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REDD BULL

Environmental Assessment

Superior Ranger District, Lolo National Forest
Mineral County, Montana

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Under Alternative 3, recurrent maintenance on NFSR 3848 would be more costly than typical forest roads due to the relatively steep grades that naturally develop more erosion and wash-boarding. More frequent blading would be required to maintain the level of driver comfort currently provided by the existing NFSR 221 route.

Based on experience with similar treatments elsewhere on the Forest, the surface hardening on the 2.5 segment of NFSR 221 would remain effective for several years, but would eventually require maintenance. The low traffic volume and speed on the road would help extend the longevity of the treatment.

Forest Plan Consistency

Alternatives 2, 3, and 4 are consistent with the Lolo Forest Plan. A project-specific travel analysis was conducted to ensure roads within the project area would be the minimum number and meet the design standards to provide for safety and to meet user and resource needs (Forest-wide standard 49, page II-17). Roads within the project area would be managed to provide for resource protection, wildlife needs, commodity removal, and a wide range of recreation opportunities (Forest-wide standard 52, page II-18).

3.9 Economics

Three factors were considered in the economic analysis: project feasibility which addresses only the timber harvest component of this project; financial efficiency, which addresses present net value (PNV) or the net monetary costs and benefits of the project; and economic impacts, which are the effects of this project on local jobs and labor income.

Project feasibility is used to determine if the timber harvest would be feasible, that is, would it sell, given current market conditions. The determination of feasibility relies on a residual value analysis (price of the timber = revenues – costs) that uses local delivered log prices and stump-to-mill costs. The appraised stumpage rate from this analysis is compared to the base (minimum) rate. The project is considered feasible if the appraised stumpage rate exceeds the base rate.

Financial efficiency provides information relevant to the future financial position of the government as the project is implemented. Financial efficiency considers anticipated Forest Service costs and revenues. PNV is the difference between the present value of the revenues and present value of the costs. PNV converts costs and revenues over the entire time frame of the project into a single figure for a selected year. A positive PNV means that the project would generate more financial revenues than financial costs. The NEPA planning is a sunk cost at the time of the decision and is not included in the PNV analysis.

Financial efficiency analysis is not intended to be a comprehensive analysis that incorporates monetary expressions of all known market and non-market benefits and costs. Many of the values associated with natural resource management are best handled apart from, but in conjunction with, a more limited financial efficiency framework. These non-market benefits and costs associated with the project are discussed throughout the various resource sections of this EA.

Economic impacts are used to evaluate potential direct, indirect, and cumulative effects of the project on the economy. They are measured by estimating the direct jobs and labor income generated by 1) the processing of the timber volume from the project and 2) Forest Service expenditures for contracted other activities. The direct economic and labor income benefit employees and their families and, therefore, directly affect the local economy. Additional indirect and induced multiplier effects (ripple effects) are generated by the direct activities. Indirect effects are felt by the producers of materials

used by the directly affected industries. Induced effects occur when employees of the directly and indirectly affected industries spend the wages they receive. Together the direct and multiplier effects comprise the total economic impacts to the local economy.

Economic impacts are estimated using input-output analysis, which is a means of examining relationships within an economy, both between businesses and between businesses and final consumers. It captures all monetary market transactions for consumption in a given time period. The resulting mathematical representation allows one to examine the effect of a change in one or several economic activities on an entire economy, all else constant. The model used for this analysis is the 2017 IMPLAN data in conjunction with response coefficients that relate timber harvest quantity to direct jobs and income (Sorenson et al. 2016). IMPLAN translates changes in final demand for goods and services into resulting changes in economic effects, such as labor income and employment of the affected area's economy.

Data used to estimate the direct effects from the timber harvesting and processing were provided by the University of Montana's Bureau of Business and Economic Research (BBER) (Sorenson et al. 2016). This national dataset is broken into multi-state regions and is considered more accurate than that which is available from IMPLAN. The Northern Rockies BBER Region (Montana and Idaho) is used for this analysis. The BBER data represents the results of mill censuses that correlate production, employment, and labor income. The economic impact area for this analysis consists of Mineral and Sanders Counties. Potential limitations of these estimates are the time lag in IMPLAN and the uncertainty of where the timber will ultimately be processed. The analysis assumes the harvested timber volume would be processed in the Mineral and Sanders County impact area. However, if some of the timber were processed outside the region, then a portion of the jobs and income would be lost by this regional economy.

