

**ITEM 9-1
FORPLAN Unit Costs**

ACTIVITY, PRACTICE OR EFFECT TO BE MEASURED	REPORTING PERIOD	VARIABILITY (+/-) WHICH WOULD INITIATE FURTHER EVALUATION
Verification of unit costs used in FORPLAN	Annual	In general, + or - 25% variation would trigger need to rerun FORPLAN

Introduction/Methods: The forest economist uses FORPLAN computer models to evaluate activities for the Forest Plan. See Appendix B of the Forest Plan for a complete description of the process. This monitoring item verifies unit values used in FORPLAN have not changed significantly.

There are a number of reasons why unit costs would change over time. Such factors include: 1) changes in local and national timber market conditions; 2) the general state of the economy, which leads to inflationary prices during periods of expansion; 3) adoption of new harvesting technology by purchasers; 4) modified and/or improved post-sale treatment methods implemented by the forest; and 5) changes in the budget and staffing on the forest.

In 1988, forest personnel conducted a systematic collection and analysis of all unit costs. This was accomplished for the first time since unit costs and timber values were initially gathered for FORPLAN in 1978. The forest economist incorporated the revised costs and values in FORPLAN and reported the results in the 1988 Forest Plan Monitoring Report.

In 1991, the University of Montana, Bureau of Business and Economic Research branch, collected stump to truck harvest costs from logging operators. The results of this study were presented in the 1992 Forest Plan Monitoring Report.

Results/Evaluation: Management costs have not significantly changed in the last year. Table 9-1A shows how unit costs for a variety of timber management activities have varied over the past four years.

Table 9-1A. Unit Costs for Timber Management Activities (\$95 base dollars).

Activities	1995	1996	1997	1998	1999
Sale Preparation (\$/Mbf)	36	30	18	26	*
Sale Administration (\$/Mbf)	28	18	15	16	*
Brush Disposal (\$/Acre)	132	138	62	73	*
Reforestation, KV & Appropriated (\$/Acre)	712	464	325	292	*
Road Design & Construction (\$/Acre)	387	254	27	127	*
Purchaser Road Construction (\$/Acre)	103	101	119	64	*

* Information was not available at time of this report.

Table 9-1B shows the change in advertised price and the actual high bid value. The advertised price is the minimum acceptable bid. Timber prices peaked during the summer of 1990, dropped off in 1991, climbed steadily through 1992 and 1993, and stayed at high levels in 1994. Prices in 1995 were volatile and generally below 1994 levels. Federal legislation emphasized harvest of salvage timber material in the second half of 1995, which resulted in lower-valued material offered as part of the forest timber program. High bid prices in 1996 through 1999 were generally more stable than the previous year and prices were \$22/MBF lower on average. The difference between advertised prices and the actual bid values can result from many factors such as increased finished product prices, increased competition, reduced costs, and improved harvest technology.

Table 9-1B. Advertised and Actual Average Stumpage Values for Fiscal Years 1990-1999 (\$/MBF).

Year/Quarter	Advertised Price	Actual High Bid	Difference
1989			
1st quarter	\$27.44	\$42.88	\$15.44
2nd quarter	\$36.70	\$96.16	\$59.46
3rd quarter	\$22.59	\$112.02	\$86.43
4th quarter	\$27.09	\$109.34	\$82.25
1990			
3rd quarter	\$46.56	\$180.51	\$133.95
4th quarter	\$48.30	\$102.28	\$53.98
1991			
2nd quarter	\$75.86	\$91.50	\$15.70
3rd quarter	\$75.93	\$128.55	\$52.62
4th quarter	\$97.38	\$105.23	\$7.85
1992			
1st quarter	\$44.85	\$63.43	\$18.58
2nd quarter	\$76.38	\$173.09	\$96.71
3rd quarter	\$116.61	\$274.98	\$158.37
4th quarter	\$168.99	\$221.73	\$52.74
1993			
1st quarter	\$155.52	\$200.87	\$45.37
2nd quarter	\$73.05	\$355.44	\$282.39
3rd quarter	\$230.54	\$230.94	\$0.40
4th quarter	\$314.25	\$390.48	\$76.23
1994			
1st quarter	\$357.88	\$358.75	\$0.87
2nd quarter	\$256.34	\$365.23	\$108.89
3rd quarter	\$400.31	\$445.18	\$44.87
4th quarter	\$194.07	\$194.07	\$0.00
1995			
1st quarter	\$71.50	\$136.17	\$64.67
2nd quarter	\$89.43	\$249.43	\$160.00
3rd quarter	\$82.33	\$88.95	\$6.62
4th quarter	\$208.49	\$234.45	\$25.96
1996			
1st quarter	\$95.15	\$158.47	\$63.32
2nd quarter	\$36.50	\$111.65	\$75.15
3rd quarter	\$48.76	\$103.21	\$54.45
4th quarter	\$63.00	\$199.13	\$136.13
1997			
1st quarter	\$ 63.16	\$173.03	\$107.87
2nd quarter	\$162.43	\$233.50	\$ 71.07
3rd quarter	\$ 63.94	\$122.51	\$ 58.54
4th quarter	\$103.11	\$170.34	\$ 67.23
1998			
1st quarter	\$128.22	\$193.38	\$65.16
2nd quarter	\$132.36	\$138.00	\$ 5.64
3rd quarter	\$0	\$0	\$0
4th quarter	\$0	\$0	\$0
1999			
1st quarter	\$0	\$0	\$0

2nd quarter	\$96.98	\$110.39	\$13.41
3rd quarter	\$45.84	\$132.70	\$86.86
4th quarter	\$0	\$0	\$0

TABLE 9-1C shows a modest increase in delivered log values in the past year for all species. Stumpage values have historically been more volatile than delivered log prices because of increased competition among stumpage purchasers. Stumpage prices merely result from prices paid by mills which process the raw material. Prices for finished products in Table 9-1D show they also increased during the past year. Imported lumber from western Canada continues to have an influence on finished product prices despite the fact that stumpage supplies for local mills has declined significantly since 1992.

Table 9-1C. Delivered Log Values (\$/MBF in 1995 dollars).

Species	1991	1992	1993	1994	1995	1996	1997	1998	1999	Change from 98 to 99
Ponderosa Pine	355	411	602	557	500	491	509	441	475	+8%
Bull Pine	218	267	449	399	300	314	315	297	322	+8%
Lodgepole Pine	247	286	441	433	355	383	392	361	403	+12%
Douglas Fir	246	298	454	430	363	373	379	351	390	+11%
Western Larch	246	302	468	439	365	373	390	357	391	+10%
Englemann Spruce	256	308	472	443	350	392	438	363	394	+9%

Table 9-D. Lumber Price Indices (\$/MBF).

Species	1993	1994	1995	1996	1997	1998	1999	Change from 4th qtr. 98 to 4th qtr. 99
Ponderosa Pine	676	665	602	597	696	574	579	+1%
Douglas Fir/ Larch	417	418	363	415	430	356	393	+10%
White Woods	364	406	338	375	406	350	354	+1%