



MEMORANDUM

File: 195-30/IAPP

May 25, 1999

To: Regional Managers

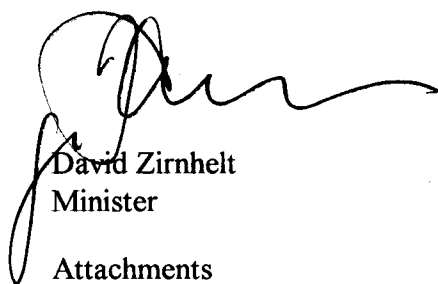
From: The Honourable David Zirnhelt
Minister of Forests

Re: Amendment to the *Interior Appraisal Manual*

I hereby approve Amendment No. 7 to the *Interior Appraisal Manual*, and attach a copy for your use. The following sections are amended as follows.

Section 4.1.1	Clarification of "skidder swinging" under specified operations.
Section 4.3.1.1.5.2	Extended road amortization, clarification for "woodlots".
Section 7.0	Market Pricing System stumpage also applies to Section 23(1)(e) timber sale licence sales.
Section 7.2.5	Housekeeping.
Section 7.5.1	Addition of a high development cost discount factor for timber sale licences appraised with Market Pricing System where extraordinary development costs are the responsibility of the licensee.

This amendment will come into force on June 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*



FOR FURTHER INFORMATION CONTACT:

John Cook
Sr. Timber Pricing Forester (Interior)

Revenue Branch
Ministry of Forests
PO Box 9511 Stn Prov Govt
Victoria, B.C. V8W 9C2

Phone: 356-7675
PROFS userid: John.Cook@gems2.gov.bc.ca
FAX: 387-5670

MANUAL TITLE

Interior Appraisal Manual

REVISION No.

Amendment No. 7

ISSUE DATE

June 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	PAGE(S)	COMMENTS
	TABLE OF CONTENTS		
REMOVE	Table of Contents	i - vi	
INSERT	Table of Contents	i - vi	
REMOVE	Chapter 4	3 - 4 11 - 12	
INSERT	Chapter 4	3 - 4 11 - 12	
REMOVE	Chapter 7	1 - 4 7 - 10	
INSERT	Chapter 7	1 - 4 7 - 12	
REMOVE	Index	1 - 4	
INSERT	Index	1 - 4	
INSERT	Minister's Letter and Manual Revision Transmittal		After Amendments Tab

Table of Contents

1 Introduction

1.1 Terms of Reference.....	1-2
1.2 Area of Application.....	1-3
1.3 Cutting Authority.....	1-4
1.3.1 Cutting Authority Area.....	1-4
1.4 Responsibility for Stumpage.....	1-5
1.5 Market Pricing System.....	1-6
1.6 Comparative Value Timber Pricing	1-7
1.7 CVP Stumpage Adjustments.....	1-9

2 Appraisal Principles and Procedures

2.1 Types of Determination.....	2-2
2.2 Time Schedule - Appraisals and Reappraisals	2-3
2.3 Reappraisal	2-5
2.4 Fixed Stumpage Rate and Extension of Term.....	2-9
2.5 Point of Appraisal.....	2-11
2.5.1 Method of Transportation to be Used in Determining Point of Appraisal.....	2-13
2.6 Calculation Conventions	2-14

3 Interior Selling Prices

3.1 Lumber Average Market Values	3-2
3.1.1 Application of Lumber Average Market Values.....	3-4
3.1.2 Lumber Average Market Value Zones.....	3-4
3.2 Chip Average Market Values	3-5
3.3 Calculation of Species End Product Selling Price	3-5

