
**EDDY GULCH LATE-SUCCESSIONAL RESERVE
FUELS / HABITAT PROTECTION PROJECT**

ECONOMIC ANALYSIS

Prepared by Michael J. Mateyka

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Economic Analysis

1.1 Introduction

The purpose of this report is to compare the economic factors and values associated with the alternatives considered in the Eddy Gulch Late-Successional Reserve (LSR) Fire / Habitat Protection Project environmental impact statement (EIS).

The analysis performed for the alternatives dealt with monetary values that are normally associated with a timber sale. This project is proposing to use timber harvest as one tool to meet the objectives identified in the EIS and so the economic impacts can be quantified in terms of costs and values associated with harvesting timber. A prediction of revenues and costs, even for short periods into the future, is speculative.

1.1.1 Project Location

The Eddy Gulch LSR Project Assessment Area is located on the Salmon River and Scott River Ranger Districts, Klamath National Forest, in southwestern Siskiyou County. The LSR is located mostly west of Etna Summit, south of North Russian Creek and the town of Sawyers Bar, east of Forks of Salmon, and north of Cecilville. The LSR is about 61,900 acres in size, making it one of the largest LSRs on the Klamath National Forest. The LSR encompasses much of the area between the North and South Forks of the Salmon River, as well as headwaters of Etna Creek. Elevations range from 1,100 feet to about 8,000 feet. The terrain is generally steep and dissected by sharp ridges and streams. There are a few private inholdings in the LSR and along the main Salmon River and other stream corridors adjacent to the LSR.

The legal description for the Eddy Gulch LSR includes the following (all Mount Diablo Meridian):

T38N, R11W, Sections 2–5, 8–10, and 17–19
T38N, R12W, Sections 1–3, 9–16, and 22–24
T39N, R10W, Sections 2–10, 15–21, and 29–31
T39N, R11W, Sections 1–18, 20–29, and 32–36
T39N, R12W, Sections 11–14, 23–25, and 36
T40N, R10W, Sections 3–5, 8–11, and 13–35
T40N, R11W, Sections 24–27 and 34–36
T41N, R10W, Sections 2–5, 8–17, 20–24, 26–29, and 31–34
T42N, R10W, Sections 28–29 and 32–35

1.1.2 Terms

Eddy Gulch LSR—the entire 61,900-acre LSR.

Assessment Area — the 37,239-acre portion of the Eddy Gulch LSR west of Etna Summit where various treatments are proposed. All released roadless areas that occur in the LSR were excluded from planning efforts and are therefore not part of the Assessment Area.

Treatment Unit — the acres proposed for some type of on-the-ground treatment under a particular alternative.

Analysis Area — the area around treatment units considered in the effects analysis (the analysis area may be larger than the LSR Assessment Area). The analysis area varies by resource.

1.2 Summary of the Alternatives

Chapter 2 in the EIS for the Eddy Gulch LSR Project presents more information about the three alternatives, and Appendix A contains the project maps.

1.2.1 Alternative A: No Action

The no-action alternative is described as continuation of the current level of management and public use—this includes road maintenance, dispersed recreation (hunting, fishing, camping, and hiking), mining, watershed restoration projects, and the modeled wildfire. The time frame for analysis is considered to be 20 years. Given the fuel hazard in the Eddy Gulch LSR and current predictions of climate change, it is assumed at least one wildfire will escape initial attack during the 20-year period and burn under 90th percentile weather conditions (defined as 10 percent of the days in the historical weather database that had lower fuel moisture and higher wind speeds compared to the rest of the days). An analysis of a wildfire for three days that escaped initial attack in the Eddy Gulch LSR Project Assessment Area indicates that fire would burn 7,200 acres. Of those 7,200 acres, 1,355 acres (19 percent) would be surface fire; 5,065 acres (70 percent) would be a passive crown fire; and 780 acres (11 percent) would be an active crown fire.

1.2.2 Alternative B: Proposed Action

The Klamath National Forest proposes 25,969 acres of treatments to protect late-successional habitat and communities. Three primary treatment types were identified in the Assessment Area: Fuel Reduction Zones (FRZs), Prescribed Burn Units (Rx Units), and Roadside (RS) treatments along emergency access routes, which are described below.

