of the reappraisal is the day after the date of the most recent appraisal or reappraisal for the cutting authority.

2.2.7 Unsuitable Transportation Route (UTR)

1. Notwithstanding section 2.2 (1) and (2), a licensee representative may submit a reappraisal data submission for a cutting authority issued July 31, 2005, or later if a portion of the original appraised transportation route is deemed unsuitable under section 1.4.4.1.
2. The effective date of the reappraisal is on the same date the transportation route is deemed unsuitable.
3. The reappraisal data submission must be the ADS that was used in the most recent appraisal or reappraisal of the cutting authority, with changes only permitted to the cycle

time and point of appraisal (as the case may be) to reflect the 'alternate' transportation route determined under section 1.4.4.

2.2.7.1 When an UTR Determination Ceases to Exist

1. A licensee representative must submit a reappraisal data submission if
   a. an 'alternate' transportation route was used in a previous appraisal or reappraisal; and
   b. an UTR determination is revoked or expires under section 1.4.4.1.
2. The effective date of the reappraisal is the day after the transportation route is deemed suitable again.
3. The reappraisal data submission must be the ADS that was used in the most recent appraisal or reappraisal of the cutting authority, with changes only permitted to the cycle time and point of appraisal (as the case may be) to reflect the transportation route determined under section 1.4.4.
4. A reappraisal data submission is not required if the cutting authority expires, or primary harvesting is complete before the UTR determination is revoked or expires.

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 monthly on the first day of each month.
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 month.
3. The stumpage rate for a cutting authority issued for a woodlot licence that meets the criteria in section 6.1.3(2) must be adjusted monthly.

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 monthly 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 error will be corrected and the rate(s) recalculated for the cutting authority, and
      ii. if volume has been billed at the incorrect rate, the billing will be corrected.
   d. i. where the director has determined that a correctable error has been made in the calculation of a monthly stumpage adjustment, the director will correct the error and determine if the current monthly adjustment will be recalculated or if it will be applied with the next month's adjustment.

2.5 Redetermination of Stumpage Rate by Agreement

1. If within thirty 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 thirty-day period referred to in subsection (1).

2.6 Post-Harvest Appraisal Reconciliation

1. Regional revenue staff may review fully appraised data submissions (not including BCTS) based on a stumpage revenue risk management framework.
2. Licensee representatives will be notified of any cutting authorities selected for review within 60 days of a changed circumstance reappraisal data submission and/or certification in ECAS that no further changes have occurred.
3. The review of cutting authorities selected in subsection (1) will be completed within 12 months of a changed circumstance reappraisal data submission and/or certification in ECAS that no further changes have occurred.

3 Final Estimated Winning Bid

3.1 Estimated Winning Bid Equation

1. The variables defined in section 3.2 and the equation below are used to calculate the estimated winning bid (EWB).

EWB ($/m^3) =

CPIF *
[59.77
+ 0.3117 * RSP * SB
+ 0.1656 * RSP * CB
+ 38.74 * CE
- 166.0 * CE * CEDAR_DECAY
- 31.56 * HE
- 18.89 * (BA^2)
- 20.45 * LAYE
- 20.89 * CABLE
+ 3.994 * ln (VOL/1000)
- 18.11 * SB * (DECAY - OTHER_ATTACK)
- 34.35 * FIRE
+ 8.982 * ln (VPT)
- 2.166 * (CYCLE + (0.5 * CYCLE_INC6))
- 7.325 * ZONE_9
- 17.70 * (DECID - BLOWDOWN) * CB
+ 9.998 * (CB * (1 - RG35))
- 13.04 * (GREY^2)
+ 11.54 * LN_DANB
- 27.36 * PC20
- 0.2412 * SLOPE15
- 25.15 * (BLOWDOWN – GREY)
- 43.72 * EXCHANGE
- 0.7584 * AAC_DELTA_12MR
- 0.2064 * ISOLATED * (DISTANCE - 200)
- 2.929 * CAMP
- 33.75 * OTHER_ATTACK]

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

Note: ln = natural logarithm.

3.2 Estimated Winning Bid Variables

3.2.1 Consumer Price Index (CPI)

1. CPIF is the consumer price index factor calculated as CPI/178.3; and
2. CPI is the Monthly B.C. Consumer Price Index as published every month in the Stumpage Appraisal Parameters (refer to section 1.2.2).

3.2.2 Real Stand Selling Price (RSP)

1. RSP ($/m^3) is the Stand Selling Price divided by the CPIF (defined above).
2. Stand Selling Price ($/m^3) is the volume-prorated sum of the Coniferous Species Selling Price.
3. Coniferous Species Selling Price ($/m^3) = Species Lumber AMV /1000 x Species Appraisal LRF
4. Species Lumber AMV ($/mbm) is the monthly species lumber average market value as published in the Stumpage Appraisal Parameters (refer to section 1.2.2).
5. Species Appraisal LRF = Species Cruise LRF + Species LRF Update Add-on
6. Species Cruise LRF is from the cruise compilation; unless
   a. 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.
7. Species LRF Update Add-ons are from Table 3-1 (for the selling price zone in which the cutting authority is located).

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	102	76	95	110	89
Spruce	123	102	119	131	107
Balsam	115	96	108	124	98
Douglas-fir	92		82	100	
Larch	88		82	100	
Cedar	67	47	64	76	
Hemlock	69	50	67	81	
White pine	86		80	96	
Yellow pine			83	104	

8. CB (Cruise-Based) is 1 if the cutting authority is cruise-based, 0 if scale-based.
9. SB (Scale-Based) is 1 if the cutting authority is scale-based, 0 if cruise-based.

3.2.3 Cedar (CE)

1. CE is the fraction of Total Net Coniferous Volume that is cedar.
2. CEDAR_DECAY is the cedar decay % from the appraisal summary report/100.

3.2.4 Hemlock and Balsam (HE and BA)

1. HE is the fraction of Total Net Coniferous Volume that is hemlock.
2. BA is the fraction of Total Net Coniferous Volume that is balsam.

3.2.5 Larch and Yellow Pine (LA and YE)

1. LAYE is the fraction of Total Net Coniferous Volume that is larch and yellow pine.

3.2.6 Cable Harvest Method (CABLE)

1. CABLE is the fraction of total harvest method volume that is appraised as overhead cable, tethered or winch-assist, or skyline harvest methods (refer to sections 1.1 and 3.3 for harvest method definitions).

3.2.7 Average Conifer Volume (VOL)

1. VOL for BCTS cutting authorities is the Total Net Coniferous Volume.
2. VOL for a Small Volume Tenure Cutting Authority is the greater of the sum of all AACs for all the licenses (including lump sum tenures) that the licensee has in the same TSA (as the cutting authority being appraised) or the Total Net Coniferous Volume.
   a. A Small Volume Tenure Cutting Authority means a cutting authority where the sum of all AACs for all the licenses (including lump sum tenures) that the licensee has in the same TSA (as the cutting authority being appraised) is less than the zonal volume in Table 3-2 (for the selling price zone in which the cutting authority is located).

      A list of Small Volume Cutting Authorities is maintained by Timber Pricing Branch and is available on the web at:

      https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/interior-timber-pricing/interior-small-volume-table
3. VOL for Major Tenure Cutting Authorities is the volume in Table 3-2 (for the selling price zone in which the cutting authority is located).
   a. A Major Tenure Cutting Authority means a cutting authority that does not meet the criteria in subsections (1) or (2).

Table 3-2: Zonal Volume[1]

Zone	Total Net Coniferous Volume (m^3)
5	41,769
6	38,042
7 OK	38,488
7 SE	35,246
8	46,424
9	40,824

3.2.8 Conifer Decay (DECAY)

1. DECAY is the prorated coniferous species decay % (from the appraisal summary report)/100.
2. Scale Based (SB) is 1 if the cutting authority is scale-based, 0 if cruise based.
3. See the Other Attack Volume variable for a definition of OTHER_ATTACK.
4. If (DECAY – OTHER_ATTACK) is <0 then (DECAY – OTHER_ATTACK) = 0

3.2.9 Fire Damage (FIRE)

1. FIRE is the prorated coniferous species fire % (from the appraisal summary report)/100.

3.2.10 Volume per Tree (VPT)

1. VPT is the cutting authority average net volume per tree (all species - from appraisal summary report).

3.2.11 Conifer Volume Per Hectare

1. Conifer Volume Per Hectare does not currently contribute to the calculation of a stumpage rate.

3.2.12 Cycle Time (CYCLE)

1. CYCLE = PRIMARY + SECONDARY cycle time.
2. CYCLE_INC6 is CYCLE – 6.0 hours. If < 0, then 0.
3. PRIMARY is the cycle time for the appraised Transportation Route determined under section 1.4.4 and deemed to include all costs of loading, hauling, weighing, unloading, return time, and unavoidable delays.
4. If a district has developed standard cycle time schedules from specific road junctions to log dumps or the point of appraisal, the person who determines the stumpage rate must use these

[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 1-1. Then if the SP zone is zone 7, use the descriptions below to pick the appropriate zonal volume from Table 3-2 based on which district the cutting authority area is located in.

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

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

schedules to calculate the primary and secondary cycle time, 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.

5. The primary and secondary cycle time are calculated using distances each rounded to the nearest 100m.
6. SECONDARY is the cycle time when logs must be truck hauled following dewatering/unloading.
   a. To determine the secondary cycle time, use distances from the reload site to the closest mill associated with the point of appraisal. In the case of multiple reload sites, use the reload site that results in the shortest cycle time to the mill.

3.2.12.1 Cycle Time Procedure (Truck Haul Only)

1. 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 cutblock junction.
   a. In the case of helicopter logging, the nearest road in (1) is the nearest road suitable as a drop point.
2. Determine the cycle time from the cutblock junction in subsection (1) by road to the common junction.
   a. In-block road speeds from the cutblock junction to the cutblock boundary must use road speeds of 10 km/h loaded and 15 km/h empty to a maximum 1.0 km. For road speeds beyond 1.0 km the district schedules and in-block road speeds are used.
   b. For this subsection the common junction means the nearest point from the cutblock junctions in subsection (1) over which all appraised timber on the cutting authority area must travel on the way to the point of appraisal.
3. Weight the cycle times in subsection (2) by the Total Net Cruise Volume for each cutblock to determine the weighted average cycle time to the common junction.
4. Determine the cycle time from the common junction by road to the closest mill associated with the point of appraisal.
   a. In the case of a route to the point of appraisal involving rail transportation, determine the cycle time from the common junction by road to the appraisal place of unloading for placement on railcars.
5. Sum the times calculated under subsection (3) and (4) and add an estimate for unavoidable delay of 93 minutes for cable yarding systems or 78 minutes for all other harvesting systems.

3.2.12.2 Cycle Time Procedure (Truck and Water Transportation Combined)

1. 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 cutblock junction.
   a. In the case of helicopter logging, the nearest road in (1) is the nearest road suitable as a drop point.
2. Determine the cycle time from the cutblock junction in subsection (1) by road to the log dump.
   a. In-block road speeds from the cutblock junction to the cutblock boundary must use road speeds of 10 km/h loaded and 15 km/h empty to a maximum 1.0 km. For road speeds beyond 1.0 km the district schedules and in-block road speeds are used.
   b. In the case of a changed circumstance reappraisal due to low water levels (refer to section 2.2.2 (2)(a)(vii)), determine the cycle time for the transportation route (refer to section 1.4.4) and the route for the next closest log dump (with the same water transportation system), and weight the cycle time by the Total Net Cruise Volume for each location.
   c. A log dump means a location listed in Appendix VI; and that has not been determined unsuitable under section 1.4.4.1; or any location not included in Appendix VI that has in place authorizations allowing use of the location as a transfer point for water transportation of timber.
3. Weight the cycle times in subsection (2) by the Total Net Cruise Volume for each cutblock to determine the weighted average cycle time.
4. Sum the times calculated under subsection (3) and add an estimate for unavoidable delay of 93 minutes for cable yarding systems or 78 minutes for all other harvesting systems.

3.2.13 Fort Nelson – Peace Selling Price Zone (ZONE_9)

1. ZONE_9 is 1 if the cutting authority is appraised with selling price zone 9, otherwise Zone 9 = 0.

3.2.14 Deciduous Volume (DECID)

1. DECID is the fraction of the Total Net Cruise Volume that is the Total Net Deciduous Volume.
2. If (DECID – BLOWDOWN) is <0 then (DECID – BLOWDOWN) = 0.
3. See the Blowdown Volume variable for a definition of BLOWDOWN.
4. See the Cruise Based Cutting Authority variable for a definition of CB.

3.2.15 Cruise Based Cutting Authority with <35% MPB (CB)

1. CB is 1 if the cutting authority is cruise-based, 0 if scale based.
2. RG35 is 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.

3.2.16 Cruise Based Cutting Authority with >35% MPB (CB)

1. See above for definitions of CB and RG35.

3.2.17 Grey Attack MPB (GREY)

1. GREY is the fraction of Total Net Coniferous Volume that is grey Mountain Pine Beetle attacked Lodgepole pine.
2. See above for definitions of CB and RG35.

3.2.18 Ground Skidding Harvest Method (GS)

1. Ground Skidding Harvest Method does not contribute to the calculation of a stumpage rate but must be reported in the appraisal data submission.

3.2.19 Average Natural Log of Number of Bidders (LN_DANB)

1. LN_DANB is the average of the natural log of the number of bidders for the proxy district, in which the cutting authority area is located (see Table 3-3).

Table 3-3: Proxy District Average of Natural Log of Number of Bidders (LN_DANB)

District	Proxy District	TFL #	Geographic Area of TSA	TSA#	Supply Block	LN_DANB
DCC	DCC		Williams Lake	29	Other than A, B, C, D	0.83
	DCH		Williams Lake	29	A, B, C, D	0.77
DCS	DCS					1.03
DFN	DFN					0.00
DKA	DHW	18	Robson Valley Kamloops	17 11	A	0.88
	DKA		Excluding proxy district DHW			1.14
DKM	DKM					0.55
DMH	DMH					1.08
DMK	DMK					0.59
DND	DND					0.88
DOS	DOS					0.97
DPC	DPC					0.43
DPG	DHW	18	Robson Valley Kamloops	17 11	A	0.88
	DPG		Excluding proxy district DHW			0.92
DQU	DQU					0.93
DRM	DRM					0.70
DSE	DAB	3, 8, 23	Arrow Boundary	1 2		0.98
	DCO	55, 56	Golden Revelstoke	7 27		0.67
	DKL		Kootenay Lake	13		0.75
DSS	DSS					0.83
DVA	DVA		Vanderhoof	24	D, F	0.70
	DJA		Fort St. James	24	A, B, C, E	0.83

3.2.20 Partial Cut Harvest Method (PC)

1. PC is the fraction of harvest method volume that is appraised as partial cut. PC = (100 – CAPCUT %)/100. See section 4.6 for definition of CAPCUT %. The 80% limit in the definition of CAPCUT in section 4.6 does not apply.
2. PC20 is for cutting authorities with greater than 20% partial cut retention levels. PC20 = (PC – 0.2)/0.8.
3. If PC20 > 1 then PC20 = 1. If PC20 < 0 then PC20 = 0.

3.2.21 Average Slope of the Cutting Authority (SLOPE)

1. SLOPE is the cutting authority average slope (%) from the appraisal summary report.
2. SLOPE15 = (SLOPE - 15), if slope is < 15 then SLOPE15 = 0.

3.2.22 Truck Haul Method

1. Haul method does not contribute to the calculation of a stumpage rate but must be determined for the transportation route (refer to section 1.4) to the point of appraisal and reported in the appraisal data submission.
2. The haul method is considered Off-highway when the entire transportation route is over roads administered under the *Industrial Roads Act* and Forest Service Roads as defined in the *Act.*
3. The haul method is considered Highway when a portion of the transportation route is over roads administered under:
   a. the *Transportation Act*, or
   b. the *Industrial Roads Act* and Forest Service Roads (as defined in the *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.

3.2.23 Blowdown Volume (BLOWDOWN)

1. BLOWDOWN is the fraction of the Total Net Cruise Volume that is the Total Blowdown Volume. It is calculated using the volume weighted average blowdown % by harvest method.
2. If (BLOWDOWN – GREY) is <0 then (BLOWDOWN – GREY) = 0.
3. See the Grey Attack MPB variable for a definition of GREY.

3.2.24 Currency Conversion Rate (EXCHANGE)

1. EXCHANGE is the Bank of Canada – US Exchange Rate US$/C$ (2-month average). This rate is published monthly in the Interior Appraisal Parameters.

3.2.25 12-Month Running AAC minus Harvest (AAC_DELTA_12MR)

1. AAC_DELTA_12MR is published monthly in the Interior Appraisal Parameters.
2. AAC_DELTA_12MR is Interior AAC (adjusted for MPB partitions) minus total Interior harvest volume.