4 Operating Cost Estimation

4.1 Cost Estimates.....	4-2
4.1.1 Specified Operations	4-3
4.2 Appraisal Data Requirements.....	4-4
4.3 Development	4-5

4.3.1 Development Cost Categories	4-6
4.3.1.1 Development Cost Allocation	4-8
4.3.2 Tabular Cost Estimates	4-11
4.3.2.1 Subgrade Construction	4-11
4.3.2.2 Subgrade Construction Variables	4-12
4.3.2.3 Subgrade Cost Estimate	4-15
4.3.2.4 Drainage Structures	4-17
4.3.2.5 Additional Stabilizing Material	4-20
4.3.2.6 Cattle Guards, Remedial Fences and Pipeline Crossings	4-22
4.3.2.7 Snow Road Reconstruction	4-22
4.3.3 Detailed Engineering Cost Estimates	4-23
4.4 Tree-to-Truck	4-27
4.4.1 Harvesting Methods	4-28
4.4.2 Tree-to-Truck Variables	4-29
4.4.3 Tree-to-truck Cost Estimate	4-32
4.4.4 Tree-to-Truck Additive for Damaged Timber	4-36
4.4.5 Prorating Tree-to-Truck Cost Estimates	4-37
4.5 Log Transportation	4-38
4.5.1 Truck Haul Variables	4-38
4.5.2 Truck Haul Cost Estimates	4-40
4.5.2.1 Primary Haul	4-40
4.5.2.2 Secondary Haul	4-41
4.5.3 Water Transportation Cost Estimate	4-41
4.5.4 Special Transportation Systems	4-41
4.6 Road Maintenance	4-43
4.7 Road and Land Use Charges	4-47
4.8 Administration and Other Costs	4-48
4.8.1 Overhead	4-48
4.8.2 Isolated Cutting Authority Areas	4-49
4.8.3 Low Volume Additive	4-49
4.9 Post-Logging Treatment Costs	4-51
4.10 Basic Silviculture Cost Estimate	4-52
4.11 Manufacturing Cost Estimates	4-55
4.12 Cost Trend	4-58

5 Stumpage Rate Determination

5.1 Indicated Stumpage Rate	5-2
5.2 Value Index	5-3
5.3 Mean Value Index	5-4
5.4 Market Value Indexing	5-5
5.5 Base Rate	5-6
5.6 Calculation of Stumpage Rate	5-7
5.6.1 Calculation of Indicated Stumpage Rate	5-7

5.6.2 Prescribed Minimum Stumpage Rate	5-7
5.6.3 Reserve Stumpage Rate.....	5-7
5.6.4 Upset Stumpage Rate.....	5-8
5.6.5 Total Stumpage Rate.....	5-8

6 Miscellaneous Timber Pricing Policies

6.1 Average Value Indexes by District and Species	6-2
6.2 Cutting Authorities With 5 000 m ³ or Less Volume.....	6-3
6.3 Right-of-way Cutting Authorities.....	6-4
6.4 Partially Harvested Timber.....	6-5
6.5 Small Business Forest Enterprise Program (SBFEP) Sales.....	6-6
6.6 Levies.....	6-7
6.7 Miscellaneous Stumpage Rates	6-8
6.7.1 Special Forest Products and Other Miscellaneous Rates	6-8
6.7.2 Miscellaneous Stumpage Rates for Timber Licences.....	6-11

7 Market Pricing System

7.1 MPS Introduction.....	7-2
7.2 MPS Principles and Procedures.....	7-3
7.2.1 MPS Appraisals	7-3
7.2.2 MPS Stumpage Adjustments.....	7-3
7.2.3 Reappraisals for MPS Appraisals.....	7-3
7.2.4 Calculation Conventions.....	7-3
7.2.5 Methodology.....	7-4
7.3 MPS Selling Prices.....	7-5
7.3.1 MPS Lumber Average Market Values	7-5
7.3.2 Calculation of Species Lumber Selling Price	7-5
7.4 Market Stumpage Price Calculation	7-6
7.4.1 Market Stumpage Price Variables.....	7-6
7.4.2 Market Stumpage Price Equation.....	7-7
7.5 Calculation of MPS Stumpage Rate	7-8
7.5.1 Upset Stumpage Rate Calculation	7-8
7.5.1.1 Discount Factor.....	7-8
7.5.1.2 High Development Cost Discount Factor.....	7-8
7.5.2 Prescribed Minimum Stumpage Rate	7-9
7.5.3 Total MPS Stumpage Rate.....	7-9
7.6 Deciduous and Miscellaneous Forest Products	7-10

Appendices

Appendix I Equipment and Labour Rates.....	A-2
Appendix II Lumber Recovery Factors (board feet/cubic metre).....	A-4
Appendix III Development Cost Allocation.....	A-5