- **FRZs**—strategically located on ridgetops to increase resistance to the spread of wildfires. The FRZs would be wide enough to capture most short-range spot fires, and ground, ladder, and crown fuels would be reduced so as to change crown fires to surface fires within the treated areas. The FRZs would provide safe locations for fire-suppression personnel to take fire-suppression actions during 90th percentile weather conditions, and they serve as anchor points for additional landscape-level fuel treatments, such as underburning.
 - **Proposed Action.** Construct 16 FRZs totaling 8,291 acres to increase resistance to wildfires. The 8,291 acres includes 931 acres in 42 M Units (thinning units) and 7,383 acres in fuel reduction areas (outside the M Units) to reduce ground and ladder fuels.

- **Rx Units**—a series of landscape-level treatments (ranging from 250 to 4,300 acres in size) designed to increase resilience to wildfires by reducing ground and ladder fuels. Most of these treatments would occur on south-facing aspects where fuels dry faster, and treatments would support the role of the FRZs.
 - **Proposed Action. Implement** 17,524 acres of Rx Units to increase resiliency to wildfires.
- **RS treatments**—along 60 miles of emergency access routes identified in the Salmon River Community Wildfire Protection Plan (CWPP) (SRFSC 2007) and designed to facilitate emergency access for residents to evacuate and for suppression forces to safely enter the LSR in the event of a wildfire.
 - **Proposed Action.** Treat 44 miles of emergency access routes in FRZs and Rx Units (treatments would be similar to the FRZ or Rx Unit the route passes through) and 16 miles (with 154 acres of treatments) of RS treatments outside of FRZs and Rx Units—a total of 60 miles of RS treatments along emergency access routes.

1.2.2.1 Summary of Road Treatments under the Proposed Action

Construction of new temporary roads and use of former logging access routes are proposed to facilitate access to treatment units.

- Approximately 1.03 miles (5,433 feet) of new temporary roads would be used to access all or portions of seven M Units. These roads are described as “New Temporary Road” in Table 1. All of these temporary roads would be closed (ripped and mulched, as needed) following thinning.
- Approximately 0.98 mile (5,177 feet) of former logging access routes would be re-opened (vegetation removed and bladed) to access all or portions of five M Units. These routes, described as “Former Logging Access Route” in Table 1, would be water-barred and closed immediately after logging thinning is completed.
- Five spurs, each less than 100 feet long, would be bladed for tractor or cable yarding operations in two units.
- Existing landings would be used to the extent possible. The core Interdisciplinary (ID) Team considered using whole-tree yarding to reduce slash treatments; however, it would require larger landings and was therefore not considered further.

Table 1. Proposed new temporary roads, former logging access route updates, and operational spurs.

Location	Length (feet)	Access For	Description
Intersection 39N53	1,577	M Unit 15 (Cable)	New Temporary Road
Intersection 39N20	550	M Unit 17	New Temporary Road
Intersection 39N73	1,074	M Unit 21 (Cable)	New Temporary Road
Intersection FS39	605	M Unit 24	New Temporary Road
Intersection 39N58B	617	M Unit 36	New Temporary Road
Intersection 39N53A	560	M Unit 37	New Temporary Road
Intersection 39N37A	450	M Unit 75	New Temporary Road
Intersection 39N23	1,123	M Unit 9	Former Logging Access Route
Intersection 39N53	1,381	M Unit 15 (Tractor)	Former Logging Access Route
Intersection 39N58	519	M Unit 25	Former Logging Access Route
Intersection 39N04 – Lafayette Pt.	2,154	M Units 43 and 8	Former Logging Access Route
Intersection FS39A	240	M Unit 23	Four Logging Spurs at 60 Feet Each—Operations
Intersection 39N04A	100	M Unit 39	Short Logging Spur – Operations

1.2.2.2 Proposed Haul Roads and Drafting Sites

Haul Roads. There are five basic routes that would be used to haul products out of the Assessment Area following thinning; all of these routes have been used in the past and are suitable for use with this project:

- **2E001 (Sawyers Bar).** The route connects to County Road 1C01 with haul to Etna and Highway 3 to Yreka.
- **40N61 (Whites Gulch Rd).** The route connects to County Road 1C01 with haul to Etna and Highway 3 to Yreka.
- **FS39.** The route connects with County Road 1C02 with haul to Callahan and Highway 3 to Yreka.
- **39N20.** The route connects with County Road 1C02 at Shadow Creek with haul to Callahan and Highway 3 to Yreka.
- **39N23.** The route connects with County Road 1C02 at Cecilville with haul to Callahan and Highway 3 to Yreka.