3.2.26 Isolated Cutting Authority (ISOLATED)

1. ISOLATED is 1 if the DISTANCE is >200 km, otherwise ISOLATED is 0.
2. DISTANCE (km) is the straight-line distance from the Centre of the Cutting Authority to the closest support centre listed in Table 3-4.
3. The Centre of the Cutting Authority is determined by weighting the distance from the geographic center point of each cutblock in the cutting authority by the Gross Area of each cutblock.
4. Notwithstanding subsection (2),
   a. a cutting authority geographically located in the Peace District must use the Fort St. John support centre;
   b. a cutting authority geographically located in the Mackenzie District, Stuart Nechako District or Robson Valley TSA must use the Prince George support centre; and
   c. a cutting authority geographically located in the Kamloops TSA block A must use the Kamloops support centre.

Table 3-4: Support Centre

Support Centre	Albers X	Albers Y
Castlegar	1607319	511171
Chilliwack	1294782	467153
Cranbrook	1739304	553889
Fort St. John	1318482	1260855
Kamloops	1401994	644576
Kelowna	1468497	562390
Penticton	1463073	518247
Prince George	1213091	995542
Quesnel	1234626	891124
Terrace	831972	1060276
Vernon	1478764	605572
Williams Lake	1264550	797941

3.2.27 Camps (CAMP)

1. CAMP is the fraction of the applicable volume appraised as camp. An entire cutblock(s) volume must be included in the applicable volume (i.e. no splitting cutblocks).
2. Workers who work on the cutblock(s) must reside in a camp and travel each day of work during timber harvesting and hauling operations from the camp to the cutting authority area.
3. To qualify as a camp, the camp must:
   a. be comprised of buildings or structures of a permanent or semi-permanent nature. For the purposes of this definition, a structure with axles/wheels (such as a "travel trailer") does not qualify;
   b. provide accommodations including 'food premises';
   c. be located outside municipal boundaries and communities or settlements along a highway corridor, and
   d. be approved by the regional appraisal coordinator.
4. A list of approved camps is available on the Timber Pricing Branch website and is the official record.

3.2.28 Other Attack Volume (OTHER_ATTACK)

1. OTHER_ATTACK is the fraction of Total Net Coniferous Volume that is insect attack other than Defoliators or Mountain Pine Beetle attacked Lodgepole pine.

3.3 Specified Operations

1. Subject to section 3.3.1(1), a specified operation cost estimate described in this section may be included in an appraisal data submission if it is used in the harvesting or transportation of timber on the cutting authority and meets the requirements.
   a. In the case of a Timber Sale Licence the cost estimate is only included if it is required, or for high development costs (refer to section 3.3.6).
2. Specified operation cost estimates may be weighted according to the applicable volume. For Water and Special Transportation systems, and Uneven-aged Forest Management, the applicable volume must include the entire cutblock(s) volume (i.e. no splitting cutblocks).

3.3.1 Water Transportation Systems

1. A water transportation cost estimate is included in an appraisal data submission if the transportation route selected for the purposes of section 1.4.4(3) includes the water transportation system.

3.3.1.1 Surface Tow System

1. Towing is the transportation of logs by water and is deemed to include all costs of dumping, booming, developing and operating dumping and booming grounds, and towing.
2. The cost estimate may include an amount for each of the following:
   a. Dump and Boom
      i. Reservoir and Marine = $9.06/$m^3$

      (Reservoir: Arrow, Kinbasket, Ootsa, Revelstoke, and Williston)

      ii. Natural Lake = $3.20/$m^3$
   b. Tow
      i. Reservoir and Marine = $/$m^3$ = (0.0376 * D) – 0.9857

      Where D equals the one-way tow distance in kilometres. If there is more than one log dump in the appraisal transportation route, weight the distance by the net cruise volume attributed to each log dump.

      If the Tow equation yields less than $1.50/$m^3$, then use $1.50/$m^3$.

      (Reservoir: Arrow, Kinbasket, Ootsa, Revelstoke, and Williston)

      ii. Natural Lake = $2.35/$m^3$
   c. Dewater and Reload = $4.37/$m^3$

   (Only considered if a dam transfer is required or if logs are dewatered and reloaded on trucks for further transportation to the mill yard)

3.3.1.2 Log Barge System

1. Barging is the transportation of logs by barge and is deemed to include all analogous costs involved in the barging of logs.

   a. Log Barge = $20.54/m^3

3.3.2 Special Transportation Systems

3.3.2.1 Rail Transportation

1. Rail transportation is the transportation of logs by rail and deemed to include all costs associated with servicing the appropriate cutting authorities, (excluding all on-site costs of owning and operating a camp facility).
2. The cost estimate for rail transportation may include an amount for each of the following:

   a. Truck-to-Rail Transfer = $4.37/m^3

   (Only considered if railway transportation is used in combination with truck haul transportation)

   b. Railway transportation is based on the following table for the points of origin shown.

Table 3-5: Railway 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

3.3.2.2 Barge Transportation (Used for Truck Haul)

1. Barge transportation (used for truck haul) is the transportation of logging trucks by private barge/ferry where a transportation route is interrupted by a body of water and is deemed to include all costs of servicing the appropriate cutting authorities (including the operation of a bubble-system where applicable).

   The cost estimate (regardless of ownership) is $8.55/m^3.

3.3.2.3 Barge Transportation (Not Used for Truck Haul)

1. Barge transportation (not used for truck haul) is the transportation of crew when a cutting authority can be served only by water, and daily (operating days only) ferry/barge services are feasible for crew transportation.

   The cost estimate (regardless of ownership) is $1.56/m^3.

3.3.3 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 metres, 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 metres requirement is waived.
4. Cut blocks where the average yarding distance is 600 metres or greater (measured horizontally) will be considered as helicopter in the appraisal.
5. The specified operation cost estimate is: $6.02/$m^3$ for the harvest method volume appraised as skyline.

3.3.4 Helicopter Logging

1. The specified operation cost estimate is $130.77/$m^3$ for the harvest method volume appraised as Heli.

3.3.5 Horse Logging

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

3.3.6 High Development Cost

1. For BCTS timber sale licences only, where the development cost estimate (DC) is determined under chapter 4, the high development cost specified operations estimate (HDC) is calculated as follows:

   HDC $/$m^3$ = DC – 2.16

   If DC < = 4.01, HDC = 0

3.4 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 specified operations that are applicable to the appraisal or reappraisal of the cutting authority area.
2. Expressed as an equation:

$$\text{FEWB} = \text{EWB} - \left[\frac{TSO}{1 - LG}\right]$$

$$TSO = \text{SO} \times (\text{CPI} \div \text{ACPI})$$

Where:

TSO	=	Total Specified Operation ($/m^3)
EWB	=	The Estimated Winning Bid determined under section 3.1.
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 3.3 expressed in $/m^3.
CPI	=	Monthly BC Consumer Price Index (refer to section 3.2.1)
ACPI	=	171.5 (the average CPI for the last year of the cost base 2022)
LG	=	Low Grade percent adjustment (refer to section 4.7) (for cruise based cutting authorities, LG = 0)

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

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*, and subject to subsection (2) of this section, the types of costs that may be used in the calculation of the tenure obligation adjustment (TOA) 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 the holder of the cutting authority will incur that kind of cost:
   a. when exercising an authority or carrying out an obligation under the cutting authority, or
   b. 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 structures that are part of the road.
4. The tenure obligation adjustment is calculated under section 4.8.

4.2 Administration Costs

4.2.1 Forest Management Administration (FMA)

1. Forest management administration (FMA) costs are those costs directly related to supervision and administration of the activities listed below such as:

   - Office Operations,
   - Cruising,
   - Environmental Protection,
   - Archaeological surveys,
   - Right-of-way easements,
   - Foreshore and other land leases,
   - Tree marking beetle probing & pheromone baiting,
   - Engineering (e.g. Bridge inspections, road layout and design, surveys including geotechnical surveys, excluding those applicable as part of an engineered cost estimate under section 4.3.6),
   - Suitable Secondary Stand Structure Survey,
   - Consultants' fees (e.g. Fees attributable to forest management activities).

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

   If CP_VPH<300: FMA ($/$m^3$) = Constant + (0.00210 * CP Slope^2) + (3.834 - 0.03104 * CP VPH)

   If CP_VPH>=300: FMA ($/$m^3$) = Constant + (0.00210 * CP Slope^2) - (0.01826 * CP VPH)

   Where:

   CP Slope^2 is the square of the average slope from the Cruise Appraisal Summary Report.

   CP VPH is the Total Net Cruise Volume / Net Merchantable Area from the Cruise Appraisal Summary Report.

   Constant is the amount in Table 4-1 (for the region in which the cutting authority is geographically located).

3. If the equation in subsection (2) yields less than the minimum in Table 4-1 then use the minimum amount. If the equation yields more than the maximum in Table 4-1 then use the maximum amount.

Table 4-1: FMA Regional Constants

Region	Constant	Min ($/m^3)	Max ($/m^3)
Cariboo	15.78	7.48	21.61
Kootenay-Boundary	15.82	5.39	22.14
Northeast	18.20	10.44	19.05
Omineca	14.93	6.84	18.24
Skeena	15.91	3.64	20.86
Thompson-Okanagan	14.95	5.42	21.68

4.2.2 Final Forest Management Administration (FFMA)

1. For cruise based cutting authorities:

$$\text{FFMA}\left(\frac{\$}{m^3}\right) = \text{FMA}\left(\frac{\$}{m^3}\right) * \text{CTC}$$

2. 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

CTC = Cut to Cruise factor = ATNCV / TNCRV

(ATNCV and TNCRV are as defined in Section 4.6)

4.3 Development

4.3.1 Development Costs

1. The total development cost estimate in an appraisal data submission must be determined in accordance with, and subject to, the conditions of this section.
2. The two categories of development are:
   a. New construction projects; and
   b. Reconstruction, reactivation, upgrade or replacement projects.
3. A development cost estimate is calculated for each constructed, reconstructed, reactivated, upgraded or replaced road, bridge or other drainage structure required on Crown land, or on private land (as provided in section 4.3.1.2), in order for the licensee to access Crown timber authorized for harvest.
4. The total development cost estimate is all the development cost estimates 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 4.3.5 when the project is a new construction project, other than a situation listed in paragraph (b).
   b. Engineering cost estimate (ECE): an ECE is made in accordance with section 4.3.6 when:
      i. a new construction project is a situation listed in section 4.3.6(8), or,
      ii. a Combo road provided for in subsection (6) of this section; or
      iii. the project is a reconstruction, reactivation, upgrade or replacement project.
6. Where at least 20% of a length of new road subgrade construction is made of ECE eligible sections (as described in subsection 4.3.6 (8) (a) to (f)) the entire length of new road subgrade construction may constitute an ECE project. The length of new road (referred to as a "combo road") must be measured from a POC to a POT or a road junction to a POT (i.e. road junctions are not considered a POT for the purposes of this definition). Examples of potential combo road configurations are illustrated below in Figure 2.

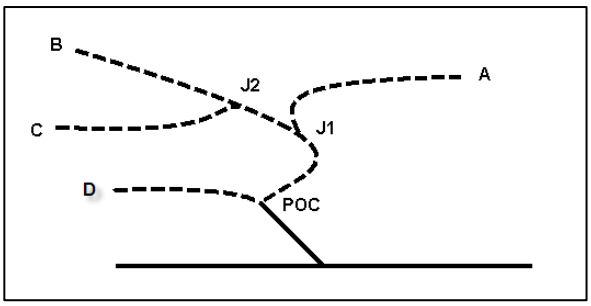


Figure 2: Combo Road Examples – POC to A, B, or C; POC to D; J1 or J2 to a POT.

7. A development project cost estimate must only be used in an appraisal data submission for a tributary cutting authority.

8. a. A development project cost estimate must only be used in an appraisal data submission for a cutting authority under the same licence authorising the development; unless approved by the regional appraisal coordinator or apportioned in accordance with section 4.3.1.4.

   b. The costs in paragraph (a) may be shared by two or more licensees. If this is the case, there must be a written agreement between the parties. A licensee's share of these costs may be apportioned in accordance with section 4.3.1.4.

   c. Development projects identified for future cutting authorities in the original appraisal (as per appendix IV (3)(f)) cannot be used in a reappraisal for the same cutting authority.

9. 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.

10. 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.

11. 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 the use of the cost of that project has received prior approval from the person who determines the stumpage rate.

12. Notwithstanding subsection (7), an upgrade project cost estimate as per section 4.3.6 (8)(k)(ii) may be submitted in an appraisal data submission for a bridge structure administered by a non-ministry authority when timber from the cutting authority area will travel over the bridge structure.

13. 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.

14. 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

1. When a new or reconstructed road or structure on private land is required for Crown timber extraction, the estimated cost of the road or structure will be included in the appraisal of a tributary cutting authority according to the procedures of section 4.3.1 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, reactivation, upgrade 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 costs 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. The regional manager may enter into a written agreement with the licensee(s) authorizing the distribution of a portion of a development project(s) cost estimate to one or more licences and cutting authorities where:
   a. the development costs for the authorized project(s) are required to access one or more cutting authorities; and
   b. the development cost exceeds $4.00/m^3$ exclusive of development costs apportioned to the first fully appraised cutting authority under any prior agreement under this section.
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. For development projects completed prior to a request for an amortization agreement,

the development cost estimate must reflect the actual development work based on equipment type and hours worked, hours/or days in labour or professional services, materials and costs.

c. 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.

d. 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 be revised to be consistent with the cost base of the manual in effect on the effective date of the tributary cutting authority.

e. 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.

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 apportionment specified in the agreement under this section may be adjusted twice 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.

i. Two additional tributary cutting authority that were not previously identified in the agreement may be added during the total term of the agreement.

j. i. If the amortization agreement is approved prior to development work being started, the agreement must be amended post-development to reflect the actual non-tabular ECE development work based on the equipment type and hours worked, hours/or days in labour or professional services, materials and costs, and redistributed among the same licences and cutting authorities, at the same proportion originally identified in the agreement.

ii. Cutting authorities included in the agreement must use the amended development costs to determine a changed circumstance under section 2.2.2 (2)(a)(iii).

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 Subgrade Construction

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

4.3.2.1 Subgrade Construction Definition

1. 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.
2. The subgrade construction cost estimate excludes:
    a. right-of-way felling and logging, and
    b. rock drilling, explosives, loading of explosives and blasting.

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 100m. Each section should be 1 km or longer, although some individual section lengths less than 1 km but greater than or equal to 100m are acceptable for extreme variations of slope or % rock. The section length includes that portion traversing through landings.
    b. All road segments less than 100m, are to be aggregated with other adjacent road sections, 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 100m may be aggregated with a similar 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 a 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 100m. Seismic lines being used for roads, which 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, large boulders (each greater than 150 cm in diameter), and boulders between 50 and 150cm in diameter. It may be rippable or may require drilling and blasting.

a. Bedrock and large boulders (each greater than 150 cm in diameter)

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 %.

b. Boulders each between 50 cm and 150 cm diameter

Rock composed of boulders between 50 cm and 150 cm diameter 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 sample plot measurements are taken along the section length and the % rock calculated.

The percent rock for boulders between 50 cm and 150 cm diameter is determined as follows:

$$Rock\,\% = \frac{a}{A} \times 100$$

Where:

a = Area (3.1415 * r^2) of boulders between 50 and 150 cm diameter in a sample plot.

Note: For boulders to be considered in the plot at least 50% of the area of the boulder must fall inside the plot boundary.

A = Area (3.1415 * r^2) of the sample plot

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 is considered “DRY”.

6. Biogeoclimatic Zone Abbreviations Used in Section 4.3.2.3

ESSF - Engelmann Spruce - Subalpine Fir
ICH - Interior Cedar Hemlock
SBS - Sub Boreal Spruce
CWH - Coastal Western Hemlock

4.3.2.3 Subgrade Construction Cost Equations

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 4.3.6(8)(q)
2	8,385 + (7.462 * SLOPE %^{2}) + (5,487 * ICH_CWH) + (9,665 * LT)
3	13,654 + (175 * SLOPE % * LT) + (2,075 * ESSF)
4	9,234 + (214 * SLOPE %) + (140 * SLOPE% * LT)
5	7,929 + (261 * SLOPE % * LT) + (2,076 * SBS) + (2,361 * WET)
6	11,507 + (5,829 * LT)
7	5,227 + (103 * SLOPE %) + (3,211* LT) + (5,902 * ESSF) + (6,338 * SBS)
8	6,689 + (5.889 * SLOPE %^{2}) + (7,136 * LT) + (4,228 * ESSF)
9	17,770 + (7.745 * SLOPE %^{2}) + (9,316 * LT) - (151 * ICH) – (4,853 * IDF)
10	8,734 + (6.962 * SLOPE %^{2}) + (2,987 * ESSF) + (6,132 * LT)
11	14,070 + (398 * SLOPE %) + (20,389 * LT)
12	12,862 + (5.897 * SLOPE %^{2}) + (10,008 * ESSF) + (7,273 * ICH) + (10,712 * LT)

Where:

Road groups are defined in Table 4-2.