Index

Tables

Table 2-1 Points of Appraisal	2-11
Table 3-1 LRF Update Add-ons and Combined Recovery Factors	3-6
Table 3-2 Chip Yield Factors	3-8
Table 3-3 Shipping Differentials	3-9
Table 3-4 Manufacturing Cost Differential	3-9
Table 4-1 Specified Operations	4-3
Table 4-2 Road Groups	4-15
Table 4-3 Culvert Cost Estimates	4-17
Table 4-4 Log Bridge Cost Estimates	4-19
Table 4-5 BC Rail Log Transportation	4-41
Table 4-6 Road Maintenance Cost Estimates	4-43
Table 4-7 Administration Cost Estimates	4-47
Table 4-8 District Silviculture Groupings	4-51
Table 4-9 Treatment Regime Cost Estimates	4-52
Table 4-10 Untrended Manufacturing Cost Estimates	4-55
Table 5-1 Timber Licence Stumpage Rate Adjustment Schedule	5-8
Table 6-1 Miscellaneous Stumpage Rates	6-9
Table 6-2 Miscellaneous Stumpage Rates for Timber Licences	6-11

This page is intentionally left blank.

conditions are not permitted. The cost estimates have an effective cost base date of July 1, 1996.

4.1.1 Specified Operations

In addition to the logging methods and phase costs that are covered by this manual, there are specified operations which require special cost estimating. The following is a complete list of specified operations for which certain phase cost estimates are based on the information on hand rather than on the tables and formulas in this manual. Other phase cost estimates in this manual are combined with the specified operation cost estimate to determine the total operating cost. Where appropriate, specified operations are weighted according to the applicable net cruise volume.

Specified operations shall be recognised only when the treatment is required within the Silviculture Prescription, Cutting Authority Document or the Forest Development Plan as dictated by site conditions. Where a specific treatment is not required based on these conditions, the conventional cost estimate shall apply.

Further information on specified operations may be obtained from the Regional Appraisal Coordinators.

Table 4-1 Specified Operations

Specified Operations	Affected Phase
Salvage of small patches of timber dispersed over a large area ¹	Tree-to-Truck (Section 4.4)
Kinbasket Lake Barge/Ferry not used for truck haul (private)	Special Transportation Systems (Section 4.5.4)
Root Disease Control (Pushover Logging and Stump Removal) ²	Silviculture (Section 4.10)
Skidder Swinging (includes all ground skidding methods) ³	Log Transportation (Section 4.5)

¹ For use with ground skidding and cable logging only when salvaging diseased or damaged timber.

² Felling of trees by pushing them over to expose the root ball for root disease control purposes. The root balls may or may not be piled and burned.

³ Skidder swing will only be considered between the harvest methods listed in Section 4.4.1 (four methods), in order to deliver logs to an existing or appraised road/landing.

4.2 Appraisal Data Requirements

The cruise and all other pertinent information required for the appraisal must be submitted by the licensee with the appropriate Interior Appraisal Data Sheet to the District Manager.

Unless otherwise specified by the Director, Revenue Branch, cruise data must be gathered and compiled according to the approved interior close utilization specifications and in accordance with the following Ministry of Forests publications:

- Forest Service Cruising Procedures & Cruise Compilation (*Cruising Manual*),
- *Cruise Compilation User Manual*,
- *Cruise Compilation Design Manual*,
- Regional Publications - (e.g., *Operational Cruising Requirements in a Forest Region*), and
- Forest Service Policies - (e.g., *Timber Utilization Standards, Policies & Procedures for the Interior of the Province*).

In order to verify the accuracy of the cruise compilation program, the licensee must provide, on request, photocopies of the tally sheets and a magnetic copy of the data list in a format prescribed by the Regional Manager.

The net cruise volume (m^3) is the gross volume (m^3) less decay, waste and breakage by species. The cutting authority total net cruise volume is calculated by multiplying the net cruise volume per hectare (m^3/ha) by the total merchantable timbered area(ha) to be harvested, net cruise volume is rounded to the nearest cubic meter as required in the *Cruising Specifications*.

Each reappraisal uses a cruise volume by species which is the original net cruise volume adjusted on the basis of approved amendments to the cutting authority since the last appraisal (see Section 2.3).

