

ECONOMIC ANALYSIS

INTRODUCTION

The Basin Creek project area is adjacent to the community of Butte and comprises approximately 14,320 acres. Landownership in the project area is National Forest, but there are tracts of private land inholdings. The largest tract of private land is located in the Roosevelt Drive area and consists of approximately 80 private homes. The project is bordered on the south and west by the Continental Divide and on the north by private ownership. The primary features within the project are in addition to private lands are the Basin Creek Inventoried Roadless Area, Basin Creek municipal watershed, and Basin Creek Research Natural Area. The project area has a natural appearance to residents and visitors from several locations around Butte and the Highland Road (FS road #84). The Beaverhead-Deerlodge completed a Social Analysis in 2003 that includes information pertinent to this project.

History

This section describes economic effects using several indicators. These indicators include: jobs created, timber sale viability, volume of timber produced, PNV and benefit/cost ration.

Summary

Alternative 4 generates the most jobs. Alternative 1 (No Action) generates none. Alternatives 2, 3, and 5 would generate timber sales likely to sell. Alternative 4 (which includes extensive long helicopter yarding distances) would generate a timber sale offering which may not sell. Some of the far-lying units of Alternative 4 may have to be dropped from any sale offering to make a viable sale. Alternative 4 would generate the most timber volume, with Alternatives 5, 3, and 2 generating less. All action alternatives produce negative Present Net Values and all have Benefit/Cost Ratios of less than 1.

Estimation of Employment and Income Effects:

We used 1) response coefficients that were developed using IMPLAN and 2) timber volumes harvested and costs associated with all activities. This method provides a report documenting the employment and income effects for each activity of the project. Details are contained in the project file. Activities generating jobs include: Forest Service preparation and administration of timber harvest, slash disposal, and activities necessary to get logs into the mill and to market. It also included FS and contract labor to burn debris. **Table 3.84** is best used as a tool for comparing alternatives rather than a precise estimate of jobs generated.

Table 3.84 Jobs Generated By Alternative

Alternative	Forest Service Jobs	Private Sector Jobs	Total Jobs Generated
1-No Action	0	0	0
2	3	66	69
3	8	184	193
4	14	304	318
5	10	203	213

Alternative 4 is estimated to generate the most jobs, followed in order by Alternatives 5, 3, 2, and 1 (No Action) which does not generate any jobs.

Timber Sale Viability

This timber sale viability indicator helps us estimate whether or not the timber sale portion of each alternative would be purchased. Would the Forest Service be able to sell the timber sale portion or would we have to pay someone to accomplish the work?

We used a program called Project Level Analysis of Treatment Alternatives (PLATA) for this analysis. This program incorporates the techniques and values of the Transactions Evidence Appraisal System. We used another program called HELIPACE to compare helicopter logging costs. Details are contained in the project file.

Alternatives 2, 3, and 5 propose timber sale offerings that would likely sell in today's market. Our appraisal system predicts a positive bid. Alternative 4 is more doubtful. Our planning estimates do show a positive bid value, but the extensive use of helicopter yarding for extremely long distances makes this a doubtful sale. Alternative 4 would have the least chance to sell of all action alternatives.

Table 3.85 PLATA predicted bid price by alternative

Alternative	CCF Harvested	Harvested Acres	Predicted Stumpage Price
1	0	0	0
2	19,550	920	\$56/ccf
3	47,630	2232	\$55/ccf
4	83,703	3939	\$26/ccf *
5	56,758	2671	\$54/ccf

Alternative 4 has very long helicopter yarding distances that make actual feasibility difficult to estimate.

Timber Sale Volume:

Another indicator is how much timber is available for sale. The table above summarizes these amounts.

Benefit/Cost and Present Net Value:

We used PLATA to compare revenue from timber sales versus money spent to prepare the sale for each alternative (discounting at 4 percent). The table below shows that each action alternative had a negative Present Net Value. They all also have a benefit cost ratio of less than 1.

Although several of the alternatives would generate timber sales that bidders would likely buy, the Forest Service would spend more on analysis, sale layout, administration, prescribed burning, and other activities than the timber sale would generate. Alternatives 2, 3, and 5 are similar in benefit costs ratios. Alternative 4 is least efficient per dollar spent.