LT = as defined in section 4.3.2.2. 1 if a long-term road. Otherwise LT = 0.

SLOPE % = as defined in section 4.3.2.2.

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

ICH_CWH = 1 if road construction is within the ICH or CWH biogeoclimatic zone. Otherwise ICH_CWH = 0.

IDF = 1 if road construction is within the IDF biogeoclimatic zone. Otherwise IDF = 0.

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

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

4.3.2.4 Subgrade Construction Road Groups

1. For tabular subgrade construction and stabilizing material cost equations, the road groups in Table 4-2 must be used.
2. Woodlot and Timber Licence cutting authorities are assigned to the road group for the area in which they are geographically located.

Table 4-2: 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		Prince George TSA, SBs C, D, 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

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

4.3.2.5 Snow and Ice (Winter) Roads

The subgrade cost estimate for new snow and ice roads is $7,678/km.

4.3.3 Tabular Drainage Structures

1. 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).
2. 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 guidebook can be accessed at:

   https://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/Road/FRE.pdf/fpc/fpcguide/Road/FRE.pdf

4.3.3.1 Culvert Cost Estimates

1. The costs in Table 4-3 Part A, include all costs of supplies, transporting the culvert to the jobsite and installation of the culvert to the final subgrade stage. The costs in Part B exclude the installation of the culvert to the final subgrade. No interpolation of the costs is permitted.
2. Where the use of culverts greater than or equal to 0.95 m in diameter is required in tabular subgrade construction, the cost estimates are determined from Table 4-3 Part A.
3. Where an engineering cost estimate in section 4.3.6 requires the use of culverts from 0.3 m to 1.8 m, the cost estimates are determined from Table 4-3 Part A or B.
4. Engineered cost estimates are required where a culvert larger than 1.8 m, or 20 m in length is used.

Table 4-3: Culvert Cost Estimates

PART A: INSTALLED CULVERT COST ESTIMATE ($)														
Culvert length (m)	Equivalent Round Diameter													
	0.3	0.4	0.45	0.5	0.6	0.7	0.8	0.9	0.95	1	1.2	1.4	1.6	1.8
	X-Sectional Area (m^2)													
	0.07	0.13	0.16	0.2	0.28	0.38	0.5	0.64	0.71	0.79	1.13	1.54	2.01	2.54
9	917	1,003	1,126	1,289	1,617	2,026	2,517	3,089	3,376	3,703	5,094	6,771	8,694	10,862
10	917	1,062	1,198	1,380	1,744	2,198	2,744	3,380	3,698	4,062	5,608	7,471	9,608	12,017
11	917	1,121	1,271	1,471	1,871	2,371	2,971	3,671	4,021	4,421	6,121	8,171	10,521	13,172
12	917	1,180	1,344	1,562	1,998	2,544	3,198	3,962	4,344	4,780	6,635	8,871	11,435	14,326
13	917	1,239	1,417	1,653	2,126	2,717	3,426	4,253	4,667	5,139	7,149	9,571	12,349	15,481
14	917	1,298	1,489	1,744	2,253	2,889	3,653	4,544	4,989	5,499	7,662	10,271	13,262	16,635
15	917	1,358	1,562	1,835	2,380	3,062	3,880	4,835	5,312	5,858	8,176	10,971	14,176	17,790
16	917	1,417	1,635	1,926	2,508	3,235	4,108	5,126	5,635	6,217	8,690	11,671	15,090	18,944
17	1,012	1,476	1,708	2,017	2,635	3,408	4,335	5,417	5,958	6,576	9,203	12,372	16,003	20,099
18	1,044	1,535	1,780	2,108	2,762	3,580	4,562	5,708	6,280	6,935	9,717	13,072	16,917	21,254
19	1,076	1,594	1,853	2,198	2,889	3,753	4,789	5,999	6,603	7,294	10,231	13,772	17,831	22,408
20	1,108	1,653	1,926	2,289	3,017	3,926	5,017	6,289	6,926	7,653	10,744	14,472	18,744	23,563
PART B: SUPPLY AND DELIVERY ONLY ($/m)														
avg./m	67	83	91	102	124	151	183	221	240	262	354	465	592	736

4.3.3.2 Bridge Cost Estimates

1. The cost estimates for single-span, single-lane, steel girder bridges from 6 m to 15 m in length with timber decks, and concrete lock block or sill foundations with 1 or 2 tiers are determined from Table 4-4. This includes reinstallation of previously used superstructures and/or concrete lock-block substructures at a new site.
2. The costs in Tables 4-4 include all costs of materials, delivery and installation (and dismantling as the case may be) to the final subgrade stage. A total installation or reinstallation cost is determined by summing the values appropriate for the situation and design.
   a. Notwithstanding subsection (3), for the reinstallation of previously used superstructures where one or more deck module must be replaced, the individual deck module cost may be included in the cost estimate. Each deck module cost estimate is the tabular deck module amount ($) from table 4.4 divided by the superstructure length (m) multiplied by 3.
3. Costs are not to be interpolated. For span length and abutment height use the nearest unit provided in the table. For example, a structure of 12.2 m span length, use 12.0 m. An abutment height of 0.6 m use 0.9 m.
4. Span Length (m) is the distance measured from the one end of the steel girder to the other end of girder (bridge span out-to-out).

5. Abutment Height (m) is the distance from the ground surface interface to the bottom of the girders, measured at the mid-point, before back-filling.
6. Abutment Tiers (#) is the number of rows of concrete lock blocks.

Table 4-4: L100, L-75 and CL/BCL-625 Bridge Cost Estimates

Superstructure Components			Span Length (m)			
			6	9	12	15
Supply of New Steel Structure		L100	15,800	20,550	26,900	33,200
		L75 or BCL-625	14,200	18,450	24,200	29,800
Supply of New Deck Modules	Untreated	L100	7,650	11,500	15,350	19,200
		L75 or BCL-625	6,550	9,850	13,050	16,350
	Treated	L100	10,950	16,650	22,100	27,650
		L75 or BCL-625	9,400	13,950	18,600	23,350
Installation of Superstructure			5,650	5,650	8,200	12,200
Supply, Installation and Removal of a Work Bridge			5,150	5,150	5,700	7,000
Dismantling and Transportation (re-usable structure)			1,950	1,950	3,200	3,200

Substructure Components (1 side only)			Abutment Height or Tiers	
			<=0.9m or 1 tier	>0.9m,<=1.8m or 2 tiers
Supply and Installation of Abutments	Sill (Log)		2,700	4,200
	Lock Block	Supply (new only)	8,100	8,400
		Install	9,550	10,500
Dismantle and Transport of Used Concrete Blocks			1,500	2,600

Supply and Installation of New Bearings	Cap	12x12 Treated Timber	350
		16x16 Treated Timber	450
		Pre-cast Concrete	3,800
	Sill	Untreated Timber	300
		Treated Timber	450
		Pre-cast Concrete Pad	1,950
		Cast-in-Place Concrete Pad	3,200

Bridge Survey & Design and Certification		
Survey	Site Specific	4,500
	Standard	4,150

Certification	Abutment Height or Tiers	
	<=0.9m or 1 tier	>0.9m, <=1.8m or 2 tiers
	1,950	1,950

7. For sites located more than 200 km from the licensee storage site or the initial bridge location (for bridges that are being relocated), an additional engineered cost estimate may also be included for transportation costs beyond 200 km for:
   a. delivering the structure and materials; and
   b. mobilization and demobilization if the equipment is not required for adjacent tabular or other ECE development projects.

8. Bridge cost estimates for types or sizes not represented in this section require a Qualified Professional Estimate, Detailed Calculation Estimate or Tendered Contract.

4.3.3.3 Log Bridge Cost Estimates

The cost estimate for log bridges may be determined using the tabular log bridge methodology in the Coast Appraisal Manual effective at the time of the appraisal data submission.

4.3.4 Tabular Stabilizing Material

1. 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. 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.
2. The unit cost estimate ($/km) for the additional stabilizing material includes:
   a. borrow pit preparation,
   b. loosening and/or pushing materials in borrow pits when required (e.g., compacted or cemented gravel, oversize material, etc.),
   c. loading gravel trucks,
   d. truck hauling, and
   e. spreading and compacting the material.
3. The additional stabilization material cost estimate excludes:
   a. rock drilling, explosives, loading of explosives and blasting in borrow pit construction.
4. 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.
5. The cost estimate for addition of stabilizing material must be determined using the cost equations in this section or a tendered contract as per section 4.3.6(6)(c), unless:
   a. the material is placed in conjunction with geo fabric, geo grids, corduroy or where the stabilizing material requires processing such as screening or crushing (refer to section 4.3.6 (8)(n)), or
   b. the material includes the re-application of surface binding agents including but not limited to $CaCl_2$ or $MgCl_2$ to protect the integrity of existing surface materials (and where the road has been part of a major stabilization project in the past).

4.3.4.1 Stabilizing Material Cost Equations

1. 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 4.3.6(8)(q)
2	28,941
3	19,546
4	25,066
5	21,838
6	24,229
7	37,145
8	21,838
9	21,838
10	25,066
11	25,066
12	25,066

Where:

Road groups = as defined in Table 4-2.

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

4.3.5 Tabular 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	$9,917 each
b.	Remedial Fences and Wing Fences (post and wire, post and rail and/or log snake fence construction only), used to mitigate the removal of natural range barriers (Cost estimates for a total wing fence length less than 100 m = 100 m in ECAS)	$3,438 per 100 m
c.	Logging Debris Fences (logging debris used to protect sensitive riparian areas within or adjacent to a cut block)	$250 per 100 m

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

a.	Single pipe crossing	$5,557 each
b.	Multiple pipe crossing (where 2 or more pipes are crossed within the same right-of-way)	$2,989 per pipe

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

4.3.6 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 development project must be estimated by preparing an engineering cost estimate.
2. The Director, Timber Pricing Branch may approve standardized procedures for preparing ECEs for those situations listed in subsection (8).
3. Where the non-tabular portion of the ECE development work has been carried out prior to the time of the submission of the appraisal in ECAS, the actual equipment types and hours worked, hours/or days in labour or professional services, materials and costs must be used in the ECE.
4. A reappraisal may not be used to change an ECE to a tabular cost estimate.
5. A district engineering staff member, 30 days prior to the commencement of works, must be notified of all upgrades on Forest Service Road bridges and major culverts. Where required by the district engineer, the work may require design and/or supervision by a Professional Engineer. The costs associated with the survey, design and supervision in this situation will be allowed as part of the structural maintenance ECE.
6. A development project or a portion of a project is made on the basis of either:
   a. site-specific data using common subgrade construction variables (section 4.3.2.2), and
   b. tabular drainage structure costs (section 4.3.3), tabular stabilizing material costs (section 4.3.4), and tabular equipment and labour rates (Appendix I) in this manual.
      i. for costs incurred prior to the submission of an appraisal in ECAS, use the manual in effect at the time the costs were incurred.
      ii. for costs not incurred prior to the submission of an appraisal in ECAS use the manual in effect at the time of the submission.
      iii. for costs in a reappraisal, use the manual identified in paragraph (i) or (ii) in the original appraisal; or
   c. the results of an arm's length competitive bid process (tendered contracts) where a contract is awarded to the lowest bidder. Closed or non-advertised tenders with limited invitations must receive a minimum of three bids.

i. These costs may be re-estimated in a reappraisal provided the original competitive bid 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.

7. The Crown is not liable for any difference between the appraisal estimate and the licensee's actual costs.
8. The following specific situations are considered for engineering cost estimates:
   a. New construction of long term, primary access road sections, with a finished running surface greater than 6 metres wide and agreed to by district engineering staff.
   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%.
   d. Road construction within terrain class 4 and 5.
   e. 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.
   f. 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.
   g. Bridges (including ice bridges) not included in the subgrade construction cost estimate or represented in section 4.3.3.2 or 4.3.3.3 (tabular bridges). Eligible costs are described in section 4.3.6(9).
   h. Structural maintenance of bridges, substructure and cribwork.
   i. Road Reactivation activities necessary to re-open a road where there were no prior road maintenance obligations.
   j. Reconstruction of roads and pertinent structures required to return the subgrade or structure to the standard that existed at the time of original construction.
   k. i. 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.
      ii. With the intention to upgrade the road standard, a reassessment of the specified design vehicle load configuration for an existing bridge structure administered by a non-ministry authority. The submitter must receive approval of the reassessment from the non-ministry authority prior to submitting the cost estimate in an appraisal.
   l. Placement of stabilizing material to an existing road with uninterrupted road section lengths of 300m or more; regardless if the road was previously stabilized.

m. Culverts greater than 1.8 m in diameter, or culverts greater than 20 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.

n. Placement of stabilizing material to a new or existing road where geo fabric, corduroy, crushed and/or screened rock/gravel is used.

o. Placement of portable platform(s) to be used as a structural roadway.

p. Retaining walls, railway crossings and other structures (such as multiple culverts, baffled culverts, arched culverts, culverts that require a "dry" installation, and other structures determined by the timber pricing co-ordinator).

q. New road subgrade construction and ballast cost estimates in Road Group 1 are determined using the methodology outlined in the Interior Detailed Engineering Cost Estimate Procedures.

r. The costs of designing and constructing a forwarding road. 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.

s. Rock blasting within new sections of tabular road subgrade or borrow pit construction. Blasting is not restricted by the minimum 0.100 km section length requirement.

t. Road rehabilitation activities because of the *Forest and Range Act*, Ministerial Order U-7-018, U-7-020, U-7-022, U-7-024, U-7-027 and U-4-002 to protect Ungulate Winter Range.

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

   a. Freight (for materials).

   b. Provincial sales tax if applicable (for materials purchased prior to July 1, 2010 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 crossing assurance statement 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. The costs of mobilization and demobilization may be included in the ECE if the equipment is not required for adjacent tabular or other ECE development projects.

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

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

12. For appraisals on permits issued on or after July 1, 2024, ECEs calculated on older cost base years will be trended to the current cost base using the following table. Once this ECE value is set to the cost base year of the initial appraisal it remains fixed for the life of the permit, unless specifically changed in a reappraisal.

Cost Base Year	Trend Factor	Cost Base Year	Trend Factor
2013	1.2358	2018	1.1331
2014	1.2236	2019	1.1072
2015	1.2105	2020	1.0986
2016	1.1882	2021	1.0687
2017	1.1640	2022	1.0000

13. The final ECE cost to be incorporated into total development cost in the automated monthly stumpage rate calculation (separate from any CPI trending in the initial appraisal data, as above) will be trended from the IAM of the initial appraisal to the current IAM as follows:

final ECE cost ($) = ECE cost ($) * ACPI / ACPI-initial

Where:

ACPI = As defined in section 3.4.2

ACPI-initial = The ACPI from the IAM in effect on the day of the cutting permit issue date in the Forest Tenures Administration system. If the cutting permit issue date is older than July 1, 2015 then ACPI-initial = 138.8.

4.3.7 Portable Platforms

1. Where portable platforms are needed, a licensee must use the following costs in the preparation of an ECE:
   a. Cost of Platforms - $2.93 per platform per day
      i. Billable days are from the date platforms are installed to the date they are removed or the completion of hauling, whichever comes first.
      ii. Hauling of timber must be reasonably uninterrupted with the exception of weekend days. Long periods of inactivity (i.e. breakup) will result in the ineligibility of platform costs for that period of inactivity.
   b. Cost of transporting the platforms to the install site and return:
      i. Transport to and from staging area:
         • $ per platform = 52.30 + (0.04660 x distance)
         • Where:
            • Distance (in km) = distance from originating location to staging area and back
      ii. Transport from staging area to install site:
         • $ per platform = 25.08 + (2.429 x distance)
         • Where:
            • Distance (in km) = distance from staging area to the midpoint of the install site and back
            • If Distance = 0, then $ per platform = 0.
         • Maximum value = $49.85 per platform
   c. Installation and removal of platforms:
      • $ per metre = 10.65 + (19.82 x density) + (28.52 x BWBS) + (19.73 x ESSF)
      • Where:
         • density = number of platforms / ECE distance (in metres)
         • BWBS = 1 if ECE is in BWBS BEC zone, otherwise BWBS = 0
         • ESSF = 1 if ECE is in ESSF BEC zone otherwise ESSF = 0
      • Minimum value = $15.27 per metre
      • Maximum value = $80.05 per metre
   d. Mobilization/demobilization of specialized equipment:
      i. Actual costs may be submitted but must be accompanied by:
         • Specific equipment being transported
         • Invoices

4.4 Road Management

4.4.1 Road Maintenance Costs

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

a. all access maintenance
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 (<950 mm)
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 (<300m distance)
y. water bar construction (seasonal)

2. The cost estimate for all road maintenance carried out on logging operations depends on the geographic location of the cutting authority area (refer to Table 4-5).
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 maintenance cost estimate for the TFL or TSA/supply block in which the cutting authority is geographically located.