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

4.3.1.1.5 Extended Road Amortization

Where the development cost estimate exceeds \$4.00/m³ a written agreement may be made which apportions the main access road cost estimate to two or more tributary cutting authorities. The main access road ends at the far boundary of the first cutting authority being appraised.

The agreement is subject to the following conditions:

1. Only main access roads serving the tributary cutting authorities (as defined in Section 4.3) may be considered.
2. With the exception of woodlot licences, each cutting authority must be in the licensee's approved forest development plan.
3. For woodlot licences, each cutting authority to which costs are amortized must be approved and appraised during the ten year period from the signing of the agreement. Reappraisals may continue to carry the costs until the cutting authority expires.
4. The agreement must be signed by the licensee and the licensor prior to the appraisal or reappraisal.
5. The amount apportioned will be a fixed lump sum which will be trended to the manual cost base and as provided for in Section 4.12 but not otherwise revisited.
6. The term of the agreement must not exceed the terms of the cutting authorities.
7. The agreement will only be valid under CVP and confers no obligation for the Crown to compensate licensees for any unamortized costs.

4.3.2 Tabular Cost Estimates

These roads are generally a single lane width with turnouts. These roads may or may not be stabilized (ballasted or surfaced) with additional materials.

4.3.2.1 Subgrade Construction

The subgrade construction cost estimate includes:

- clearing,
- grubbing,
- stripping,
- debris disposal,
- stump removal,
- ditch construction,
- turnout construction (not landings),
- material costs, and

- installation of culverts with diameters up to 950 mm or the equivalent cross-section area or single log abutment culverts up to 3.4 m span.

Right-of-way felling and logging is excluded.

4.3.2.2 Subgrade Construction Variables

For appraisal purposes the following subgrade construction variables are recognized:

1. Section length: (L)

Road sections are recorded in multiples of 0.1 km. Each section should be representative of a single moisture class. Each section should be 1 km or longer, although some individual section lengths less than 1 km but greater than 0.1 km are acceptable for extreme variations of slope or percent rock. The section length includes that portion traversing through landings. For ground skidding, short roads (up to and including 100 m long) that access single landings are included in the tree-to-truck cost estimates (Section 4.4) and are not eligible for development cost estimates.

2. Road Type:

- Operational Roads (OP): - are generally built under the authority of a road permit but portions may be constructed under the cutting authority. An operational road exists within a cut block when the road accesses timber beyond the cutblock or is intended to access timber beyond the block as shown on a development plan.
- Block Roads (BLOCK): - are generally built under the cutting authority and include roads which are located completely within the cutblock.
- Snow Roads (WINTER): - snow roads are a form of overland construction that uses clean snow and ice as fill. Suitability of materials is not an issue as all are frozen. Stripping is limited to large stumps that cannot be easily covered with snow or ice. Cuts into mineral or organic soil must not exceed 0.3 m in depth for sustained distances or 0.5 m in depth for distances up to 5 m. This road type includes operational and block road categories. Stabilizing costs are not applicable. Snow (winter) roads constructed on side slopes of greater than 15% are appraised as block roads.

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 stumpage 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 January 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 Section 7.3 with the variables as defined.
2. Calculate the market stumpage price using the equation in Section 7.4.2, the variables for the stand and the SP calculated in Section 7.3.
3. Calculate the upset stumpage rate by discounting the market stumpage price calculated in Section 7.4.2 using the appropriate 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.

7.4.2 Market Stumpage Price Equation

Using the variables defined in Section 7.4.1, the selling price calculated in Section 7.3.2 and the equation below, calculate the market stumpage price (MSP).

$$\begin{aligned} \text{MSP} = & [17.9126 + 0.3043 * \text{SP/CPIF} + 0.2564 * (\text{VOL}/1000) - 0.3005 * \text{S\%} + \\ & 12.1037 * \text{VPT} + .04629 * \text{VPH} - 18.0267 * (\text{BWDN\%}/100) - 16.9130 * \\ & (\text{CY\%}/100) - 43.6800 * (\text{HP\%}/100) - 8.6777 * (\text{HORSE\%}/100) - 3.6290 * \\ & \text{CYCLE} - 0.03966 * \text{TOW} - 8.1365 * \text{Z6} - 11.2927 * \text{Z9}] * \text{CPIF} \end{aligned}$$

For the above equation the following definitions apply:

- if the selling price zone is Skeena (6) then $\text{Z6} = 1$, otherwise enter 0,
- if the selling price zone is Fort Nelson Peace (9) then $\text{Z9} = 1$, otherwise enter 0, or
- if VOL is greater than 50 000, then $\text{VOL} = 50\,000$.