Table 3.9-1 Project Feasibility and Financial Efficiency Summary (2018 dollars)

Category	Measure	Alternative 2	Alternative 3	Alternative 4
Timber Harvest Information	Acres Harvested*	13,136	10,701	12,514
	Volume Harvested* (CCF)	223,329	181,917	212,755
	Base Rates ($/CCF)	$17.35	$20.12	$19.54
	Appraised Stumpage Rate ($/CCF)	$19.17	$17.74	$19.89
	Predicted High Bid ($/CCF)	$24.82	$23.39	$25.54
	Total Revenue	$5,542,000	$4,255,000	$5,434,000
Timber Harvest & Required Design Criteria	PNV	$412,000	$109,000	$527,000
Timber Harvest & All Other Resource Activities	PNV	-$8,906,000	-$8,638,000	-$8,627,000

* Volume and acres are estimations
CCF= hundred cubic feet

Table 3.9-2: Total Employment and Labor Income over the Life of the Project*

Non-Timber Harvest-related Activities	Alternative 2		Alternative 3		Alternative 4	
Part and Full Time Jobs Contributed	**Total**	**Annual**	**Total**	**Annual**	**Total**	**Annual**
Direct	63	6	64	6	70	7
Indirect and Induced	35	4	35	3	37	4
Total	98	10	99	9	106	11
Labor Income Contributed ($)						
Direct	$3,623,000	$362,000	$3,592,000	$359,000	$3,802,000	$380,000
Indirect and Induced	$1,215,000	$121,000	$1,199,000	$120,000	$1,265,000	$126,000
Total	$4,838,000	$484,000	$4,791,000	$479,000	$5,067,000	$507,000
Timber Harvest and Processing	**Alternative 2**		**Alternative 3**		**Alternative 4**	
Part and Full Time Jobs Contributed	**Total**	**Annual**	**Total**	**Annual**	**Total**	**Annual**
Direct	569	81	464	66	543	78
Indirect and Induced	794	113	646	92	756	108
Total	1,363	195	1,110	159	1,299	186
Labor Income Contributed ($)						
Direct	$28,273,000	$4,039,000	$23,030,000	$3,290,000	$26,934,000	$3,848,000
Indirect and Induced	$29,855,000	$4,265,000	$24,319,000	$3,474,000	$28,442,000	$4,063,000
Total	$58,128,000	$8,304,000	$47,349,000	$6,764,000	$55,376,000	$7,911,000
All Activities	**Alternative 2**		**Alternative 3**		**Alternative 3**	
Part and Full Time Jobs Contributed	**Total**	**Annual**	**Total**	**Annual**	**Total**	**Annual**
Direct	632	88	528	73	612	84
Indirect and Induced	829	117	681	96	793	112
Total	1,461	205	1,209	169	1,405	196
Labor Income Contributed ($)						
Direct	$31,896,000	$4,401,000	$26,622,000	$3,649,000	$30,737,000	$4,228,000
Indirect and Induced	$31,070,000	$4,386,000	$25,518,000	$3,594,000	$29,706,000	$4,190,000
Total	$62,966,000	$8,788,000	$52,141,000	$7,243,000	$60,443,000	$8,418,000

* It is important to note that these may not be new jobs or income, but rather jobs and income supported by this project.

Part and Full Time Jobs Contributed is the total full and part-time wage, salaried, and self-employed jobs contributed to the economic impact area from the change in final demand associated with this project.

Labor Income Contributed includes the wages, salaries and benefits of workers who are paid by employers and income paid to proprietors in the economic impact area from the change in final demand associated with this project.

Direct effects represent the impacts for the expenditures and/or production values specified as direct final demand changes.
Indirect effects represent the impacts caused by the iteration of industries purchasing from industries resulting from direct final demand changes.
Induced effects represent the impacts of all local industries caused by the expenditures of new household income generated by the direct and indirect effects of final demand changes.
Total effects are the sum of direct, indirect, and induced effects.

Alternative 1: Direct, Indirect, and Cumulative Effects

Under Alternative 1, no activities would occur. Thus, the public would incur no costs or realize any benefits of improved forest health, watershed, and wildlife habitat, reduced fuels, and recreation improvements in this area. Alternative 1 would yield a present net value of $0. However, there would be no return on the planning costs that have already been incurred.

Alternative 1 would support no direct, indirect, or induced employment, and no labor income contribution to local economies. This alternative has the potential to contribute to the decline of timber-related employment in the rural communities of the economic impact area. Decline in timber harvest from NFS lands could potentially impact wood product employment and associated indirect and induced employment.