Table 4-5: Road Maintenance Cost Estimates

RMG	TFL #	TSA	TSA #	Supply Block	$/m^3
A	1, 41	Bulkley	3	All	8.69
		Cascadia	45	9, 10, 11	
		Cassiar	4	All	
		Kalum	10	All	
		Kispiox	12	All	
		Nass	43	All	
		Pacific	44	All	
		*Lillooet	15	All	
B	48	Dawson Creek	41	All	6.85
		Fort Nelson	8	All	
		Fort St. John	40	All	
C		Mackenzie	16	All	6.51
D		Prince George	24	A, B	5.26
E		Lakes	14	All	6.11
		Morice	20	All	
F		Prince George	24	C	6.03
G		Prince George	24	D	7.45
H	5[1]	Prince George	24	E, F, I	3.20
I	30, 52, 53	Prince George	24	G, H	6.00
		*Quesnel	26	E, F, G, H, I	
		*Cascadia	45	5, 6, 7, 8	
J		*Quesnel	26	A, B, C, D	4.13
K		*Williams Lake	29	A, B, C, D, E, I	4.90
L		*Williams Lake	29	K, L, M, N	5.29
		*100 Mile House	23	E, F, G. H	
M		*Williams Lake	29	F, G, H, J	4.73
		*100 Mile House	23	A, B, C, D	
N	18	Robson Valley	17	All	6.63
		*Kamloops	11	1	
O	35	*Kamloops	11	2, 3, 4	8.55
P		*Merritt	18	All	4.58
Q	8, 59	*Boundary	2	E, F	5.72
		*Okanagan	22	1, 2, 3	
R	49	*Okanagan	22	4, 5, 6, 7	6.61
S	33, 55, 56	*Golden	7	All	8.70
		*Okanagan	22	8, 9	
		*Revelstoke	27	All	
T	3, 23	*Arrow	1	All	8.96
		*Boundary	2	C, D, G	
		*Cascadia	45	1, 2, 3, 4	
U		*Kootenay Lake	13	All	4.01
V	14	*Cranbrook	5	All	4.34
		*Invermere	9	All	

[1] The portion of TFL 52 that was within the former TFL 5
* Indicates TSAs in the South Area

4.4.2 Road and Land Use Costs

1. 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 to the timber pricing coordinator; and
   b. receive written approval of the road or land use charge from the regional manager.
2. Charges as a Share of Road Maintenance
   a. No recognition is made of such charges. The road maintenance cost estimate in section 4.4.1 includes all relevant costs whether incurred directly by the licensee or by payment to another party for services performed.
3. Charges Other Than for Road Maintenance

   There are four 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.

   d. Ministry of Transportation and Infrastructure (MOTI) Roads

      Traffic control costs a licensee will incur as a condition of a MOTI junction permit may be submitted as a road use charge. The cost estimate must reflect a reasonable effort to concentrate trucks to minimize the number of days when traffic control is required.

4. Other Land Use Charges

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

4.4.3 Final Road Management

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

1. For cruise based cutting authorities:

$$\text{FRM } (\$/m^3) = [\text{RM } (\$/m^3) + \text{RU } (\$/m^3)] * \text{CTC}$$

2. For scale based cutting authorities:

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

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

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

Where:

IRM	=	Interim Road Maintenance cost estimate
IRU	=	Interim Road and Land Use Charges
RM	=	Road Maintenance cost estimate from table 4-5
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
CTC	=	as defined in Section 4.2

4.5 Cultural Burning

1. For the purposes of this section, Cultural Burning is defined as the controlled application of fire on the landscape to achieve specific cultural objectives. Common objectives for cultural burning include but are not limited to wildfire mitigation, food and medicinal plant revitalization, and habitat enhancement.
2. Where the licensee will carry out a cultural burn on the cutting authority area after the completion of primary harvesting activities and waste assessment, the licensee may claim costs only if all the following conditions are met:
   a. A legal obligation to conduct the cultural burn exists.
      i. Obligation may be contained in a FSP, FLP, other legal plan or enactment
   b. A burn plan has been developed with, and endorsed by, an Elder and/or Fire Knowledge Keeper.
      i. Elder or Fire Knowledge Keeper must be from, or endorsed by, a First Nation on whose traditional territory the cultural burn is to be conducted.
   c. The Cultural Burn is within the cutting authority area.
   d. The Cultural Burn is conducted prior to reforestation.
3. Where the cultural burn includes area outside the cutting authority area, only costs for that portion within the cutting authority area may be claimed.
4. A detailed cost estimate must be submitted with the ECAS submission.
   a. The cost estimate may include costs for:
      i. Preparation of prescription and burn plan,
      ii. Implementation of burn,
      iii. Mop-up and monitoring
   b. The cost estimate must not include costs for:
      i. personnel or equipment not directly involved in the completion of the cultural burn (ie. trainees or observers, camera crews)
      ii. any activity not directly related to the completion of the cultural burn.

4.6 Silviculture Cost Estimate (Basic and Enhanced)

1. The 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 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 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 4-7 lists the basic and enhanced cost estimates ($/ha) for Biogeoclimatic Ecosystem Classification (BEC) zone, subzone and variant combinations (BEC units) across the interior. Where the BEC unit 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 unit, a prorated basic silviculture cost estimate will be determined by prorating the cost estimates from Table 4-7 for the primary and secondary BEC units identified in the appraisal data submission based on their respective % by net merchantable area identified in the appraisal data submission. Where applicable, enhanced silviculture costs will be included in the cost estimate for the primary and/or secondary BEC units. The ADS submission must indicate the percentage (by area) of the primary and secondary BEC units that are committed to enhanced silviculture standards.
5. The silviculture cost estimate is calculated as follows:

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

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.

ATNCV = Adjusted Total Net Coniferous Volume (m^3). Where ATNCV is the Total Net Conifer Volume adjusted by the factor in Table 4-6 by species and selling price zone (SPZ).

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

Table 4-6: Cruise Adjustment Factors by Species and Selling Price Zone

SPZ	BA	CE	FI	HE	LA	LO	SP	WH	YE
5	0.823	0.919	1.049	0.898	0.830	0.966	0.933	0.402	0.643
6	0.814	1.170	0.977	0.915	0.818	0.754	1.029	0.390	0.631
7	0.789	0.903	0.995	0.898	0.836	0.835	0.940	0.410	0.649
8	0.867	0.941	1.002	0.920	0.852	0.518	1.215	0.424	0.665
9	0.809	0.911	0.981	0.890	0.822	0.836	0.936	0.394	0.635

Cost =

$$\frac{AreaB1 * (BC1 + E\%1 * EC1) + AreaB2 * (BC2 + E\%2 * EC2)}{AreaB1 + AreaB2}$$

Where:

AreaB1 = Area of the primary BEC unit in hectares.

AreaB2 = Area of the secondary BEC unit in hectares.

BC1 = Basic cost estimate for the primary BEC unit.

BC2 = Basic cost estimate for the secondary BEC unit.

E%1 = % of primary BEC committed to enhanced silviculture standards.

E%2 = % of secondary BEC committed to enhanced silviculture standards.

EC1 = Enhanced cost estimate for the primary BEC unit.

EC2 = Enhanced cost estimate for the secondary BEC unit.

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 where 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.

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

(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) = vGS(C) + (vGS(P) / GS(PCUT/100)) + vOC(C) + (vOC(P) / OC(PCUT/100)) + vSK(C) + vHorse(C) + vHeli(C) + (vHeli(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)

4.6.1 Enhanced Silviculture

1. Costs for enhanced silviculture may be included in the calculation of the silviculture cost estimate for BEC units with an enhanced silviculture cost estimate in Table 4-7.
2. To qualify for the enhanced silviculture cost estimate, a management unit plan that includes management objectives and the associated silviculture regimes required to achieve those objectives must be in place and endorsed by the District Manager. There are a number of ways the endorsed management unit plan requirement can be satisfied:

a. District Manager endorsed Type 4 or Integrated Silviculture Strategies that include (or have been revised to include) increased establishment densities.

b. Approved TFL Management plans that include increased establishment densities in the timber supply assumptions.

c. District Manager endorsed silviculture strategies or stocking standards.

d. District Manager endorsed forest health strategies.

3. To qualify for the enhanced silviculture cost estimate, the cutting authority area must be included in a Forest Stewardship Plan (FSP) that contains enhanced stocking standards. Enhanced stocking standards must specify the minimum planting density to be achieved at regeneration date for each applicable BEC unit.

4. Management unit plans must include regeneration dates that are reflective of artificial regeneration, and a high minimum density of planted seedlings. The enhanced silviculture cost does not apply where natural regeneration or direct seeding is used to restock the harvest area.

5. Refer to Appendix V for a list of enhanced silviculture regimes.

4.6.2 Root Disease Control

1. The costs for root disease control may only be included in the calculation of the TOA when the treatment is based on a field assessment and signed by a qualified professional.

2. For each cutting authority, the root disease control cost estimate is determined as follows:

   a. Treatment Area Cost per Hectare = 1,108.37 + (5.21 * SLOPE) + (0.32 * SPH)

   b. Treatment Area Cost Estimate ($) = Treatment Area Cost per Hectare * AREA

   c. Total Treatment Cost Estimate ($) = Σ (Treatment Area Cost Estimate ($))

   Where:

   SLOPE is the average slope from the cruise compilation. The block average or slope summary that best reflects the treatment area must be used.

   SPH is the total stems per ha (including dead potential and dead useless) greater than or equal to the 40 cm DBH class from the cruise compilation (after leave tree reductions). The stand and stock table must be used.

   AREA is the number of hectares in a treatment area.

3. If the equation in subsection (2)(a) yields less than $1,193/ha, then use $1,193/ha. If the equation yields more than $1,520/ha, then use $1,520/ha.

4.6.3 Total Silviculture Cost Estimate

$$\text{Total Silviculture } (\$/m^3) = \text{Silviculture } (\$/m^3) + \frac{\text{Root Disease Control } (\$)}{\text{ATNCV or TNCRV } (m^3)[1]}$$

Table 4-7: BEC Silviculture Cost Estimates

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

Basic Silviculture

BEC Unit	$/ha	BEC Unit	$/ha	BEC Unit	$/ha	BEC Unit	$/ha
BWBS	1,191	ESSFmv4	1,014	ICHmm	2,044	IDFxx1	1,412
BWBSdk	1,483	ESSFmw1	1,225	ICHmw1	2,235	IDFxx2	1,412
BWBSmk	1,713	ESSFmw2	1,225	ICHmw2	2,151	**MH**	440
BWBSmw	836	ESSFvc	2,359	ICHmw3	1,734	MHmm1	440
BWBSvk	1,191	ESSFwc2	1,894	ICHmw4	2,337	MHmm2	440
BWBSwk1	1,408	ESSFwc3	2,357	ICHmw5	2,014	**MS**	1,089
BWBSwk2	1,418	ESSFwc4	2,384	ICHvc	2,467	MSdc1	941
BWBSwk3	1,401	ESSFwcw	2,360	ICHvk1	2,663	MSdc2	939
CWH	432	ESSFwh1	2,359	ICHvk2	1,779	MSdc3	947
CWHds1	432	ESSFwh2	2,282	ICHwc	1,749	MSdk	1,324
CWHms1	432	ESSFwh3	2,271	ICHwk1	2,200	MSdm1	1,674
CWHvm1	600	ESSFwk1	1,655	ICHwk2	1,676	MSdm2	1,252
CWHvm2	598	ESSFwk2	1,736	ICHwk3	2,099	MSdm3	1,434
CWHws1	457	ESSFwm1	1,501	ICHwk4	1,982	MSdv	1,089
CWHws2	344	ESSFwm2	1,501	ICHxm1	1,750	MSdw	1,029
ESSF	1,482	ESSFwm3	1,501	ICHxw	1,871	MSxk1	1,092
ESSFdc1	2,092	ESSFwm4	1,499	**IDF**	1,412	MSxk2	916
ESSFdc2	1,410	ESSFwv	1,482	IDFdc	1,412	MSxk3	1,113
ESSFdc3	1,595	ESSFxc1	1,366	IDFdh	1,412	MSxv	447
ESSFdcw	1,661	ESSFxc2	1,293	IDFdk1	1,620	**PP**	2,254
ESSFdh1	1,482	ESSFxc3	1,302	IDFdk2	1,383	PPxh1	2,254
ESSFdh2	1,482	ESSFxv1	600	IDFdk3	1,196	PPxh2	2,254
ESSFdk1	1,147	ESSFxv2	624	IDFdk4	624	**SBPS**	596
ESSFdk2	1,194	**ICH**	1,887	IDFdk5	1,338	SBPSdc	692
ESSFdkw	1,212	ICHdk	1,887	IDFdm1	1,874	SBPSmc	534
ESSFdv1	1,367	ICHdm	1,611	IDFdm2	1,288	SBPSmk	770
ESSFdv2	1,381	ICHdw1	2,085	IDFdw	1,412	SBPSxc	304
ESSFmc	1,113	ICHdw3	2,116	IDFmw2	1,573	**SBS**	1,322
ESSFmh	2,333	ICHdw4	2,134	IDFww	1,412	SBSdh1	1,358
ESSFmk	1,461	ICHmc1	910	IDFww1	1,412	SBSdh2	1,358
ESSFmm1	1,772	ICHmc2	1,017	IDFxc	1,412	SBSdk	1,273
ESSFmm2	1,681	ICHmk1	1,580	IDFxh1	1,966	SBSdw1	1,303
ESSFmm3	1,594	ICHmk2	1,737	IDFxh2	2,068	SBSdw2	1,226
ESSFmv1	836	ICHmk3	1,392	IDFxk	1,412	SBSdw3	1,160
ESSFmv2	1,280	ICHmk4	1,609	IDFxm	1,280	SBSmc1	1,094
ESSFmv3	1,097	ICHmk5	1,798	IDFxw	1,412	SBSmc2	1,082

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

BEC Unit	$/ha
SBSmc3	887
SBSmh	1,322
SBSmk	1,350
SBSmk1	1,322

BEC Unit	$/ha
SBSmk2	1,665
SBSmm	1,378
SBSmw	1,851
SBSvk	2,034

BEC Unit	$/ha
SBSwk1	1,566
SBSwk2	1,896
SBSwk3	1,489
SWB	1,240

BEC Unit	$/ha
SWBmks	1,240
SWBvk	1,240
SWBvks	1,240

Enhanced Silviculture

BEC Unit	$/ha
ESSFdc2	502
ESSFdcw	349
ESSFmc	140
ESSFmk	227
ESSFmv1	403
ESSFmv3	308
ESSFmw1	255
ESSFwc3	275
ESSFwk1	287
ESSFxc1	423
ESSFxc2	421

BEC Unit	$/ha
ICHmk3	220
ICHvk2	371
ICHwk2	291
ICHwk3	238
ICHwk4	116
IDFdk1	578
IDFdk2	664
IDFdk3	684
IDFdk4	900
IDFxh1	273
IDFxh2	612

BEC Unit	$/ha
IDFxm	686
MSdm2	619
MSxk1	637
MSxk2	625
SBPSdc	1,010
SBPSmk	1,027
SBSdk	238
SBSdw1	354
SBSdw2	802
SBSdw3	276
SBSmc1	388

BEC Unit	$/ha
SBSmc2	338
SBSmc3	417
SBSmh	287
SBSmk1	281
SBSmw	473
SBSvk	298
SBSwk1	333
SBSwk3	244

Wildfire Enhanced Silviculture

BEC Unit	$/ha
IDFdk1 *	529
IDFdk3 *	840

BEC Unit	$/ha
IDFdk4 *	1,499
IDFxh2 *	200

BEC Unit	$/ha
IDFxm *	843
MSxk2 *	1,245

* Indicates a 2017 Wildfire Enhanced Silviculture Plan

BEC units that have expired and are not to be included in appraisals submitted after October 31, 2018.

BEC Unit	$/ha
BWBSdk1	1,483
BWBSmw1	836
ESSFdk	1,212
ESSFdv	1,367

BEC Unit	$/ha
ESSFmw	1,225
ESSFwc1	2,333
ESSFwm	1,501
ESSFxc	1,302

BEC Unit	$/ha
ICHdw	2,085
ICHdw2	2,085
IDFdk	1,338
MSdk1	1,029

BEC Unit	$/ha
MSxk	1,092
PPdh2	1,412

Reference the applicable Land Management Handbook crosswalk tables where necessary.

