Province of British Columbia
OFFICE OF THE MINISTER

Ministry of Forests

MEMORANDUM

File: 195-30/IAPP

August 30, 1999

To: Regional Managers

From: The Honourable David Zirnhelt
Minister of Forests

Re: Amendment to the *Interior Appraisal Manual*

I hereby approve Amendment No. 11 to the *Interior Appraisal Manual* and attach a copy for your use. The following section is amended:

Chapter 7	Revised variables and equations for Chapter 7, Market Pricing System.

This amendment will come into force on September 1, 1999. Further amendments or revisions to this manual require my approval.

David Zirnhelt
Minister

Attachments

pc: Bill Howard, Director, Revenue Branch

All Subscribers, Interior Appraisal Manual

BRITISH COLUMBIA Ministry of Forests

MANUAL REVISION TRANSMITTAL

FOR FURTHER INFORMATION CONTACT:

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MANUAL TITLE
Interior Appraisal Manual

REVISION No.	ISSUE DATE
Amendment No. 11	September 1, 1999

MANUAL CO-ORDINATOR
Judy Laton
Revenue Branch

AUTHORIZATION (Name, Title)
W. Howard
Director, Revenue Branch

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

ACTION (Remove/Insert)	(VOL.) CHAPTER-SECTION-SUBJECT TABLE OF CONTENTS	PAGE(S)	COMMENTS
REMOVE	Chapter 7	All	
INSERT	Chapter 7	All	
INSERT	Transmittal Sheet & Minister's Letter		Behind Amendment Tab

Market Pricing System 7

The Market Pricing System (MPS) policy provided in this chapter is to be used only for timber sale licences awarded under Section 20 and 21 of the *Forest Act* on or after January 1, 1999.

Where a timber sale licence with stumpage rates calculated using MPS does not receive any bids and is subsequently directly awarded under the authority of Section 23(1)(e) of the *Forest Act* the MPS upset stumpage rate will be used.

Chapters 3, 4, 5 and 6 of this manual are only to be used, for Section 20 and 21 Timber Sale Licences (TSL), where directly referenced in chapter 7

7.1 MPS Introduction

The Market Pricing System is the basis for determining sawlog stumpage rates for timber sale licences issued under Section 20 and 21 of the *Forest Act*, subject to a minimum stumpage rate. Sections 2.1 (2) and (3) of this manual provide the methods that are used for deriving stumpage rates for specific products and extraordinary situations.

MPS is a method of estimating the stumpage value of a stand of timber based on the results of previous similar timber stands that were sold competitively.

MPS can only be used where complete appraisal data is available for the cutting authority area. Where data is not available see Section 6.2.

The MPS upset rate and bonus bid applies to coniferous sawlogs only. All deciduous species, special forest products and grade 3, 4, 5 or 6 logs have a default price listed under Section 6.7.

7.2 MPS Principles and Procedures

7.2.1 MPS Appraisals

The initial upset stumpage rate will be calculated using the *Interior Appraisal Manual* and monthly parameters (Selling Prices and Consumer Price Index (CPI)) in effect on the date of calculating (appraisal effective date). This rate plus the bonus bid remains in effect from the date of award of the sale until the next quarterly adjustment.

7.2.2 MPS Stumpage Adjustments

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

At the time of the quarterly adjustment, the MPS upset rate will be re-calculated based on the equations applicable for the appraisal effective date and the cutting authority data. The monthly parameters effective for the month of the adjustment will be used in the calculation instead of the original values. All other data remain unchanged.

This process is repeated quarterly until the cutting authority is reappraised.

7.2.3 Reappraisals for MPS Appraisals

Revised data and revised monthly parameters will be used with the equations in effect on the reappraisal date. The original bonus bid remains in effect.

7.2.4 Calculation Conventions

Stumpage rate calculations are performed according to the methods specified in the document entitled, *Specification: Calculating Stumpage Rates for Interior Appraisals for the Market Pricing System* approved by the Director of Revenue Branch.

7.2.5 Methodology

Calculating the upset stumpage rate for Small Business Forest Enterprise Program (SBFEP) timber sales, issued under Section 20 and 21 of the Forest Act after September 1, 1999, will be done using the following methodology:

1. Calculate a Selling Price (SP) of the products that can be recovered from the stand using Sections 7.3.1 and 7.3.2 with the variables as defined.

2. Calculate the stand Quality Index (QI) for products that can be recovered form the stand using Section 7.3.3 with the variables as defined.

3. Calculate the market stumpage price using the equation in Section 7.4.2, the variables for the stand, the QI calculated in Section 7.3 and the SP calculated in Section 7.3.

4. Calculate the upset stumpage rate by discounting the market stumpage price calculated in Section 7.4.2 using the discount factor in Section 7.5.

One stumpage rate is determined for all appraised coniferous sawlogs in each cutting authority area. Other products and deciduous species are priced using miscellaneous stumpage rates as specified under Section 6.7.

7.3 MPS Selling Prices

Selling prices for MPS are based on three month averages of schedules of lumber values collected and published monthly by Revenue Branch. When the MPS values are compiled and distributed they become an integral part of this manual.

7.3.1 MPS Lumber Average Market Values

Monthly market value information for the interior is obtained by Revenue Branch from lumber producers located in each average market value zone. The zones are defined by point of appraisal (see Section 2.5). Average market values (AMV) for each species are compiled by dividing total sales value by total sales volumes for each zone.

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

The total net sales value for each species or species group is reported in Canadian dollars FOB mill. These sales values are rolled up into three month averages each month. There is approximately a one month lag in reporting.