1.2.2.3 Drafting Sites

Prior to and during haul, a portion of the road maintenance needs will be dust abatement. Water drafting sites for dust abatement will occur at designated sites for that purpose—existing drafting sites and access routes will be used. No vegetation removal will be allowed at drafting sites with the exception of vegetation trimming done in such a way that existing vegetation and associated root strength along stream banks and access routes are maintained.

1.2.3 Alternative C: No New Temporary Roads Constructed

Alternative C responds to public concerns regarding the environmental and economic effects of constructing new temporary roads. Alternative C is similar to the Proposed Action but approximately 1.03 miles (5,443 feet) of new temporary roads identified in the Proposed Action would not be constructed. As a result, no fuels treatments would occur in portions of seven M Units. This reduces the total acres of treatments in M Units from 931 acres under Alternative B to 832 acres in Alternative C. Fuels treatments could not be carried out in those M Units because of excessive treatment costs, high existing dead crown fuel loadings, and potential heat damage to the overstory if these untreated units were prescribed burned.

Under Alternative C, the FRZs would continue to total 8,291 acres; however, 99 acres in M Units would remain untreated. The total number of acres treated by tractor yarding would remain at 361 acres; however, the acres of cable yarding would be reduced from 570 acres under Alternative B to 471 acres under Alternative C. Reducing acres of M Units treated would also reduce the number of acres treated in two Rx Units because excessive fuels remaining in M Units would preclude safely burning portions of the two Rx Units. Six-foot-wide control lines would be constructed around the perimeter of those untreated areas to keep prescribed burns out of those portions of Rx Units. There would be no changes in the miles of emergency access routes treated, transportation plan, or Resource Protection Measures (RPMs).

1.3 Significant Issue

Public and agency comments received during collaboration and scoping efforts did not identify any significant issues related to forest vegetation. The only significant issue was in regard to construction of new temporary roads to access some of the treatment units. Alternative C was developed in response to public concerns regarding the environmental and economic impacts of constructing new temporary roads.

1.4 Regulatory Framework

The *Multiple Use-Sustained Yield Act of 1960*, the *Forest and Rangeland Renewable Resources Planning Act of 1974*, and the *National Forest Management Act of 1976* direct the National Forests to supply goods and services and be managed for a broad array of resources. Consistent with these guiding laws, the land allocations and management direction for the Forest were established in the Klamath National Forest Land and Resource Management Plan (Klamath LRMP) 5 (USFS 1995).

1.5 Methodology

1.5.1 Analysis Methods and Assumptions

The primary objective of this analysis was to calculate a residual value, also known as a stumpage value for this project. This monetary value is derived by subtracting the costs associated with the timber harvest from the value of the timber as it would be sold to a mill. The costs being considered in this report are generated by the different logging systems being proposed, the various fuel

treatments associated with each unit, and the construction and decommissioning of temporary spur roads.

The data for this section was gathered from Siskiyou County records (SC 2008) and U.S. Census Bureau (USCB 2005). The economic analysis focuses on those revenues and treatment costs associated with implementing thinning treatments and other fuel reduction treatments in the Eddy Gulch LSR Project Assessment Area. The purpose of the economic analysis is to present the current economic conditions in Siskiyou County and the potential or avoided revenues and costs associated with each of the alternatives for comparison purposes. The analysis does not include monetary values assigned to resource outputs such as wildlife, watersheds, soils, recreation, visual quality, and fisheries. It is intended only as a relative measure of differences between alternatives based on the direct costs and values used.