BEC units that have expired and are not to be included in appraisals submitted after October 31, 2021

BEC Unit	$/ha
IDFmw1	1,750

Reference the applicable Land Management Handbook crosswalk tables where necessary.

4.7 Low Grade Percent Adjustment

1. The POA low-grade percent adjustment by timber species as shown in Tables 4-8 must be used in the calculation of the specified operations and 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.
3. The low-grade percent adjustment to be used in the calculation of the specified operations and 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 4-8: Point of Appraisal (POA) Low Grade Percent Adjustment

POA	BA	CE	FI	HE	LA	LO	SP	WH	YE
100 Mile	0.4078	0.292	0.2258	0.1889	0.1915	0.6453	0.1996	0.868	0.2818
Adams Lake	0.3907	0.2656	0.1347	0.4494	0.1951	0.7018	0.1829	0.7371	0.2823
Armstrong	0.565	0.2997	0.229	0.4171	0.304	0.6218	0.2678	0.4799	0.2823
Bear Lake	0.4376	0.5714	0.1772	0.6769	0.1915	0.8469	0.4542	0.6413	0.2818
Burns Lake	0.4815	0.5714	0.1268	0.637	0.1915	0.6533	0.3251	0.6413	0.2818
Castlegar	0.5274	0.3341	0.1896	0.2379	0.2067	0.2731	0.2239	0.6262	0.2823
Chetwynd	0.3314	0.2938	0.1661	0.3657	0.1915	0.2733	0.2143	0.6413	0.2818
Creston	0.2734	0.2411	0.1818	0.1378	0.1303	0.2928	0.1318	0.2846	0.2823
Elko	0.28	0.2897	0.2096	0.2056	0.162	0.2099	0.1372	0.6262	0.2823
Engen	0.4328	0.5714	0.1268	0.637	0.1915	0.7808	0.3117	0.6413	0.2818
Fort St. James	0.4126	0.5714	0.593	0.637	0.1915	0.7388	0.3015	0.6413	0.2818
Fort St. John	0.3845	0.2938	0.1661	0.3657	0.1915	0.3643	0.2465	0.6413	0.2818
Fraser Lake	0.5086	0.5714	0.1268	0.637	0.1915	0.7777	0.3197	0.6413	0.2818
Galloway	0.3232	0.1304	0.2064	0.3421	0.1712	0.3193	0.2025	0.6262	0.3265
Grand Forks	0.3412	0.2795	0.1257	0.2169	0.1518	0.3326	0.134	0.6262	0.2823
Houston	0.4519	0.5714	0.1268	0.637	0.1915	0.5803	0.2607	0.6413	0.2818
Lavington	0.4555	0.2563	0.1563	0.3434	0.2318	0.4545	0.1736	0.5077	0.2823
Mackenzie	0.4314	0.5714	0.1268	0.7605	0.1915	0.7686	0.2984	0.6413	0.2818
Merritt	0.379	0.2897	0.1787	0.3421	0.2719	0.5191	0.262	0.9028	0.2823
Midway	0.4039	0.4132	0.164	0.5562	0.1971	0.3595	0.1757	0.6262	0.2823
Prince George	0.4565	0.6453	0.1102	0.6386	0.1915	0.6868	0.2305	0.6413	0.2818
Princeton	0.4287	0.2897	0.248	0.3421	0.1328	0.3842	0.2227	0.6262	0.2823
Quesnel	0.4019	0.4188	0.1211	0.3794	0.1915	0.6882	0.178	0.6413	0.2818
Radium	0.3342	0.3345	0.1264	0.2183	0.3261	0.2479	0.1396	0.6262	0.2331
Revelstoke	0.3825	0.3743	0.0951	0.3808	0.2298	0.4231	0.1417	0.4574	0.2823
Smithers	0.3566	0.5714	0.1268	0.637	0.1915	0.3737	0.2158	0.6413	0.2818
Strathnaver	0.4033	0.5714	0.1012	0.637	0.1915	0.5914	0.1397	0.6413	0.2818
Terrace	0.2802	0.1863	0.8841	0.3505	0.1915	0.3294	0.1393	0.6413	0.2818
Thrums	0.4309	0.2425	0.1133	0.1826	0.1678	0.4132	0.2215	0.5978	0.2823
Vanderhoof	0.4328	0.5714	0.1268	0.637	0.1915	0.7808	0.3117	0.6413	0.2818
Westbank	0.4595	0.2396	0.1432	0.3421	0.1839	0.405	0.1757	0.6262	0.2823
Williams Lake	0.3046	0.284	0.1804	0.1842	0.1915	0.4921	0.1554	0.8678	0.2818
Ymir	0.2751	0.2742	0.1635	0.1996	0.1797	0.4039	0.1657	0.6262	0.2823

4.8 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:

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

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

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 ($/m^3)
LG	=	Low Grade percent adjustment
		(for cruise based cutting authorities, LG =0)
RFM	=	Return to Forest Management Factor = 1.052
MLC	=	Market Logger Cost ($/m^3)
	=	[(MLDC / (1-LG)) + MLSO] x [CPI / ACPI]
		Where:
		MLDC= $1.85/m^3 (the average market logger development cost for the auction dataset)
		MLSO= $0.10/m^3 (the average market logger specified operation cost from the auction dataset)
CPI	=	Monthly BC Consumer Price Index (see section 3.2.1)
ACPI	=	Refer to Section 3.4.

5 Stumpage Rate Determination

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

1. An upset can either be an upset rate ($/m^3) or an upset value ($).
2. An upset rate or determination of an upset value must not be lower than $0.25/m^3.
3. An MPS Indicated Upset (IU) must be determined by the regional revenue staff using data from a full appraisal; where

   IU = FEWB x (1- DF)

   FEWB = Final Estimated Winning Bid from section 3.4

   DF = 0.30 (Discount Factor)
4. A cutting authority must be scale-based unless it meets the criteria for a cruise-based cutting authority in section 6.9 or the Executive Director, BCTS has approved cruise-based under section 106 of the *Act*.
5. All upsets are fixed for the term and all extensions except where a reappraisal is completed under section 2.2.3 (suddenly and severely damaged timber) or section 2.2.4 (minister's direction).

5.1.1 Upset Stumpage Rates (Upset)

1. Except as otherwise provided in this section, the upset must be the greater of either the **MPS indicated upset (IU)** or the timber sales manager's calculated cost to prepare the timber for sale (i.e. the variable cost upset or '**VCU**'); unless the upset is approved by the Executive Director, BCTS.
   a. If applications for a timber sale license are invited but none are received, the timber sales manager may request a new upset with the purpose to **re-advertise** the timber sale license. The new upset must be greater than or equal to the VCU; unless the upset is approved by the Executive Director, BCTS.
   b. Where the timber sale is scale-based for billing, the total upset and bonus applies to coniferous sawlog grades (grades 1 and 2).
   c. Where the timber sale is cruise-based for billing, the total upset and bonus applies to the Total Net Cruise Volume.
2. For **decked timber or partially harvested timber sales**, the upset is the rate or value requested by the timber sales manager.
   a. Where the timber sale is scale-based for billing, the total upset and bonus applies to coniferous sawlog grades (grades 1 and 2).
   b. If the timber sales manager intends to sell the timber competitively as a lump sum,
      i. the volume used to determine the upset value must be determined by an authorised scaler using a method approved by the minister, and

ii. the total upset and bonus applies to the entire volume of decked or partially harvested timber.

3. For **salvage timber sales** (see section 6.4.3 or 6.4.4), the upset is the rate calculated under that section multiplied by the discount factor 0.30.
   a. For cruise-based salvage timber sales, the total upset and bonus applies to the total net merchantable volume.
   b. For blanket salvage timber sales, the total upset and bonus applies to coniferous sawlog grades (grades 1 and 2).
4. For **deciduous timber sales**, where the Total Net Deciduous Volume to be harvested is equal to or greater than sixty percent of the Total Net Cruise Volume, the upset for coniferous and deciduous timber is the upset determined under subsection (1) or (1)(a).
   a. Where the timber sale is scale-based for billing, the total upset and bonus applies to coniferous and **deciduous sawlogs** (grades 1 and 2).
   b. Where the timber sale is cruise-based for billing, the total upset and bonus applies to the Total Net Cruise Volume.
5. For **post-harvest material timber sales**, issued for the specific purpose of manufacturing special forest products, the upset rate is the special forest product reserve stumpage rate from Table 6-7.
   a. The total upset and bonus applies to the total scaled product volume.

5.2 Stumpage Rate Determination for a non-BCTS, Fully Appraised Cutting Authority

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 3.4 and the tenure obligation adjustment (TOA) calculated under section 4.8.

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 (Silviculture, Development, Administration)

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.
4. 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. Stumpage rates prescribed in Tables 6-1, 6-2, 6-4, 6-4a and 6-5 are published monthly on the Timber Pricing Branch website and are an integral part of the manual.

   https://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/interior-timber-pricing

2. Each of the following forest zones referred to in Tables 6-1, 6-2, 6-4, 6-4a, 6-5 and 6-6 is made up of the following forest districts and or geographic units:

North Central Zone	-	Mackenzie, Nadina, Prince George (less Robson Valley TSA), Quesnel and Stuart Nechako
North East Zone	-	Peace
North Fort Nelson Zone	-	Fort Nelson
North West Zone	-	Coast Mountain (excluding that portion that lies geographically within the North Coast Timber Supply Area), Skeena Stikine
South Central Zone	-	Williams Lake TSA Blocks A, B, C, D, E & I
South East Zone	-	Okanagan Shuswap, Rocky Mountain, Selkirk, and Thompson Rivers (plus Robson Valley TSA)
South West Zone	-	100 Mile House, Cascades, and Williams Lake TSA Blocks F, G, H, and J to N

3. The following species abbreviations referred to in Tables 6-1, 6-2, 6-4, 6-4a and 6-5 are as follows:

BA	- Balsam	LO	- Lodgepole pine
CE	- Western redcedar	SP	- Spruce
FI	- Interior Douglas-fir	WH	- White pine
HE	- Hemlock	YE	- Yellow pine
LA	- Larch	AVG	- Average of all species

4. Where a species of coniferous timber is not listed in Table 6-1, 6-2, 6-4, 6-4a and 6-5, the average rate for the zone (AVG) must be used for that species of timber.

6.1.1 Calculation of the Coniferous Average Sawlog Stumpage Rates

1. The average rates in Table 6-1 are calculated as follows:
   a. For each Forest Zone, by species

$$\text{Average Rate} = \frac{\sum \text{Total Value (\$)}}{\sum \text{Total Volume (m3)}}$$

   Where:

   Total Value = appraised sawlog rate x appraised species volume

   Total Volume = appraised species volume

   b. An average all species rate for each Forest Zone is calculated the same as in (a).

   c. If the total species volume in (a) is less than 20,000m^3 the average all species rate for the Forest Zone in (b) is used.

   d. Average Rates for North Fort Nelson = 82% of North East Zone rates.

2. For the purposes of the calculation in (1) above:
   a. Timber Pricing Branch will create a dataset of fully appraised adjustable stumpage rate appraisals in confirmed status from GAS at 4:00 pm Pacific Time, on the business day that is 5 business days before the end of each month.

   b. The dataset will include all rates effective within the last six-month period (inclusive of the effective month of the average rates) and exclude:

      i. Cruise-based appraisals.

      ii. In the case of timber marks with multiple rates available in a month, all but the latest rate.

3. If there is insufficient data, the rates may be determined using an alternate method approved by the Director. The data may be deemed to be insufficient where a rate produced under (1) is inconsistent or outside historical norms in relation to the other calculated rates.

6.1.2 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. Table 6-2 rates are 15% of the stumpage rates from Table 6-1.

2. Section 1.4.2, sections 6.1.3 through 6.5, commercial thinning in section 6.6, 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 adjusted monthly in accordance with this section.

4. Notwithstanding subsection (1), (2), and (3), when a cutting authority is issued for the specific purpose to include projects funded by the Forest Enhancement Society of BC, the stumpage rate must be determined through a full appraisal ("fully appraised"). Refer to section 6.11 for details regarding cutting authorities with FESBC funding.

6.1.3 Woodlot Licences

1. Except as provided in subsection (2) and (8) 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. Table 6-2 rates are 15% of the stumpage rates from Table 6-1.
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 adjusted monthly in accordance with this section.
7. Except as provided in subsections (2) and (4) of this section, sections 1.4.2, 6.1.2, 6.1.4 through 6.5, commercial thinning and Pre-harvest Waste Assessment in section 6.6, and sections 6.7 through 6.9 do not apply to Woodlot Licence cutting authorities.
8. Notwithstanding subsection (1) through (7), when a cutting authority is issued for the specific purpose to include projects funded by the Forest Enhancement Society of BC, the stumpage rate must be determined through a full appraisal ("fully appraised"). Refer to section 6.11 for details regarding cutting authorities with FESBC funding.

6.1.4 Incidental Conifer in Deciduous Leading Stands

1. Except as provided in section 5.1.1(4), 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 rates for coniferous timber are the rates prescribed in Table 6-1 for the forest zone 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 adjusted monthly 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.

c. 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 allowable annual 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 average basic silviculture cost[1] in the applicable forest zone, 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.
   b. The stumpage rate will be adjusted monthly in accordance with this section.
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.
   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

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

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 metre to prepare the timber for sale as calculated by the district manager.

5. Except for a minster directed reappraisal (as provided in section 2.2.4), where the cutting authority is competitively awarded under this section, the total stumpage is fixed for the term 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 adjusted monthly.

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 as prescribed under section 4 of the Licence to Cut Regulation.

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 and fixed for the term and all extensions.

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 value must be the value 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 to be harvested in the cutting authority area is damaged timber as defined in section 6.4.1(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 successful 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 for a minister directed reappraisal (as provided in section 2.2.4), when the cutting authority is competitively awarded under this section or awarded in conjunction with a competitively awarded contract, the total stumpage rate is fixed for the term and all extensions. When the cutting authority is awarded without competition, the stumpage rate will be adjusted monthly.

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 6.1.2, Woodlots Licences in section 6.1.3 except 6.1.3(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 (6), must be adjusted semi-annually on May 1st and November 1st in accordance with this section.

4. Except as provided in subsection (6)(b), stumpage rates determined under this section are scale based for billing.

5. Except as provided in subsection (6) of this section, the stumpage rate for a road permit must be the stumpage rate:

   a. from the table of licence average rates by district provided to the regional Area by Timber Pricing Branch, or

   b. where a rate under (a) is not available, the average stumpage rate is that prescribed in Table 6-1 for the forest zone in which the entire cutting authority area for the tenure is located.

6. 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.

7. 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.

8. The bonus bid if applicable will be added to the stumpage rate determined under subsection 5(b).

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 defined as:
   a. wooden culverts and bridges, or
   b. post logging residue.
3. Damaged Timber is defined as:
   a. Trees that are dead or damaged as a result of wind, fire, snow press, drought, landslide, flooding; or
   b. Trees as a result of the effects of forest pests or disease that are dead; or
   c. Trees that require management and control of insect infestation or will die within one year (sanitation timber salvage), as determined by the district manager.
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. Cut block(s) must be less than or equal to 5 hectares in size; (unless the silviculture system used on the cut block is other than clear cutting, and at the completion of harvest the trees retained on the harvested area conform to the specifications in the Chief Forester's Reference Guide for Forest Development Plan Stocking Standards for the applicable silviculture system).
   d. 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.
   e. 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.
   f. Salvage cannot occur on a road right-of-way which has an active timber mark associated with it.
   g. Except for a minister directed reappraisal (as provided in section 2.2.4), a stumpage rate determined under this section is adjusted monthly in accordance with this section.

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

   i. estimated total net coniferous volume of timber on each cutblock is comprised of 80% or more Burnt Timber[1] (Burnt timber means any trees that meet the definition of Fire Codes A, B or C as per the Cruising Manual), and

   ii. the burnt timber is evenly distributed throughout the cutblock(s).

   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.

   c. Notwithstanding paragraph (a), the stumpage rate for Damaged Timber may be determined through a full appraisal in accordance with chapters 1, 2, 3, 4 and 5.

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.

7. Rates published in Table 6-4, 6-4a and 6-5 are factors of Table 6-1. Rates for each species of coniferous timber will be the factor found in Table 6-3 multiplied by the rate for that species in Table 6-1 for the forest zone in which the cutting authority area is located.

Table 6-3: Coniferous Average Sawlog Stumpage Rate Adjustment Factors for Salvage Timber

Table	BA	CE	FI	HE	LA	LO	SP	WH	YE	AVG
6-4	0.603	0.559	0.582	0.466	0.521	0.557	0.622	0.535	0.587	0.593
6-4a	0.423	0.477	0.582	0.386	0.453	0.462	0.466	0.443	0.512	0.473
6-5	0.250	0.800	0.500	0.250	0.500	0.500	0.500	0.500	0.500	0.480

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 6.1.2, Woodlots Licences in section 6.1.3, BCTS or any timber in the Research Forests noted in Table 6-7.