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 result and reducing it using the discount factor (DF) or the high development cost discount factor (DCDF).

7.5.1.1 Discount Factor

For cutting authorities where the development is the responsibility of the Crown or the test for high development costs from Section 7.5.1.2 is not met, then the upset stumpage rate is:

$$\text{USR} = \text{MSP} * (1 - \text{DF})$$

Where:

$$\begin{aligned}\text{USR} &= \text{Upset stumpage rate} \\ \text{MSP} &= \text{Market Stumpage Price as defined in Section 7.4.2} \\ \text{DF} &= 0.30\end{aligned}$$

7.5.1.2 High Development Cost Discount Factor

For cutting authorities appraised with MPS where some or all of the development is the responsibility of the timber sale licence holder, a revised discount factor will be used where the test for a high development cost discount factor (DCDF) is proven below.

If:

$$\text{DCDF} > 0.30$$

Where:

$$\text{DCDF} = (\text{DC} - 1.59) / \text{MSP}, \text{ (round to nearest 0.01)}$$

$$\text{DC} = \text{Estimated development cost borne by the licensee, using Section 4.3 of this manual.}$$

Then use DCDF as the revised discount factor and the upset stumpage rate is:

$$\text{USR} = \text{MSP} * (1 - \text{DCDF})$$

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.

Index

A

Access Management, 4-8, 4-24
Adjustable Stumpage Rates, 6-6
Adjustments
 CVP, 1-9
 MPS, 7-3
Administration and Other Costs, 4-48
Administrative Line, 1-3
Amendments, 2-6
AMVs for Licences which Require
Utilization of Small Logs, 3-3
Applicable Licences, 4-2
Appraisal Data Submission (Interior
Appraisal Data Sheet), 2-3
Appraisal LRF, 3-10
Appraisals
 New MPS, 7-3
 New MPS Reappraisals, 7-3
Area, 4-4
Average Cost Estimates, 4-6
Average Stumpage Rate, 1-8

B

Barge/Ferry, 4-42
Barge/Ferry Not Used for Truck Haul, 4-42
Basic Silviculture, 4-52
Basic Silviculture Levy, 6-7
Benefits, 4-2, 4-55
Biogeoclimatic Zone, 4-29
Biogeoclimatic Zones, 4-13
Blasting, 4-13
Block Roads, 4-12
Bonus bid, 5-8
Bonus Bid, 1-7

Boom, 4-41
Borrow Pit, 4-20
Boulders, 4-13
Breakage, 4-4
Bridge Removal, 4-24
Bridges, 4-24
Brushing, 4-53
Burned Timber, 3-5

C

Calculation Conventions, 7-3
Calculation of MPS Stumpage Rate, 7-8
Calculation of Sepcies Lumber Selling Price,
7-5
Calculation of Total Species End Product
Selling Price, 3-9
Camp, 4-41
Canadian Lumber Standard/American
Lumber Standard, 3-2
Cascade Mountains, 1-3
Cattle Guards, 4-22
Charges as a Share of Road Maintenance,
4-47
Charges Other Than for Road Maintenance,
4-47
Chip Value, 3-10
Chip Yield, 3-10
Chip Yield Derivation, 3-8
Chip Yield Factors, 3-8
Chips, 4-55
Clear Cut, 4-32
Clearing, 4-11
Combined Product Recovery Factors, 3-6
Continuous Road Access, 4-49
Corduroy, 4-24
Cost Trend, 4-58
Cost Trend Factors, 4-58
Crib Back Fills, 4-19
Cruise Compilation, 4-4
Cruise Data, 4-4
Cruising Manual, 4-4
Culverts, 4-12, 4-17
Cut/Fill Slope Stabilization, 4-24
Cutting Authority, 1-4
Cutting Authority Document, 4-3