The residual value method was done using the software created by the Region 6 Timber Sale Marketing Analysis and Sale Evaluation Study prepared by Steve Rheinberger and Gerald Smith of Forest Resource Enterprises. Logging costs were calculated using the LogCost program also created by Rheinberger. Logging costs were developed using the units as they are found in the Proposed Action. Volumes and species being removed were estimated by output from the Forest Vegetation Simulator Program using the proposed silvicultural treatments. Values for the timber being removed were gathered from Oregon Department of Forestry Log Price Information Report for August of 2008 in the Klamath Unit. Fire suppression costs are based on a suppression scenario and recent suppression costs.

Important influences on residual values for this project were logging systems and fuels treatments. Table 2 shows the respective costs used for different logging systems and fuels treatments. Logging systems depend on topographic limitations and access. Fuels treatments vary between units being proposed and were determined by the fuels specialist on the project. Units proposed for skyline yarding would be treated by prescribed burning, after having slash lopped and scattered. Tractor units would be piled using an excavator with grapples, and the piles would be burned. The most expensive fuels treatment is the grapple piling and burning.

Table 2. Summary of value and cost centers for the Eddy LSR Project.

	Alternative A: No-Action Alternative	Alternative B: Proposed Action	Alternative C: No New Temporary Roads Constructed
Area Treated (Acres)	0	931	832
Tractor Volume (MBF)*	0	4,239	4,052
Skyline Volume (MBF)	0	6,548	5,593
Total Volume (MBF)	0	10,787	9,645
Total Value (\$)	0	1,286,301	1,168,909
Stump to Truck Cost – Tractor (\$/MBF)	N/A	159.59	159.00
Stump to Truck Cost – Skyline (\$/MBF)	N/A	250.88	251.56
Average Stump to Truck Cost (\$/MBF)	N/A	215.00	212.67
Average Haul Cost (\$/MBF)	N/A	112.34	112.34
Cost for Grapple Piling and Burning (\$/Acre)	N/A	600.00	600.00
Cost for Lop, Scatter and Underburning (\$/A)	N/A	350.00	350.00
Average Cost for Fuel Treatment (\$/MBF)	N/A	47.61	48.47

Net Present Value (\$)		1,196,059	1,086,903
Jobs Created		108	96

Note: *MBF = thousand board feet.

As both logging costs and fuels treatments costs increase, residual value decreases. A project with a positive residual value may be able to pay for fuel treatments without depending on additional appropriated dollars. With the logging systems and fuel treatments being proposed for this project, despite the small diameter and lower value product being removed, it appears additional funding will not be needed for the removal units.

In addition to residual value, this report estimates the total number of jobs that would be created under each alternative: no action, Proposed Action, and the proposed action with no new temporary roads constructed. The number of jobs that would be generated is an indicator that addresses specific concerns about effects on the local timber dependent communities within the region. Appendix H in the Klamath LRMP provides estimates of employment provided by timber harvest. The figures are based on models which are more accurate at a statewide level than the local area, but they are what were used. The models estimate between 10 and 20 jobs would be created directly or indirectly for each million board feet (MMBF) of timber harvested. This analysis will use the lower estimate of 10 jobs per MMBF.

1.5.1.1 Scope of the Analysis

Analysis Area. The Klamath National Forest is contained in Siskiyou County, California, and a small portion of Jackson County, Oregon. Siskiyou County, the Salmon River subbasin, and Eddy Gulch LSR Project Assessment Area make up the analysis area for socioeconomic resources. The Eddy Gulch LSR Project Assessment Area is contained entirely with Siskiyou County. The Eddy Gulch LSR is approximately 61,900 acres, and the Eddy Gulch LSR Project Assessment Area is the 37,239-acre portion of the Eddy Gulch LSR west of Etna Summit where various treatments are proposed. All roadless areas that occur in the LSR were excluded from planning efforts and are therefore not part of the Assessment Area.

Analysis Period. Short-term effects are those occurring from actions in the immediate future (0–3 years). Long-term effects are those occurring over several seasons (3 years and beyond).