2. Cutblocks amended into blanket salvage cutting authorities prior to February 15, 2016, must use section 6.4.2 of this manual as it was prior to February 15, 2016.

3. Cutblocks amended into blanket salvage cutting authorities on or after February 15, 2016 must be consistent with the Deputy Minister Memo: *Harvesting under a Blanket Salvage Permit (For Interior Regions)* signed January 29, 2016, where the cutblocks must be:

   a. less than or equal to 15 hectares in size and 5000 m^3 in volume; (unless the silviculture system used on the cut block is other than clear cutting, and at the completion of

[1] Eighty (80) percent or more of the estimated total net coniferous volume defined as burnt timber 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.

harvest the trees retained on the harvested area conform to the stocking standards specified in an approved Forest Stewardship Plan); and

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

c. consistent with *District Guidelines for Blanket Salvage Cutting Authorities*.

4. 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 or 6-4a for the forest zone in which the cutting authority area is located. The stumpage rates in Table 6-4a may be used when the:

   a. estimated total net coniferous volume of timber on each cutblock is comprised of 80% or more Burnt Timber[1] (Burnt Timber means any trees that meet the definition of Fire Codes A, B or C as per the Cruising Manual), and

   b. the burnt timber is evenly distributed throughout the cutblock(s).

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

6. A stumpage rate determined under this section must be adjusted monthly in accordance with this section.

7. The bonus bid if applicable will be added to the stumpage rate determined under subsection 4.

6.4.3 Cruise Based Salvage Cutting Authorities

1. This section may apply to cutting authorities issued before January 1, 2024 and under a Timber Sale Licence or issued under licences with an allowable annual cut or maximum harvest volume; excluding Community Forest Agreements in section 6.1.2, Woodlots Licences in section 6.1.3, 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[2]; 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:

[1] Eighty (80) percent or more of the estimated total net coniferous volume defined as burnt timber in each cutblock, based on as 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.

[2] 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.

a. Stumpage rate

= BASE RATE - [2.166 * (CYCLE + (0.5 * CYCLE_INC6)) + 7.325 * ZONE 9 + (0.2064 * ISOLATED * (DISTANCE – 200)] * CPIF - [SO's * (CPI/ACPI)/(1-LG)]

Where:

BASE RATE	=	Rate indicated in Table 6-6 for the Forest Zone in which the cutting authority is located.
CYCLE	=	as defined and measured in accordance with section 3.2.12.
CYCLE_INC6, ZONE 9, ISOLATED, DISTANCE, CPI and CPIF	=	as defined in section 3.2
SO's	=	the sum of the transportation specified operations that apply to the transportation route from section 3.3.
LG	=	as defined in section 3.4
ACPI	=	as defined in section 3.4; or

b. The prescribed minimum stumpage rate.

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

FOREST ZONE	BASE RATE**($/m^3)	TSL BASE RATE***($/m^3)
North Central	13.39	46.18
North East	13.39	46.18
North Fort Nelson	13.39	46.18
North West	13.39	46.18
South Central	13.39	46.18
South East	13.39	46.18
South West	13.39	46.18

* Rate prior to adjustments for transportation, isolated 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 the 1st day of the month following the month in which this section is updated with a new cruise-based salvage equation. As per section 5.1(5), this does not apply to cutting authorities entered into under a Timber Sale Licence.

6.4.4 BCTS Salvage Timber Sale Licence

1. This section may apply to cutting authorities entered into under a Timber Sale Licence.
2. Cutblocks must be consistent with the requirements in subsection 6.4.2 (3) for blanket salvage cutting authorities.
3. The BCTS salvage upset rate (section 5.1.1(3)) is the average stumpage rate, weighted by the estimated volume of each species in the cutting authority, indicated in Table 6-4 for the forest zone in which the cutting authority area is located. The stumpage rates in Table 6-4a may be used when the:
   a. estimated total net coniferous volume of timber on each cutblock is comprised of 80% or more Burnt Timber[1] (Burnt timber means any trees that meet the definition of Fire Codes A, B or C as per the Cruising Manual), and
   b. the burnt timber is evenly distributed throughout the cutblock(s).
4. All BCTS salvage timber sale licences are scale based for billing.
5. A stumpage rate determined under this section is fixed for the term and all extensions.

[1] Eighty (80) percent or more of the estimated total net coniferous volume defined as burnt timber 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.

6.5 Decked and Partially Harvested Timber for a non-BCTS Cutting Authority

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 awarded 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 award 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 cutting authority is competitively awarded under this section, or when subsections 2(a) or 3(a) are used to calculate the stumpage rate, the total stumpage rate is fixed for the term and all extensions. When the cutting authority is awarded without competition, the stumpage rate will be adjusted monthly.

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

1. Unless otherwise specified in this manual, the stumpage rates in Table 6-7 apply to scale-based cutting authorities issued for the product or purpose described.
2. Special Forest Product (SFP) Codes are described in the Special Forest Products Regulation under the Act.
3. For SFP codes CH and HF, where the post-harvest material is removed under a tenure different from the original cruise based cutting authority.

Table 6 7: Miscellaneous Stumpage Rates

Species	SFP Code	Product		Reserve Stumpage Rate
All Species	SB	Shake & Shingle Bolts, Blocks and Blanks		$5.30/m^3
All Species	SK	Shakes		$6.00/m^3
Cedar	PR	Posts & Rails (Split and Round)		$3.00/m^3
All other Species	PR	Posts & Rails (Split and Round)		$1.20/m^3
All Species	MT	Mining Timbers		$3.00/m^3
All Species	FW	Firewood		$0.50/m^3
Yew		All		$0.25/m^3
All Species	CH	Wood chips from post-harvest material where a waste assessment has been made		$0.25/m^3
All Species	HF	Hogged tree material from post-harvest material where a waste assessment has been made		$0.25/m^3
All Species		Grades 4 and 6, except where the upset stumpage rate is determined under section 6.2.1(1)(a) and (b) and 5.1.1(4)		$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(4)		$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	CA	Cants (produced from dead and down post-logging residue)		$3.00/m^3
All Species		Logs salvaged below the high-water levels of Reservoir Lakes and the Shuswap, Slocan, Kootenay, Mineral, and Babine Lakes		$0.25/m^3
All Species		Marine Beachcomb		$0.70/m^3

Species	SFP Code	Product	Reserve Stumpage Rate
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 (Grade code Z)	NIL
All Coniferous		Effective September 1, 2021 - commercial thinning applies to even-aged forest stands as an intermediate harvest in the context of a broader stand management regime, where: • Stand age is 45 years or younger, • Approved Forest Stewardship Plan stocking standards for commercial thinning are consistent with the guiding principles of the current version of the *Interim Guidance for Commercial Thinning - Interior British Columbia,* and • Harvest operations are consistent with the current version of the *Interim Guidance for Commercial Thinning - Interior British Columbia*.	$0.25/$m^3$

6.7 Specific Licences to Cut

1. This section applies to:
   a. Cutting Authorities issued under Master licences to cut.
   b. Occupant licences to cut.
   c. Forestry licences to cut issued under section 47.6(3) of the Act in conjunction with an activity funded out of the BCTS account.
   d. Forestry licences to cut issued in conjunction with a works contract other than BCTS or 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 the purpose described in section 6.7.1 with less than 10 hectares of area
   b. The proposed Site C reservoir and dam site.
   c. Cutting authorities issued within a Controlled Recreational Area.
3. Unless otherwise directed by the Minister under section 2.2.4, the stumpage rate for any tenure listed in subsection (1) must be the stumpage rate prescribed in Table 6-1 plus the average silviculture add on cost for the forest zone in which the entire cutting authority area for the tenure is located.
4. 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.
5. Except as provided under paragraph (6) of this section, the stumpage rate determined under this section will be adjusted monthly.
6. 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.
7. The stumpage rate determined under this section for a forestry licence to cut issued under section 47.6(3) will use the stumpage rate prescribed in Table 6-1 at the time the activity funded out of the BCTS account is posted to BC Bid.

6.7.1 Area-Based Stumpage Rates

1. This section applies to new Crown land area disturbed for mining activities, Oil and Gas activities and related activities as defined in the *Energy Resource Activities Act,* or authorizations for investigative purposes issued under the *Land Act*.
2. a. Cutting authorities issued for the purposes listed in section 1 with less than 10 hectares of area must use the stumpage rate in Table 6-8 of the Forest District in which it is geographically located.

Table 6-8: Area-Based Reserve Stumpage Rates by District

Forest District	Reserve Stumpage Rate ($/hectare)
100 Mile House	1,392
Cariboo Chilcotin	890
Cascades	1,669
Coast Mountains	661
Ft. Nelson	1,407
Mackenzie	707
Nadina	799
Okanagan Shuswap	1,836
Peace	773
Prince George	1,397
Quesnel	891
Rocky Mountain	1,738
Selkirk	1,859
Skeena-Stikine	1,225
Stuart Nechako	828
Thompson Rivers	1,490

3. For seismic lines, the corresponding district reserve stumpage rate from Table 6-8 is adjusted according to the category of line clearing as follows.

   a. Category 1 (any line section over 100 metres in length and over 4.25 metres in width) - no adjustment.

   b. Category 2 (any line section over 100 metres in length and between 3.0 metres and 4.25 metres in width) - 1/2 of the reserve stumpage rate.

   c. Category 3 (any line section over 100 metres in length and less than 3.0 metres in width) - 1/3 of the reserve stumpage rate.

   All clearing activity 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.

4. The gross area for each new seismic line category reported on the British Columbia Energy Regulator's Geophysical Final Plan cover sheet or an As-Cleared Plan is multiplied by the reserve stumpage rate determine in subsection (3).

5. The stumpage rate determined under this section 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 *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 between June 1, 2010 and December 31, 2023 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 from the appraisal summary report, or,
   b. Under a timber sale licence with a fixed stumpage rate, which meets the criteria in paragraph (1)(a) (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
   c. Under a cutting authority that meets the criteria of section 6.4.3.
2. Except as provided in subsections (3) of this section, and section 5.1.1 (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) and (5) of this section, if, after an insect damage reappraisal under section 2.2.5 of this manual for a cutting authority issued or entered into between June 1, 2010 and December 31, 2023:
   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 from the appraisal summary report, and
   b. timber harvesting has not yet started on the cutting authority area, the stumpage payable may be cruise based.
4. Where an occupant licence to cut has been issued for the purposes of removing timber for agriculture, the stumpage payable must be scale based.
5. Where a non-replaceable forest licence (NRFL) or a forestry licence-to-cut (FLTC) was advertised on the basis of competition, and the successful bidder's bonus bid only applied to the sawlog portion of the volume advertised, the stumpage payable for cutting permits issued under these licences must remain scale based.

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

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

   b. The stumpage payable is cruise based,

   The bonus bid must be prorated by the person who determines the stumpage rate using Tables 4-8 of this manual as per section 4.8.

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.

6.11 Forest Enhancement Society of BC (FESBC)

1. Notwithstanding any other section of this chapter, a cutting authority, other than an FLTC (less than 2,000m^3) issued with projects funded by the FESBC for the purpose of stand restoration and/or rehabilitation must have the stumpage rate determined by a full appraisal ("fully appraised") in accordance with chapters 1, 2, 3, 4 and 5. Stand restoration and/or rehabilitation means the harvesting and reforestation of uneconomic stands of timber.
2. The person determining the stumpage rate must ensure all project costs incurred for development, harvesting, transportation or other tenure obligations costs funded by FESBC are excluded (or "backed out") from the appraisal.
3. The licensee representative must submit a detailed list of the projects and cost estimates approved for funding.
4. Development project costs used in the FESBC economic test (to assess FESBC funding eligibility) for a cutting authority are not eligible for amortization agreements and cannot be used by the licensee in an appraisal for another cutting authority.

Appendices

Appendix I Equipment and Labour Rates

Equipment Rates

[1,2]EQUIPMENT DESCRIPTION	BLUE BOOK SECTION	[6]BLUE BOOK (CLASS)	[7]BLUE BOOK MODELS	$/HOUR
Drilling Equipment - Rock Drill	1.4		750 cfm compressor or Equivalent Tank Drill Outfit (2 operators included)	334.22
[1]Excavator – Heavy Hydraulic	7.3	Class 4 45,000 – 50,999lbs	**Case** CX210B/C/D; **Cat** 320, 320F / FL / GC, 323FL; 325; **Deere** 210G-LC; **Kobelco** SK210LC, SK210LC-10; **Komatsu** HB215LC-1, PC200LC-8, PC210LC-10 / LCi-10; **Link-Belt** 210-X4	203.61
[1]Excavator – Heavy Hydraulic	7.3	Class 5 51,000 – 58,999lbs	**Case** CX250C, CX250D; **Cat** 323, 325F, 325F L, 326; **Deere** 245G; 250G-LC; Doosan DX225LC**-5, DX235LCR-5, DX255LC-5 Hitachi** ZX245USLC-5 / 6; **Kobelco** SK230SRLC-5, SK260LC-10; **Komatsu** PC210LC-11 / LCi-11, PC228USLC-10, PC240LC-10/11; **Link-Belt** 210X4LF, 225, 225 MSR, 250-X4; **Volvo** EC235E L, EC250E, ECR235E	210.32
[1]Excavator – Heavy Hydraulic	7.3	Class 6 59,000 – 67,999lbs	**Case** CX300D; **Cat** 326 F/F L, 330 GC; **Deere** 290G-LC; **Kobelco** SK270SRLC-5; **Komatsu** PC270LC-8; PC290LC-10; **Link-Belt** 300-X4;**Volvo** EC250ELC	234.47
[1]Excavator – Heavy Hydraulic	7.3	Class 7 68,000 – 87,999lbs	**Case** CX350D; **Cat** 330, 330FL, 335, 335FL, 336, 336 GC, 336 FL, 336FL XE; **Deere** 300GLC, 345GLC, 350G-LC, 380GLC; Doosan DX300LC-5, DX350LC-5; **Kobelco** SK300LC-10, SK350LC- 10; **Komatsu** PC290LC-11, PC308USLC-3, PC360LC-/11, PC390LC-10; **Link-Belt** 250X4LF, 350X4; **Volvo** EC350EL, EC380E, ECR305CL, ECR355E/EL	281.33
[1]Excavator – Heavy Hydraulic	7.3	Class 8 88,000 – 95,999lbs	**Doosan** DX420LC-5**; Komatsu** PC390LC-11; **Link-Belt** 350X4LF	298.32
[1]Excavator – Heavy Hydraulic	7.3	Class 9 96,000 – 102,999 lbs	**Cat** 345CL, 345DL; **Komatsu** PC400LC-7/7EO, PC400LC- 8/-8 VG, PC450LC-8; **Link-Belt** 460LX; **Volvo** EC460BLC ***Uses 2007-2012 Model Years**	*326.59
[1]Excavator – Wheel	7.2	Class 7 70,000+ lbs	**Cat** M316F	269.89
Hydraulic Hammer Attachment	7.4 B	9000 ft-lbs – 9600 ft-lbs		155.70
Hydraulic Hammer Attachment	7.4 B	10,000 ft-lbs – 10,600 ft-lbs		171.35
Hydraulic Hammer Attachment	7.4 B	11,000 ft-lbs – 11,600 ft-lbs		186.75
[4] Forestry – Feller Buncher – Tilters – Zero Tail Swing	17.2	Class 2 60,000 – 79,000 lbs (230 – 300 hp)	**Cat** 522B; **Eltec** FB227L**; Komatsu** XT430L-3, XT445L-3, XT460L-3; **Tigercat** LX830C; **TimberPro** TL-725D, TL-735D, TL-745D	248.25
[4] Forestry – Feller Buncher – Tilters – Zero Tail Swing	17.2	Class 3 Over 79,000 lbs (Over 300 hp)	**Tigercat** LX830D; **Weiler** B458	259.75