Alternatives 2, 3, and 4: Direct and Indirect Effects

Project Feasibility
The appraised stumpage rate from the feasibility analysis was compared to base rates. As displayed in Table 3.9-1, the appraised stumpage rate for Alternatives 2 and 4 is greater than the base rate, indicating that these alternatives are feasible (likely to sell). However, for Alternative 3, the appraised stumpage is less than the base rates, indicating this alternative is not feasible under the given cost and revenue estimates. In Alternative 3, the timber volume to be harvested isn't sufficient enough to generate the revenue to pay for the post-harvest activities such as site preparation burning and planting. The costs of post-harvest activities and roads would need to be reduced and/or the timber volume would need to be increased in order for Alternative 3 to become feasible.

Financial Efficiency
The financial efficiency analysis is specific to the timber harvest and other activities (as directed in Forest Service Manual 2400-Timber Management and guidance found in Forest Service Handbook 2409.18). Costs for sale preparation, sale administration, regeneration, and vegetation restoration activities are included. If exact costs were not known, the maximum of the cost range was used to produce the most conservative PNV result. If actual costs are lower, all else equal, PNV would be higher than the estimates in Table 3.9-1. The expected revenue for the project is the corresponding predicted high bid from the sale feasibility analysis. The predicted high bid is used for the expected revenue (rather than the appraised stumpage rate) since the predicted high bid is the best estimate of the high bid resulting from the timber sale auction.

Because not all costs of the project are related to the timber sale, two PNVs were calculated. One PNV indicates the financial efficiency of the alternatives, including all costs and revenues associated with the timber harvest and required design criteria. A second PNV includes all costs for the alternatives with the required design criteria and for the timber harvest and all other resource activities (e.g., non-commercial thinning, prescribed burning, watershed and recreation improvements).

Results shown in Table 3.9-1 indicate that all action alternatives are financially efficient (positive PNV) for the timber harvest with designed criteria. However, they are financially inefficient (negative PNV) when the other resource activities are added to the timber harvest.

The Responsible Official takes many factors into account in making the decision. When evaluating trade-offs, the use of efficiency measures is just one factor that is considered.

Economic Impacts
Alternatives 2, 3, and 4 would support existing jobs through timber harvest-related and other non-commercial activities. Table 3.9-2 displays the direct, indirect and induced, and total estimates for employment (part and full-time) and labor income that may be attributed to the project. Alternative 2 would produce the most jobs and labor income, followed by Alternatives 4 and 3 (Table 3.9-2). The majority of jobs and labor income would stem from the vegetative treatments that yield timber products. Since the expenditures would occur over time, the estimated impacts of jobs and labor income would be spread out over the life of the project. It is important to note that these may not be new jobs or income, but rather jobs and income that are supported by this project.

Cumulative Effects

Management of the Lolo National Forest has an impact on the economies of local counties. However, there are many additional factors that influence and affect the local economies, including changes to industry technologies, management of adjacent National Forests and private lands, economic growth and international trade. The project would provide a variety of opportunities for contracts that may contribute to the local economy and have the potential to attract new business and residents and retain existing businesses and residents.

In addition, there are other foreseeable future Forest Service projects within Mineral County and counties closest to the project area that are in various stages of planning that potentially may add to the Forest's annual timber offerings during the time of implementation of the project. These ongoing and foreseeable projects are expected to add cumulatively to the employment and income of the economic impact area within the life of the Redd Bull project.

Forest Plan Consistency

Consistent with the Forest Plan, an economic analysis has been completed that includes the probable marketability (i.e. economic feasibility) of the commercial timber harvest portion of the project (Forest-wide standard 11, Forest Plan page II-11). The project also contributes to one of the Forest Plan's goals to provide a sustained yield of timber and other outputs at a level that will help to support the economic structure of local communities (Forest Plan, page II-1).

3.10 Roadless

Approximately 21,182 acres (26 percent) of NFS land in the Redd Bull project area overlaps 3 inventoried roadless areas (IRAs) (see maps in Appendix A):

- Marble Point (12,607 acres). Redd Bull includes the entire IRA.
- Ward Eagle (4,843 acres). Redd Bull overlaps about 57 percent of the 8,570-acre IRA.
- Sheep Mountain-Stateline (3,732 acres). Redd Bull overlaps approximately 6 percent of the 67,479-acre IRA.

The Wilderness Act of 1964 created the National Wilderness Preservation System. In addition to designating nine million acres of NFS land as wilderness, the Act directed the Secretary of Agriculture to complete a study of 34 administratively designated 'primitive areas' and determine their suitability for wilderness designation.