1.6 Reasonably Foreseeable Future Projects in the Vicinity of the Eddy Gulch LSR Project

The Klamath National Forest Schedule of Proposed Actions was reviewed to identify current and reasonably foreseeable projects on the Salmon River and Scott River Ranger Districts that should be included in the cumulative effects analysis for the Eddy Gulch LSR Project. Ongoing projects include annual road maintenance, improvements to existing mining claims, hiking, and appropriate responses for fire suppression. Additional future projects include the following:

- Installing telephone and fiber-optic lines through the Ranger District (this involves digging a trench adjacent to roads to bury the lines and installing access points for future maintenance activities).
- North Forks Road Maintenance (this involves storm proofing 76 miles of road requiring blading, improving road drainage, and protecting riparian and stream systems; decommissioning 36 miles of roads to reduce sediment delivery to streams; and adding 2.4 miles of existing road).
- Construction of a fuelbreak system west of Black Bear Ranch (approximately 700 acres of ridgetop fuel reduction).
- A small amount of projects on private lands have been funded under the Salmon River CWPP. This includes funding to treat 75 acres of fuels on private properties in and around the Eddy Gulch LSR Project Assessment Area in the next 18 months. There may be funding for at least 50 acres in the following 18 months.

1.7 Affected Environment (Existing Conditions): Economics

1.7.1.1 Summary of Siskiyou County Economic Statistics

Tables 3, 4, and 5 provide an overview of the employment statistics for Siskiyou County. It is important to understand the current (or the most recent data available) information in order to compare these conditions with the potential effects of implementing the Eddy Gulch LSR Project.

1.7.1.2 Contributions of the Klamath National Forest

The Klamath National Forest contributes to the regional economy in two primary ways: (1) through the generation of income and employment opportunities for residents of the immediate area, and (2) through direct and indirect contributions to local county revenues. The Forest also contributes in secondary ways, such as through production of goods and services in local and regional markets. Although some economic effects are dispersed over a broad area, the most substantial impacts are felt locally in Siskiyou County, California, and Jackson County, Oregon.

Table 3. Siskiyou County industry employment for 2005 and projected for 2010.

Industry	Employment 2005	Employment 2010
Agriculture and Mining	2,800	3,000
Construction	1,100	1,100
Manufacturing	1,400	1,200
Transportation, Public Utilities	1,100	1,000
Wholesale Trade	500	500
Retail Trade	4,600	4,900
Finance, Insurance, Real Estate	1,200	1,200
Services	6,900	7,500
Government and Public Administration	4,400	4,600

Source: <http://www.co.siskiyou.ca.us/website/statistics.htm> (SC 2008).

Table 4. Siskiyou County employment and labor force for 2005 and projected for 2010.

Year	Employment	Annual Change (percent)
Siskiyou County Employment^a		
2005(p)	17,300	1.0%
2010(p)	18,000	0.8%
Siskiyou County Labor Force^b		
2005	19,800	1.0%
2010	20,700	0.9%

Source: <http://www.co.siskiyou.ca.us/website/statistics.htm> (SC 2008).

Notes:

a. *Siskiyou County Employment*—Employment is the number of people with a full or part-time job. Employment in this chart does not include public sector employment, but does include proprietors. Employment is based upon place of residence; it is the estimated number of persons employed who reside in the county regardless of where they work.

b. *Siskiyou County Labor Force*—Labor Force is the sum of employment and unemployment, excluding people in the armed forces. The figure includes people working in the private and public sectors, people who are unemployed but actively seeking work, and laid off workers who are waiting to be called back to work.

Table 5. Siskiyou County unemployment, 1995–1999.

Year	Unemployment	Annual Change (percent)	Unemployment Rate
1995	2,730	0.37%	14.37%
1996	2,510	-8.1%	13.5%
1997	2,240	-10.8%	12.10%
1998	2,320	3.6%	12.6%
1999	1,830	-21.1%	10.3%

Source: <http://www.co.siskiyou.ca.us/website/statistics.htm> (SC 2008).

Note: *Siskiyou County Unemployment*—Unemployment includes people who are not employed but actively seeking work, and people who have been laid off and are waiting to get called back to work. The unemployment rate is the total number of unemployed persons divided by the total labor force. It is the percentage of the labor force that is not working.