[4] Forestry – Feller Buncher – Tilters – Tail Swing	17.2	Class 2 75,000 – 90,000 lbs (260 – 300 hp)	**Cat** 532, 552, 552-II; **Deere** 909M/MH, 953M, 959M/K; **Eltec** FB227L; **Tigercat** LX855E, LX870D;	262.90
[4] Forestry – Feller Buncher – Tilters – Tail Swing	17.2	Class 3 90,000 – 100,000 lbs (300+ hp)	**Eltec** FB317L**; Tigercat** L855E;	273.80
[4] Forestry – Feller Buncher – Flat Bottom – Zero Tail Swing	17.2	Class 2 52,000 – 58,000 lbs (205 – 260 hp)	**Cat** 521B; **Deere** 753J, 843L; **Eltec** FB226L, FB227L**; Komatsu** XT430-3L; **Tigercat** LX822D; **TimberPro** TL-725D, TL-735D	227.70
[4] Forestry – Feller Buncher – Flat Bottom – Zero Tail Swing	17.2	Class 3 66,000 lbs (253 hp)	**Tigercat** 822C, 845D; **Weiler** B457	233.25
[4] Forestry – Feller Buncher – Flat Bottom – Tail Swing	17.2	Class 1 55,000 – 66,000 lbs (230 – 275 hp)	**Tigercat** 845C, 845E, 855E	230.45
[4] Forestry – Feller Buncher – Flat Bottom – Tail Swing	17.2	Class 2 70,000 – 86,000 lbs (230 – 300 hp)	**Cat** 541-II; **Eltec** FB277, FB317; **Tigercat** 860D, 870D, X860D, X870D	249.05
[2,3] Forestry– Excavator	17.4	Class 1 35,000 – 45,000lbs (105-110 hp)	**Deere** 160G, 180G; **Hyundai** HX140, HX145, HX160; **Kobelco** ED160-5; **Link-Belt** 160-X4; **Volvo** EC140EL, EC160EL, ECR145EL	190.60
[2,3] Forestry– Excavator	17.4	Class 2 48,500 – 58,000lbs (125-150 hp)	**Case** CX210D, CX250D; **Deere** 210G-LC; **Hyundai** HX180L, HX220L, HX235L; **Kobelco** SK210LC- 10; **Link-Belt** 210-X4, 250-X4; **Volvo** EC220EL	208.95
[2,3] Forestry– Excavator	17.4	Class 3 55,000 – 72,000lbs (140-175 hp)	**Case** CX300D; **Cat** 320D, 538, 538LL; **Deere** 250G; **Hyundai** HX260; **Kobelco** SK230-SRLT5, SK260, SK270; **Link-Belt** 300-X4; **Volvo** EC250ELC, EC300ELC, EC235EL	233.90
[2,3] Forestry– Excavator	17.4	Class 4 76,000 lbs (188hp)	**Kobelco** SK300LC-10	252.45
[2,3] Forestry– Excavator	17.4	Class 5 60,000 – 86,000lbs (240 hp)	**Case** CX350D; **Cat 325D FM,** 548, 548LL 558; **Deere** 350G, 3754-D; Hyundai HX330; **Kobelco** SK350LC-10; **Link-Bel**t 350-X4, 3740 TLN; **Tigercat** 875, LS855D; **Volvo** EC350EL, ECR355EL	284.35
[2]Forestry – Excavator – Road Builders	17.5	Class 1 56,900 lbs (128hp)	**Kobelco** SK210LC	217.35
[2]Forestry – Excavator – Road Builders	17.5	Class 2 58,000 – 73,000lbs (140-153 hp)	**Case** 3240**; Cat** 320D FM; **Hyundai** HX220, HX2200; **Kobelco** SK260LL-10; **Komatsu** PC210LL-10; **Link-Belt;** 3240RBN; **Volvo** EC250E FC	242.90
[2]Forestry – Excavator – Road Builders	17.5	Class 3 72,000 – 80,000lbs (158-180 hp)	**Case** CX250; **Hyundai** HX300, HX3030; **Kobelco** ZX290F- 3; **Link-Belt** 3740RBN, **Volvo** EC300E FC	263.50
[2]Forestry – Excavator – Road Builders	17.5	Class 4 81,500 – 94,000lbs (220-250 hp)	**Case** CX300, CX350; **Cat** 3250 FM; **Deere** 3754-D; **Hyundai** HX330, HX3300; **Komatsu** PC240LL-10; **Link-Belt** 4040RBN, 4640RBN, 5040RBN	296.15
Grader	8.1	Class 6 200-249 FWHP (149-186 KW)	**Case** 865, 865B**; Cat** 140K, 140M VHP+, 150, 150 AWD, 160 AWD,160K; **Deere** 670G, 622G, 770G, 772G; **Komatsu** GD655-6	188.35
Lifting Equipment - Crane	9.2	20 tons (18 tonnes)		158.65

Loader - Front End 4X4 (Gravel)	10.2	Class 10 5 cu yd (3.82m^3)	**Caterpillar** 966M, 996M XE; **Deere** 744lL; **Hitachi** ZW310-5B; **Volvo** L120H2	234.40
Loader – Front End 4X4 (Logs)	10.2	Class 12 6 cu yd (4.59m^3)	**Case** 1121F; **Cat** 972M, 972M XE; **Deere** 824K, 824L; Doosan DL450-3; DL450-5; **Volvo** L180H, L180H2	244.50
[5]Skidder – Grapple, Rubber Tired	17.1	Class 1 21,000 – 28,000lbs (104-152 hp)	***Cat** 515, 518C;***Clark/Ranger** 666-C, 666-D, F-66, F-66-D, H-66-G;***Deere** 540, 548-D/E/G/GII/GIII; ***TimberJack** 360-D, 380 A/B/C *** 2007 & older model years**	*133.90
Skidder + Towed Roller – Vibratory Steel Wheel	17.1 & 13.6	3-4 tons (2.7-3.6 tonne)	Section 17.1 Class 1 Skidder (2007 & Older) + Towed Vibratory Steel Wheel, 3-4 tons (2.7-3.6 tonnes)	152.35
Skidder + Towed Roller – Grid	17.1 & 13.5	32 in. diameter (813mm) 2 drum	Section 17.1 Class 1 Skidder (2007 & Older) + Towed Grid Roller, 2 Drums, 32-inch (813mm) diameter	153.45
Tractor – Crawler	15.2	Class 3 85-129.9 FWHP	**Case** 750M, 850M, 1150M; **Cat** D4K2 XL, D6K2 XL-T4; **Deere** 550K, 650K; **Dressta/Dresser** TD8S, TD9S	184.60
Tractor - Crawler	15.2	Class 4 130-189.9 FWHP	**Cat** D5, D6N-T4; **Deere** 700K, 700L, 750K, 750L	236.10
Tractor - Crawler	15.2	Class 5 190-259.9 FWHP	**Case** 2050M; **Cat** D6, D6 XE, D6T, D6T-T4; **Deere** 850K,850L; **Dressta** TD-15M Extra	245.25
Tractor - Crawler	15.2	Class 6 260-359.9 FWHP	**Cat** D7, D8T, D8T-T4; **Deere** 950K, 1050K; **Dressta** TD25R	312.65
Tractor - Crawler	15.2	Class 7 360-519.9 FWHP	**Cat** D9T, D9T-T4	422.70
Truck – Concrete Transit Mix	4.5	8 cu yd (6.1m^3)	Concrete Transit Mix Truck, 8cu yd (6.1m^3)	144.05
Truck – Standard S/A or Tandem Gravel Dump Truck	16.1	14 cu yd (10.7m^3)	Standard haul	150.35
Truck - Off Highway Heavy Duty Dump Truck – Articulated	16.8	**Class 2** 20-24 tonnes (22-26 tons)	**Bell** B25D, B25E**; Cat** 725C2, **Deere** 260E; **Terex** TA350, TA400; **Volvo** A25G	219.80
Truck - Off Highway Heavy Duty Dump Truck – Articulated	16.8	**Class 3** 25-29 tonnes (28-32 tons)	**Bell** B30E; **Cat** 730, 730 EJ, 730C EJ, 740 GC; 740B EJ; **Deere** 310E, Doosan/Moxy DA30; **Volvo** A30G	227.70
Truck – Logging (Highway)	16.2-C	6 axle unit 45,000 kg	6 Axle Logging Truck (Highway)	163.90
Truck – Log Self Loading	16.2-C & 16.3	6 axle unit 45,000kg GVW with 5-ton Crane	Truck – Logging (Highway) and 5-ton (4.5 tonnes) Deck Crane	180.40
Truck – Lowbed	16.2-C	5 axle unit	25 tonnes approx. max load, Tandem tractor and lowbed	159.04
Truck – Lowbed	16.2-C	7 axle unit	41 tonnes approx. max load, A or B train (or triple axle with booster)	190.68
Truck – Lowbed	16.2-C	8 axle unit	A or B train (or triple axle with booster)	214.11
Truck – Miscellaneous – Pilot Vehicle	16.2-A		Pilot Vehicle	79.95

Source: 2022-2023 B.C. Road Builders & Heavy Construction Association, Equipment Rental Rate Guide ("The Blue Book").

[1] includes 10% additional cost; 5% for brush guard package and 5% for hydraulic thumb.

[2] Excavators equipped with: Heavy Duty Undercarriage (Forestry – Excavator only) or Hi-Walker Undercarriage (Forestry – Excavator – Road Builders only), and includes Guarding Package, 2 Buckets, Hydraulic Thumb & Quick Attachment.
[3] Excavators equipped with: Forestry Processor – Add 30% to the Forestry Excavator Rate. Processor applies to eligible Engineered Cost Estimate sections not to harvesting operations.
[4] Feller Buncher applies to non-merchantable stems on an eligible Engineered Cost Estimate section.
[5] Skidder applies to non-merchantable stems on an eligible Engineered Cost Estimate section not to harvesting operations.

"All Found" includes all costs, expenses and profits necessary for the project work being undertaken, with an allowance for operator's wages plus benefits (except for some small equipment). 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.

[6]BLUE BOOK CATEGORY (CLASS) Classes as applicable provide:
-Capacity in cubic feet per minute, diameter, or tonnes (Drills, Rollers, Cranes)
-Capacity in yards/cubic meters: (Concrete Trucks, Gravel Dump Trucks and Loaders)
-Number of axles and/or gross vehicle weight in kilograms: (Logging Trucks and Lowbeds)
-Operating weight in pounds or tonnes: (Excavators, Skidders and Articulated Trucks)
-Power in flywheel horsepower: (Crawler Tractors and Graders)

[7]BLUE BOOK MODELS- Associated rates in $/hour are for Blue Book equipment models for years 2019 - 2022 unless only "out-of- date" model is available (pre-2018) in which case the rate in $/hr is for the relevant Blue Book equipment model for the specified year.

Miscellaneous Equipment Rates

EQUIPMENT DESCRIPTION	BLUE BOOK SECTION NUMBER	BLUE BOOK CATEGORY	*$/HOUR
Concrete Mixer	4.4	6 cu ft (0.17 m^3)	9.73
Concrete Vibrator	4.3	12' to 21' (3.65m – 6.10m)	6.42
Powersaw	11.1	Over 20+ inch blade; over 57cm^3	4.65

Source: 2020/2021 Blue Book. Labour not included.

Wage Rates

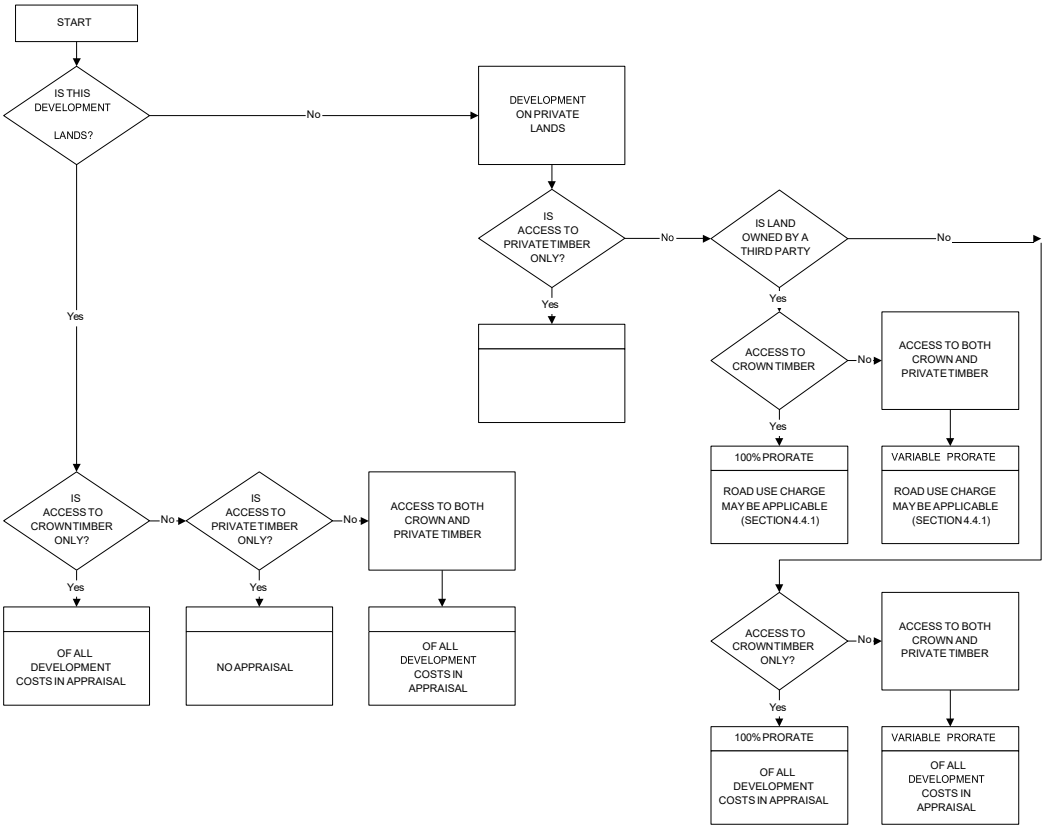
LABOUR DESCRIPTION	GROUP	*$/HOUR
Labourer	Group I	49.44
Roadman	Group II	49.83
Crib/Culvert Maker, Powderman	Group VII	52.31
Landingman	Group VIII	52.99
Rockdriller & Powderman (for load & blast only)	Group VII & XI	108.89
Bridgeman	Tradesman	66.79
Faller, including powersaw cost		92.10

Wage Rates Effective June 15, 2022. Includes 50% for payroll loading (Source: 2019-24 United Steelworkers Agreement Rates)

Engineered Cost Estimates

1. The labour and equipment rates in this appendix must be used for all engineering cost estimates made under section 4.3.6 of this manual.
2. Notwithstanding subsection (1), an engineered cost estimate may include:
   a. $186/day/vehicle for crew transportation if the crew transportation cost has not already been accounted for in the appraisal. Equipment 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 (i.e., licensee incurs or will incur the additional cost).
   b. $175/day/person for crew accommodation if those doing the work must stay in a camp (as defined in section 3.2.27) while working on the project, and if the camp cost has not already been accounted for in the appraisal.
   c. $8.83/hour for On-Road Equipment and $20.61/hour for Off-Road Equipment for fuel price adjustments may be added to the "All-Found" Equipment Rates in this Appendix.
3. Use of rates for equipment not listed in this appendix must be approved by the regional timber pricing co-ordinator.