Table 3.86

Alternative	Present Net Value	Benefit/Cost Ratio
1-No Action	N/A	N/A
2	Negative \$200,900	.83
3	Negative \$527,500	.82
4	Negative \$3,100,000	.39
5	Negative \$660,000	.81

Costs associated with waiting and dealing with fuel reductions after the timber has no value.

We did not have an alternative, or use models to estimate the cost of doing the fuel reduction work without a timber sale. However, we can speculate that cutting and yarding costs could be greatly reduced by merely cutting and grapple piling debris. We might get the job done for approximately \$20/ccf. Under a service contract of course there would be no revenue generated. Using Alternative 4 as an example, that would mean the Forest Service would pay (83,700 ccf X \$20/ccf to yard to landings) = \$1,700,000 gathering /piling cost. At \$40/acre to burn these piles (3939 acres x \$40/ac to burn) = \$157,560 in burning costs. Additional costs such as completing NEPA, spraying weeds after equipment use, administering service contracts, and planting trees in the cleared areas would add another sizeable amount. So a ball park estimate of how much this project would cost if done as a service contract rather than a timber sale is \$2,000,000 or more.

Methods for predicting selling values and benefit/costs:

We used PLATA for comparing alternatives as to their viability and potential bid per CCF. Alternative 4 presented a special situation. The units that are proposed in other alternatives are within normal helicopter skidding distances. Alternative 4 proposes units with yarding distances via helicopter of over 2 miles. This is not usual. It may not be feasible. We calculated average of timber volume weighted by distance yarded and found the average weighted yarding distance in the helicopter-yarded material in Alternative 4 is 1 mile.

Our next question was, "Is this a reasonable proposal?". We talked to Mike Niccolucci (economist USFS). We reviewed the data set that was used for the Beaverhead-Deerlodge Transaction Evidence Appraisal equation. (This is the same formula used in PLATA to predict stumpage values). Mike's data set included four helicopter sales on the Beaverhead-Deerlodge. These are sold sales. The longest helicopter yarding distance in that data set was approximately 3,400 feet.

The rest were shorter. The means the distances proposed for yarding in Alternative 4 are outside the date range of sold sales for the TE appraisal system used in the Forest. Our proposal does not fit in the data set available to predict selling values from PLATA. So while we continued to use PLATA as a comparison tool, we realized that we needed some method to reflect the differences of our situation from the normal yarding distances in PLATA's data set.

We called Don McKinnon (Region 1, measurement specialist). Don directed us to a website from which we downloaded a program called HELIPACE. This is used to estimate production costs using helicopters. We used that program to compare a typical production cost with average skid of 2,500 feet versus average skid of 5,280 feet, all other factors being equal. Don suggested this would be one way of determining an "unusual condition" adjustment for Alternative 4. HELIPACE showed a difference in costs of \$15/ccf. This is the amount we used back in PLATA for "unusual condition adjustment". (We did run another one comparing 1,000 foot yarding versus 5,280 with much greater differences in production costs). We applied the \$15/ccf across all the volume, even that not helicopter yarded. This seemed reasonable since some of the helicopter units were over 2.5 miles from a landing spot.

In PLATA we accepted default costs for planning and sale activities (spraying, sale prep, administration, etc), except we did adjust planting costs from a default of \$250/ac to \$400/acre. This is based on experienced costs for our forest.

Inputs into PLATA for number of ccf harvested, planting necessary, and so on came from Bob Johns. Bob supplied the following figures.

Table 3.87

Alternative	Total ccf harvested	Total acres harvested	Ccf helicopter	Ccf tractor	Miles temp road**
1- no action	0	0	0	0	0
2	19,550	920	1,934	17,616	8
3	47,630	2,232	5,695	41,735	17
4	83,703	3,939	23,651*	60,052	17
5	56,758	2,671	7,246	49,512	17

* An "unusual condition adjustment" for Alternative 4 helicopter yarding of \$15/cc was added.

** Temp roads were estimated to cost \$7,000/mile to build and rehab.

Table 3.88 The following activities also were added to each alternative:

Alternative	Planting	RX burn	Spray weeds
1	0	0	0
2	40 acres	454 acres	110 acres
3	123 acres	1020 acres	254 acres
4	276 acres	1147 acres	427 acres
5	155 acres	1119 acres	301 acres