1.8 Environmental Consequences

1.8.1.1 Economic Analysis

The analysis deals with monetary values that are normally associated with vegetation treatments. The Eddy Gulch LSR Project is quantified in terms of costs and values associated with costs and revenue associated with removing commercial products, costs of treating non-commercial forest products, suppression costs, and revegetation costs following a wildfire.

In addition to residual value, this report gives an estimate of the total number of jobs that would be created for each action alternative. The number of jobs that would be generated is an indicator that addresses specific concerns about effects on the local timber-dependent communities within the region. Appendix H in the Klamath LRMP provides estimates of employment provided by timber harvest. The figures are based on models that are more accurate at a statewide level than the local

area, but they are what have been used. The models estimate between 10 and 20 jobs created directly or indirectly for each MMBF of timber harvested. The economic analysis uses the lower estimate of 10 jobs per MMBF.

1.8.1.2 Alternative A: No Action

Effects. Timber or biomass from the Assessment Area would not be available to regional markets, and demands will be satisfied by other domestic or foreign sources. Contract work from awarded timber sales, stewardship contracts, road contracts, and survey work would not be realized. Conversely, there would be no costs associated with hazardous fuels reduction and no funding for fuel reduction work proposed throughout the Assessment Area.

The calculated value of benefits is related to the value of timber that would be lost if the 7,200-acre wildfire modeled for Alternative A were to occur. For this analysis, the volume of timber killed in the 7,200 acres was calculated using the 1995 Timber Type Inventory, volumes from stand examination data processed using Forest Vegetation Simulator, and values calculated for the harvest units. The estimated volume lost would be 1,005,400 thousand board feet (MBF), with a current value of \$119.18 per MBF. Thus, the total value of lost timber would be \$12,828,450. The discounted value would be \$11,449,759.

1.8.1.3 Alternative B: Proposed Action

Alternative B would result in a positive residual value and would provide for jobs and the production of wood commodities, which would produce beneficial economic effects on local communities and Siskiyou County. Additionally, Alternative B would provide for jobs and the production of wood commodities, which would have economic benefits for the surrounding communities.

Direct and Indirect Effects: Mechanical Thinning of M Units. Alternative B would harvest the most timber—over 931 acres. The positive residual value from thinning would be approximately \$1,286,301. With an estimated volume of 10.8 MMBF, this alternative could potentially create 108 jobs. It would also provide the wood commodity to support local mills and provide the basis of numerous products sold abroad.

Direct and Indirect Effects: FRZs and Rx Units. Treatment would include 3,228 acres of mastication and 4,254 acres of underburning in FRZs, 17,493 acres of underburning in Rx Units, and 41 acres of mastication and 113 acres of hand cutting, piling and burning in RS Treatments. The total discounted cost for this work would be \$4,976,661.

The benefit-cost ratio would be 2.31.

Cumulative Effects. It is not possible to determine cumulative effects of the potential fuel reduction work that might take place for the fuelbreak system west of Black Bear because that project has not been designed at the time of this analysis.

1.8.1.4 Alternative C: No New Temporary Roads Constructed

Direct and Indirect Effects—Mechanical Thinning of M Units. Alternative C proposes to treat 832 acres in M Units (thinning)—99 acres less than the 931 acres in the Proposed Action—because 1 mile of temporary roads would not be constructed. The positive residual value from thinning would be approximately \$1,168,909.

With an estimated volume of 9.6 MMBF, Alternative C could create 96 jobs. It would also provide the wood commodity to support local mills and provide the basis of numerous products sold abroad.

Direct and Indirect Effects. The proposed treatment includes 3,228 acres of mastication and 4,254 acres of underburning in FRZs; 17,493 acres of underburning in Rx Units; and 41 acres of mastication and 113 acres of hand cutting piling and burning in RS treatments. The total discounted cost for this work would be \$4,953,088.

Total value of lost timber would be \$12,828,450—the same as under Alternative B. The discounted value would be \$11,449,759.

The benefit-cost ratio would be 2.30.