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

	Relative Soil Moisture Regime Class (from field guide)							
BGC	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
BGxh1	XD	XD	XD	ED	VD/MD	SD/F	M	VM/W
BGxh2	XD	XD	ED	VD	MD	SD/F	M	VM/W
BGxh3	XD	XD	XD	ED	ED	VD/MD	SD/F	M/VM/W
BGxw1	XD	XD	ED	VD	VD/MD	SD/F	M/VM	W
BGxw2	XD	XD	ED	VD	MD/SD	F	M	VM/W
BWBSdk	VD	MD	MD	SD	F	M	VM	W
BWBSmk	VD	MD	MD	SD	F	M	VM	W
BWBSmw	VD	MD	MD	SD	F	M	VM	W
BWBSvk	VD	MD	SD	SD	F	M	VM	W
BWBSwk1	VD	MD	MD	SD	F	M	VM	W
BWBSwk2	VD	MD	MD	SD	F	M	VM	W
BWBSwk3	VD	MD	MD	SD	F	M	VM	W
CWHds1	ED	VD	MD	MD	SD/F	F	M/VM	W
CWHms1	VD	VD	MD	MD	SD/F	M	VM	W
CWHvm1	MD	MD	SD	F	M	M	VM	W
CWHvm2	MD	MD	SD	F	M	M	VM	W
CWHws1	VD	VD	MD	SD	F	M	VM	W
CWHws2	VD	MD	MD	SD	F	M	VM	W
ESSFdc1	VD	MD	MD	SD	F	M	VM	W
ESSFdc2	VD	MD	SD	F	F	M	VM	W
ESSFdc3	VD	MD	MD	SD	F	M	VM	W
ESSFdcw	VD	MD	MD	SD	F	M	VM	W
ESSFdh1	VD	MD	SD	F	F	M	VM	W
ESSFdh2	VD	VD	MD	SD	F	M	VM	W
ESSFdk1	VD	MD	MD	SD	F	M	VM	W
ESSFdk2	VD	MD	MD	SD	F	M	VM	W
ESSFdv1	VD	VD	MD	MD	SD/F	M	VM	W
ESSFdv2	VD	VD	MD	MD	SD/F	M	VM	W
ESSFmc	VD	MD	SD	SD	F	M	VM	W
ESSFmh	VD	MD	MD	SD	F	M	VM	W
ESSFmk	VD	MD	MD	SD	F	M	VM	W
ESSFmm1	VD	MD	MD	SD	F	M	VM	W
ESSFmm2	VD	MD	MD	SD	F	M	VM	W
ESSFmm3	MD	MD	SD	SD/F	F	M	VM	W
ESSFmv1	VD	VD	MD	SD	F	M	VM	W
ESSFmv2	VD	VD	MD	SD	F	M	VM	W
ESSFmv3	VD	VD	MD	SD	F	M	VM	W
ESSFmv4	VD	VD	MD	SD	F	M	VM	W

	Relative Soil Moisture Regime Class (from field guide)							
BGC	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
ESSFmw	VD	VD	MD	SD	F	M	VM	W
ESSFmw1	VD	MD	SD	F	F	M	VM	W
ESSFmw2	VD	VD	MD	SD	F	M	VM	W
ESSFvc	MD	SD	SD	F	M	M	VM	W
ESSFvcw	MD	SD	SD	F	M	VM	W	W
ESSFwc2	MD	MD	SD	F	M	M	VM	W
ESSFwc3	MD	MD	SD	F	M	M	VM	W
ESSFwc4	MD	MD	SD	F	M	M	VM	W
ESSFwcw	MD	SD	SD	F	M	VM	W	W
ESSFwh1	MD	MD	SD	F	F	M	VM	W
ESSFwh2	MD	MD	SD	SD/F	F	M	VM	W
ESSFwh3	MD	MD	SD	F	F	M	VM	W
ESSFwk1	MD	MD	SD	F	M	M	VM	W
ESSFwk2	MD	MD	SD	F	M	M	VM	W
ESSFwm1	MD	MD	SD	F	F	M	VM	W
ESSFwm2	MD	MD	SD	F	F	M	VM	W
ESSFwm3	MD	MD	SD	F	F	M	VM	W
ESSFwm4	MD	MD	MD	SD	F	M	VM	W
ESSFwmw	MD	SD	SD	F	M	M	W	W
ESSFwv	MD	MD	SD	SD	F	M	VM	W
ESSFxc1	VD	MD	MD	SD	F	M	VM	W
ESSFxc2	VD	MD	MD	SD	F	M	VM	W
ESSFxc3	VD	VD	VD	MD	SD/F	M	VM	W
ESSFxcw	VD	VD	MD	SD	SD/F	M	VM	W
ESSFxv1	VD	VD	VD	MD	SD/F	M	VM	W
ESSFxv2	VD	VD	VD	MD	SD/F	M	VM	W
ESSFxvw	VD	MD	MD	SD	F	M	VM	W
ICHdk	VD	VD	MD	MD	F	M	M/VM	VM
ICHdm	VD	VD	MD	SD	F	M	M/VM	VM
ICHdw1	ED	VD	MD	MD	SD	M	M	VM
ICHdw3	ED	VD	MD	MD	SD	M	M	VM
ICHdw4	ED	VD	MD	MD	SD	F	M	VM
ICHmc1	VD	MD	SD	SD	F	M	VM	W
ICHmc2	VD	MD	SD	SD	F	M	VM	W
ICHmk1	VD	VD	MD	SD	F	M/VM	VM	VM/W
ICHmk2	VD	MD	MD	SD	F	M	VM	VM/W
ICHmk3	VD	MD	MD	SD	F	M	VM	VM/W
ICHmk4	VD	VD	MD	SD	F	M	VM	W
ICHmk5	VD	VD	MD	SD	F	M	VM	W
ICHmm	VD	MD	MD	SD	F	M	VM	VM/W
ICHmw1	VD	MD	MD	SD	F	M	VM	VM/W

	Relative Soil Moisture Regime Class (from field guide)							
BGC	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
ICHmw2	VD	MD	MD	SD	F	M	VM	VM/W
ICHmw3	VD	MD	MD	SD	F	M	VM	VM/W
ICHmw4	VD	MD	MD	SD	F	M	VM	VM/W
ICHmw5	VD	VD	MD	SD	F	M	VM	VM/W
ICHvc	MD	SD	SD	F	M	M	VM	W
ICHvk1	MD	MD	SD	F	M	M	VM	W
ICHvk2	MD	SD	SD	F	M	M	VM	W
ICHwc	MD	MD	SD	F	F	M	VM	W
ICHwk1	VD	MD	SD	F	F	M	VM	W
ICHwk2	VD	MD	SD	F	F	M	VM	W
ICHwk3	VD	MD	SD	F	F	M	VM	W
ICHwk4	VD	MD	SD	F	F	M	VM	W
ICHxm1	ED	ED	VD	MD	MD	F	M	VM
ICHxw	ED	ED	VD	MD	SD	M	M	VM
IDFdc	ED	ED	VD	MD	MD	SD/F	M	VM/W
IDFdh	XD	XD	ED	VD	VD/MD	SD	F	VM/W
IDFdk1	ED	VD	VD	MD	SD	F	M/VM	W
IDFdk2	VD	VD	MD	MD	SD	F	M/VM	W
IDFdk3	ED	ED	VD	VD	MD	SD/F	M	VM
IDFdk4	ED	ED	VD	VD	MD	SD/F	M	VM
IDFdk5	ED	ED	VD	VD	MD	SD/F	M	VM
IDFdm1	XD	ED	VD	VD	MD	SD/F	F/M	VM
IDFdm2	ED	ED	ED	VD	MD	SD/F	M	VM
IDFdw	ED	ED	ED	VD	MD	SD/F	M	VM
IDFmw1	ED	ED	VD	MD	SD	F	M	VM
IDFmw2	ED	ED	VD	MD	SD	F	VM	W
IDFww	ED	ED	VD	MD	SD/F	M	VM	W
IDFww1	ED	ED	VD	MD	SD/F	M	VM	W
IDFxc	XD	ED	VD	VD	VD/MD	SD/F	M	VM/W
IDFxh1	XD	ED	VD	VD	MD	SD/F	M/VM	W
IDFxh2	XD	ED	VD	VD	VD/MD	SD/F	M/VM	W
IDFxk	XD	XD	ED	ED	VD	SD/F	M	VM/W
IDFxm	XD	ED	ED	VD	MD	SD/F	M	VM/W
IDFxw	XD	ED	ED	VD	VD/MD	SD/F	M	VM/W
IDFxx1	XD	XD	ED	ED	VD	MD/SD	F/M	VM/W
IDFxx2	XD	XD	ED	ED	VD	SD	M	VM/W
MHmm1	SD	SD	F	F	M	VM	W	W
MHmm2	SD	SD	F	F	M	VM	W	W
MHwh1	SD	SD	F	F	M	VM	W	W
MSdc1	VD	VD	MD	MD	SD/F	M	W	W
MSdc2	VD	VD	MD	MD	SD/F	M	VM	W

	Relative Soil Moisture Regime Class (from field guide)							
BGC	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
MSdc3	VD	VD	MD	MD	SD/F	M	VM	W
MSdk	VD	VD	MD	MD	SD	M	M	VM/W
MSdm1	VD	VD	MD	MD	SD	F	M	VM/W
MSdm2	VD	MD	MD	SD	SD	F/M	VM	W
MSdm3	VD	VD	MD	MD	SD/F	M	VM	W
MSdv	VD	VD	MD	MD	SD/F	M	VM	W
MSdw	VD	VD	MD	MD	SD	M	M	VM/W
MSxk1	VD	VD	MD	SD	F	M	VM	W
MSxk2	ED	VD	VD	MD	SD	F	M	VM/W
MSxk3	VD	VD	VD	MD	SD/F	M	VM	W
MSxv	VD	VD	VD	MD	SD/F	F	VM	W
PPxh1	XD	XD	ED	VD	MD	SD/F	M	VM/W
PPxh2	XD	XD	ED	VD	MD	SD/F	M	VM/W
SBPSdc	ED	ED	VD	MD	SD	F	M/VM	W
SBPSmc	VD	VD	VD	MD	SD	F	M/VM	W
SBPSmk	ED	VD	VD	MD	SD	F	M/VM	W
SBPSxc	ED	ED	VD	VD	MD	SD	M	W
SBSdh1	VD	MD	MD	SD	SD	F	M	W
SBSdh2	VD	MD	MD	SD	SD	F	M	W
SBSdk	VD	MD	MD	SD	SD	F	M/VM	W
SBSdw1	VD	MD	MD	SD	SD	F	M	W
SBSdw2	VD	MD	MD	SD	SD	F	M	W
SBSdw3	VD	MD	MD	SD	SD	F	M	W
SBSmc1	VD	MD	MD	SD	F	M	VM	W
SBSmc2	VD	MD	MD	SD	F	M	VM	W
SBSmc3	VD	MD	MD	SD	F	M	VM	W
SBSmh	VD	MD	MD	SD	SD	M	VM	W
SBSmk1	VD	MD	MD	SD	F	M	VM	W
SBSmk2	VD	MD	MD	SD	F	M	VM	W
SBSmm	VD	VD	MD	SD	SD/F	M	VM	W
SBSmw	VD	MD	MD	SD	F	M	VM	W
SBSvk	MD	SD	SD	F	M	M	VM	W
SBSwk1	VD	MD	SD	F	F	M	VM	W
SBSwk2	VD	MD	SD	F	F	M	VM	W
SBSwk3	VD	MD	SD	F	F	M	VM	W
SWBmk	MD	MD	SD	SD	F	M	VM	W
SWBmks	MD	MD	SD	SD	F	M	VM	W
SWBvk	MD	MD	SD	SD	F	M	VM	W
SWBvks	MD	MD	SD	SD	F	M	VM	W
ESSFdcw	VD	MD	MD	SD	F	M	VM	W
ESSFdkw	VD	MD	MD	SD	F	M	VM	W

	Relative Soil Moisture Regime Class (from field guide)							
BGC	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
ESSFdvw	VD	MD	MD	SD	F	M	VM	W
ESSFmmw	MD	MD	SD	F	M	M	VM	W
ESSFwmw	MD	SD	SD	F	M	M	W	W
ESSFxcw	VD	VD	MD	SD	SD/F	M	VM	W
ESSFxvw	VD	MD	MD	SD	F	M	VM	W
ESSFvcw	MD	SD	SD	F	M	VM	W	W

NOTES:

XD = Excessively Dry
ED = Extremely Dry
VD = Very Dry
MD = Moderately Dry
SD = Slightly Dry
F = Fresh
M = Moist
VM = Very Moist
W = Wet

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

Appendix IV Appraisal Map Content

1. An appraisal data submission must include a map (or maps) at a scale suitable for the information provided.
2. All maps must be in georeferenced PDF electronic format.
3. The following map information must be provided for in an appraisal or reappraisal data submission:
   a. Cutting authority boundaries.
   b. Delineation of leave tree 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 cost estimates (e.g. root disease control).
   f. Delineation of development projects with cost estimates that will be used in a future cutting authority.
   g. Delineation of the cutting authority area forming the polygon referred to in section 1.4.2; unless the distance between the furthest boundaries of the furthest cutblocks is less than 10 km.
   h. The geographic centre point of the cutting authority.
   i. The geographic centre point of each cutblock and common junction of the permit.
   j. Existing roads.
   k. 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).
   l. Location of roads/structures, borrow pits, gravel pits and rock quarries that are included in engineered cost estimates. Culverts less than 950 mm are excluded from this requirement.
   m. Location and type of other development such as remedial fencing, cattleguards and pipeline crossings.
   n. Map Scale indicated using a graphic bar scale.
4. Maps may include other information considered relevant to the appraisal data submission.

Appendix V Enhanced Silviculture Regimes

BEC Unit	Plan	Regime Name
ESSFdc2	Merritt ISS	Increased Planting Density
ESSFdcw	Merritt ISS	Increased Planting Density
ESSFmc	Bulkley ISS	Pli leading -1800 sph
		Sx leading
	Lakes TSA of Nadina District (FSP 651)	Enhanced planting density
	Prince George FSP#11	Increased Target Stocking
	WFM Morice FSP 660	Pli leading
		Sx leading
ESSFmk	WFM Morice FSP 660	Pli leading
		Sx leading
ESSFmv1	Lakes TSA of Nadina District (FSP 651)	Enhanced planting density
	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced planting density
ESSFmv3	Lakes TSA of Nadina District (FSP 651)	Enhanced planting density
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced planting density
	WFM Morice FSP 660	Sx leading
ESSFmw1	Merritt ISS	Increased Planting Density
ESSFwc3	Cariboo Regional Standard	Enhanced Density
ESSFwk1	Cariboo Regional Standard	Enhanced Density
	Prince George FSP#11	Increased Target Stocking
ESSFxc1	Merritt ISS	Increased Planting Density
ESSFxc2	Merritt ISS	Increased Planting Density
ICHmk3	Cariboo Regional Standard	Enhanced Diverse
ICHvk2	Prince George FSP#11	Increased Target Stocking
ICHwk2	Cariboo Regional Standard	Enhanced Diverse
ICHwk3	Prince George FSP#11	Increased Target Stocking
ICHwk4	Cariboo Regional Standard	Enhanced Diverse
IDFdk1	2017 Wildfire	Post-Wildfire Fdi
	Merritt ISS	Increased Planting Density
	Cariboo Regional Standard	Enhanced Density
IDFdk2	Merritt ISS	Increased Planting Density
IDFdk3	2017 Wildfire	Post-Wildfire Fdi
	Cariboo Regional Standard	Enhanced Density
IDFdk4	2017 Wildfire	Post-Wildfire Fdi
	Cariboo Regional Standard	Enhanced Density
IDFxh1	Merritt ISS	Increased Planting Density
IDFxh2	2017 Wildfire	Post-Wildfire Fdi
	Merritt ISS	Increased Planting Density

BEC Unit	Plan	Regime Name
IDFxm	2017 Wildfire	Post-Wildfire Fdi
	Cariboo Regional Standard	Enhanced Density
MSdm2	Merritt ISS	Increased Planting Density
MSxk1	Merritt ISS	Increased Planting Density
MSxk2	2017 Wildfire	Post-Wildfire Fdi
	Merritt ISS	Increased Planting Density
SBPSdc	Prince George FSP#11	Increased Target Stocking
SBPSmk	Cariboo Regional Standard	Enhanced Density
SBSdk	Bulkley ISS	Pli leading -1800 sph
	Lakes TSA of Nadina District (FSP 651)	Enhanced Density
	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced Density
	WFM Morice FSP 660	Pli leading
		Sx leading
SBSdw1	Cariboo Regional Standard	Enhanced Density
		Enhanced Diverse
SBSdw2	Cariboo Regional Standard	Enhanced Density
		Enhanced Diverse
	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced Density
SBSdw3	Lakes TSA of Nadina District (FSP 651)	Enhanced Density
	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced Density
SBSmc1	Cariboo Regional Standard	Enhanced Density
SBSmc2	Bulkley ISS	Pli leading -1800 sph
		Pli leading-2000 sph
		Sx leading
	Lakes TSA of Nadina District (FSP 651)	Enhanced Density
	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced Density
	WFM Morice FSP 660	Pli leading
		Sx leading
SBSmc3	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced Density
SBSmh	Prince George FSP#11	Increased Target Stocking
SBSmk1	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced Density

BEC Unit	Plan	Regime Name
SBSmw	Cariboo Regional Standard	Enhanced Density
		Enhanced Diverse
	Prince George FSP#11	Increased Target Stocking
SBSvk	Prince George FSP#11	Increased Target Stocking
SBSwk1	Cariboo Regional Standard	Enhanced Density
		Enhanced Diverse
	Prince George FSP#11	Increased Target Stocking
SBSwk3	Lakes TSA of Nadina District (FSP 651)	Enhanced Density
	Prince George FSP#11	Increased Target Stocking
	Stuart Nechako NRD portion of the Prince George TSA (FSP 999)	Enhanced Density

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	Centennial**
NORTH	Mackenzie	R	Williston Lake	Chowika
NORTH	Mackenzie	R	Williston Lake	Factor Ross
NORTH	Mackenzie	R	Williston Lake	Ingenika
NORTH	Mackenzie	R	Williston Lake	Manson**
NORTH	Mackenzie	R	Williston Lake	Mesilinka
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	Shuswap Lake	Lee Creek
SOUTH	Okanagan Shuswap	N	Shuswap Lake	2 Mile
SOUTH	Okanagan Shuswap	N	Shuswap Lake	Wilson Creek
SOUTH	Quesnel	N	Quesnel Lake	Beach Point
SOUTH	Quesnel	N	Quesnel Lake	Hunter's Point
SOUTH	Quesnel	N	Quesnel Lake	Service Creek
SOUTH	Quesnel	N	Quesnel Lake	Long Creek
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

**Log Barge Water Transportation System

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 ($):	
Licence and Cutting Authority	**Amount Apportioned ($)**
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 2016/07 Please be advised that this information may be released under the *Freedom of Information and Protection of Privacy Act*

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