Cycle Time, 4-38

D

Dead/Live Useless Snags, 4-36
Debris Disposal, 4-11
Decay, 4-4
Deciduous, 4-54
Deciduous and Miscellaneous Forest Products, 7-10
Decked Timber, 6-5
Deep Fill, 4-25
Depreciation, 4-2, 4-55
Detailed Engineering Cost Estimates, 4-6
Determination of Stud Log Percent, 3-8
Development Costs, 4-5
Development Costs on Private Land, 4-10
Development Levy, 6-7
Dewater, 4-41, 4-55
Dewater and Reload, 4-41
Discount Factor, 7-8
Distance to Support Centre, 4-30
District Average Value Index, 2-11
District Manager, 2-3
Ditch Construction, 4-11
Drain Structure Cost Estimates, 4-6
Drainage Structures, 4-17
Drilling, 4-13
Dump, 4-41

E

Effective Date, 4-58
End Haul Construction, 4-23
Existing Roads and Structures, 4-10
Extended Road Amortization, 4-11

F

Fences, 4-22
Fire Damage, 4-36
Fixed Stumpage Rates, 6-6
Forest Act, 1-2
Forest Development Plan, 4-3
Forest District Specific, 6-10
Forest Service *Cruising Manual*, 4-36
Forest Service Roads, 4-47

Free-Growing Stocking Standards, 4-52

Fuel, 4-2, 4-55

Full Appraisal, 2-2

G

Geo-tech Fabric, 4-24
Gravel, 4-20
Gross Volume, 4-31
Ground Skidding, 4-28, 4-32
Grubbing, 4-11
Gullies, 4-23

H

Haul Method, 4-39
Helicopter, 4-28
Helicopter Logging, 4-32
High Development Cost Discount Factor, 7-8
Highway Haul, 4-40
Highway Hauling, 4-39
Horse, 4-28
Horse Logging, 4-32

I

Indicated stumpage rate, 5-7
Indicated Stumpage Rate, 1-7, 5-7
Installation, 4-19
Insurance, 4-2, 4-55
Interior Appraisal Data Sheet, 4-4
Interior Base Rate, 1-7, 5-7
Interior Mean Value Index, 5-7
Interior Target Rate, 1-7, 5-5
Interior, Area of Application, 1-3
Isolated Cutting Authorities, 4-31
Isolated Cutting Authority Areas, 4-49

L

Landings, 4-12
Least Total Harvesting Cost Estimate, 4-2
Log Bridges, 4-19
Low Volume Additive, 4-49
LRF Update Add-ons, 3-6
Lumber, 4-55
Lumber Market Values, 1-8
Lumber Recovery Factors, 3-5

M

Main service road, 4-5
Maintenance, 4-2, 4-55
Major Culvert Removal, 4-24
Mandatory Grade 4 Hemlock AMVs, 3-3
Manufacturing Cost Differential, 3-9
Manufacturing Costs, 1-2
Market Pricing System, 7-2
Market Stumpage Price Calculation, 7-6
Market Stumpage Price Equation, 7-7
Market Stumpage Price Variables, 7-6
Material Costs, 4-11
Mathematical Error, 2-8
Mean Value Index, 1-7
Methodology, 7-4
Minimum Stumpage Rate, 1-7
Minister's Direction, 2-9
Miscellaneous Stumpage Rates, 1-8, 2-11, 6-8
Moving Assistance, 4-2
MPS Appraisals, 7-3
MPS Introduction, 7-2
MPS Lumber Average Market Values, 7-5
MPS Principles and Procedures, 7-3
MPS Selling Prices, 7-5
MPS Stumpage Adjustments, 7-3
MPS Upset Stumpage Rate, 7-8

N

New Construction, 4-6
New Construction and Upgrading, 4-23
New Cutting Authority, 2-3
Non-Commercial Brush (NCBR), 4-54

O

Off-Highway Haul, 4-40
Off-Highway Hauling, 4-39
Operating Cost, 1-7, 5-3
Operational Roads, 4-12
Order, 2-2
Other Land Use Charges, 4-47
Other Roads, 4-47
Overhead, 4-2
Overhead Cable Logging, 4-28, 4-34