7.3.2 Calculation of Species Lumber Selling Price

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

1. Zonal LRF update add-ons are found in Table 3-1, by species.
2. Lumber AMVs as published every month.
3. Calculation of Total Species Lumber Selling Price.
    a. a. Appraisal LRF = Cruise LRF + LRF update add-on
    b. b. Species SP ($/m3) = Species AMV($/mbm)/1000 * Appraisal LRF
4. The stand SP is the volume prorated sum of the species SP.

7.3.3 Calculation of Stand Log Quality Index

The stand log Quality Index (QI) is a relative term used to judge the potential to produce lower or higher quality/value products from different stands. The stand log quality index is a species volume weighted number.

It is determined using each species Lumber Recovery Factor (LRF) from the cruise compilation summary, the Zonal LRF update add-ons by species from Chapter 3 and the average appraisal LRF.

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

2. Appraisal LRF = Cruise LRF + LRF update add-on, by species.

3. Calculate a species volume weighted total stand appraisal LRF.

4. The stand QI is the volume prorated sum of the species LRF divided by the average appraisal LRF of 229.5.

7.4 Market Stumpage Price Calculation

The market stumpage price is calculated as detailed in this section. It is assumed that the market stumpage price will approximate the final stumpage rate, including the bonus bid, based on the variables used.

7.4.1 Market Stumpage Price Variables

MSP	=	Market Stumpage Price for the cutting authority in ($/$m^3$).
CPIF	=	B.C. Consumer Price Index (P110000) for current month divided by the base CPI of 109.3.
QI	=	Stand Log Quality Index. See Section 7.3.
SP	=	Lumber Selling Price ($/$m^3$). See section 7.3.
DC	=	Estimated Development Cost Borne by the Licensee ($). Calculated using Section 4.3.
VOL	=	Total net cruise volume of coniferous timber (m^3).
S%	=	Average cruise side slope for ground and cable yarding systems (does not include the area for horses and helicopter yarding systems).
VPT	=	Prorated net cruise coniferous volume per tree (m^3) for ground and cable yarding systems. Plus horse and helicopter systems use average VPT = 0.4705.
VPH	=	Net cruise coniferous volume per hectare (m^3/ha).
BWDN%	=	Blowdown as a percent of net cruise coniferous volume for ground and cable yarding systems. Does not include the volume for horse and helicopter yarding systems).
BURN%	=	Species volume prorated total burn percent.
CY%	=	Overhead cable yarding coniferous volume (includes skyline) as a percent of VOL.
HP%	=	Helicopter yarding coniferous volume as a percent of VOL.
HORSE%	=	Horse yarding coniferous volume as a percent of VOL.
CYCLE	=	Hauling round trip cycle time from the landing to the point of appraisal or water dump site and return (hrs). See Section 4.5.1

DUS%	=	Dead Useless Snags as a percent of net cruise coniferous volume for ground and cable yarding systems. Does not include the volume for horses and helicopter yarding systems.
HEM	=	Combined hemlock and balsam, dummy variable.
Z9	=	Fort Nelson Peace selling price zone, dummy variable.

7.4.2 Market Stumpage Price Equation

Using the variables defined in Section 7.4.1, the selling price calculated in Section 7.3.2, the quality index calculated in Section 7.3.3, the Licensee's development cost calculated in Section 4.3, and the equation below, calculate the market stumpage price (MSP).

$$MSP = [8.5469 + 43.0570 * QI + 0.1431 * SP/CPIF - 0.9216* (DC/VOL)/CPIF + 0.1663 * (VOL/1000) - 0.0860 * S\% + 11.1877 * \ln(VPT) + 0.007877 * VPH - 16.6309 * (BWDN\%/100) - 14.0790 * (CY\%/100) - 36.7619 * (HP\%/100) - 13.7335 * (HORSE\%/100) - 22.3433 *(BURN\%/100) - 2.4250 * CYCLE - 8.9936 * HEM - 8.7153 * (DUS\%/100) - 9.4184 * Z9] * CPIF$$

For the above equation the following definitions apply:

- if the percentage of Hemlock and Balsam volume in the cutting authority is greater than or equal to 60 percent of VOL, then HEM = 1, otherwise enter 0,
- if the selling price zone is Fort Nelson Peace (9) then Z9 = 1, otherwise enter 0,
- if VOL is greater than 50 000, then VOL = 50 000,
- if horse and helicopter log appraisals use VPT = 0.4705.

7.5 Calculation of MPS Stumpage Rate

For each cutting authority area, the MPS upset stumpage rate is determined by selecting the greater of:

- the MPS upset stumpage rate, or
- the prescribed minimum stumpage rate.

7.5.1 Upset Stumpage Rate Calculation

The upset stumpage rate is calculated by taking the Market Stumpage Price and reducing it using the Discount Factor (DF).

USR = MSP * (1-DF)

Where:

USR = Upset Stumpage Rate
MSP = Market Stumpage Price as defined in Section 7.4.2
DF = 0.30

7.5.2 Prescribed Minimum Stumpage Rate

The minimum stumpage rate is prescribed by the Minimum Stumpage Rate Regulation (BC Regulation 354/87). The current minimum stumpage rate is $0.25 per cubic metre.

7.5.3 Total MPS Stumpage Rate

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

7.6 Deciduous and Miscellaneous Forest Products

The stumpage rates for deciduous sawlogs, all species grade 3, 4, 5 and 6 logs and other miscellaneous forest products are found in Section 6.7.

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