Overland Construction, 4-23
Overtime, 4-2, 4-55

P

Partial Cut, 4-32
Partial Cutting, 4-29, 4-54
Percent (%) Stud AMV, 3-8
Percent Blowdown, 4-29
Percent Partial Cut, 4-29
Percent Rock, 4-13
Percentage of the Indicated Stumpage Rate, 1-7, 5-8
Permitted Roads, 4-47
Pipe Line Rights-of-Way, 6-10
Pipeline Crossings, 4-22
Point of Appraisal, 4-38
Prescribed Minimum Stumpage Rate, 7-9
Primary Haul, 4-40
Profit and Risk Margins, 4-2
Pull Back Unstable Sidecast, 4-24
Pushover Logging, 4-3

R

Railway, 4-41
Railway Transportation, 4-42
Random Lumber, 3-2
Random Lumber AMVs, 3-3
Reappraisal, 2-2, 2-3, 2-5
Reappraisal at Anniversary Date, 2-6
Reappraisals for MPS Appraisals, 7-3
Reconstruction, 4-24
Reconstruction and Replacement, 4-7
Regional Manager, 2-2
Regional Manager's Rates, 2-11
Regional Revenue Staff, 2-2
Reload, 4-41
Repair, 4-2, 4-55
Request for Approval for a Road Use Charge, 4-47
Reserve Stumpage Rate, 1-7
Retaining Walls, 4-24
Right-of-way, 6-3
Right-of-way Felling, 4-12
Rip Rap, 4-19

Road Type, 4-12
Road Use Charges, 4-47
Roads, 4-5
Rock, 4-13
Rock Drilling, 4-21
Root Disease Control, 4-3
Routine Road Maintenance Cost Estimate, 4-44

S

SBFEP, 6-6
Secondary Haul, 4-41
Section 20 Timber Sale Licences, 6-6
Section 21 Timber Sale Licences, 6-6
Section Length, 4-12
Sector Times, 4-38
Selling Price, 1-7, 5-3
Shipping Differential, 3-9
Side Slopes, 4-23
Silviculture Prescription, 4-3, 4-54
Site Preparation, 4-19
Skidder Swinging, 4-3
Skyline, 4-35
Slope, 4-29
Slough Removal, 4-25
Small Business Forest Enterprise Program, 2-10
Small Log, 3-2
Small Log AMVs, 3-2
Small Scale Salvage Initiative, 6-3
Snow Road Reconstruction, 4-22
Snow Roads, 4-12, 4-16
Soil Moisture Regime (SMR), 4-13
Special Structures, 4-24
Stabilizing Material, 4-20
Stripping, 4-11
Stud, 3-2
Stud Lumber, 3-3
Stump Removal, 4-3, 4-11
Stumpage Rate Calculations, 2-15
Subgrade Construction, 4-11
Subgrade Cost Estimate, 4-15
Sudden and Severe Damage, 2-5
Supplies, 4-2, 4-55
Supply and Delivery, 4-19

T

Tabular Cost Estimates, 4-5
Tally Sheets, 4-4
Timber Licence, 2-11
Timber Supply Areas, 4-43
Total Coniferous Volume of 2 000 m³ to 5000 m³, 6-3
Total Coniferous Volume of Less than 2000 m³, 6-3
Total Merchantable, 4-4
Total MPS Stumpage Rate, 7-9
Total Stumpage Rate, 1-7
Total Volume of 2 000 m³ or Greater, 6-4
Total Volume of Less than 2 000 m³, 6-4
Tow, 4-41
Treatment Regimes, 4-52
Tree Farm Licence, 4-43
Tributary Cutting Authorities, 4-5
Truck Hauling, 4-21
Truck to Rail Transfer, 4-41
Turnout Construction, 4-11

U

Unloading, 4-55
Uphill Side Slope, 4-13
Upset Stumpage Rate, 1-7, 5-8
Upset Stumpage Rate Calculation, 7-8

V

Value Index, 1-7, 5-2, 5-7
Volume per Hectare, 4-4
Volume Per Hectare, 4-29
Volume Per Tree, 4-31
Volume Removal Factor, 4-54

W

Wages, 4-2, 4-55
Waste, 4-4
Weeding, 4-53
Woodlot Licences, 4-43
Woodlots, 2-10