Cumulative Effects. It is not possible to determine cumulative effects of the potential fuel reduction work that might take place west of Black Bear because that project has not been designed at the time of this analysis.

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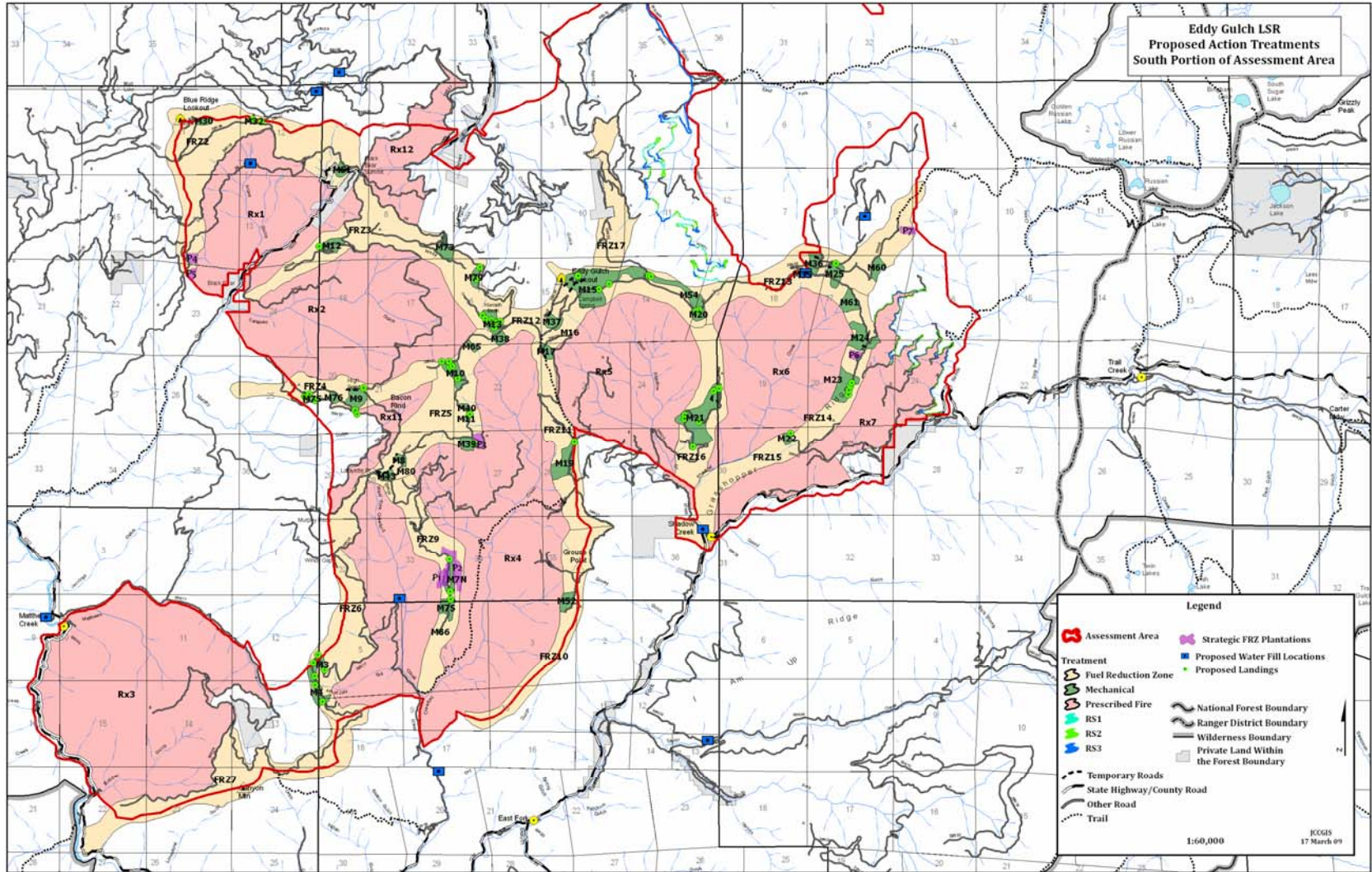
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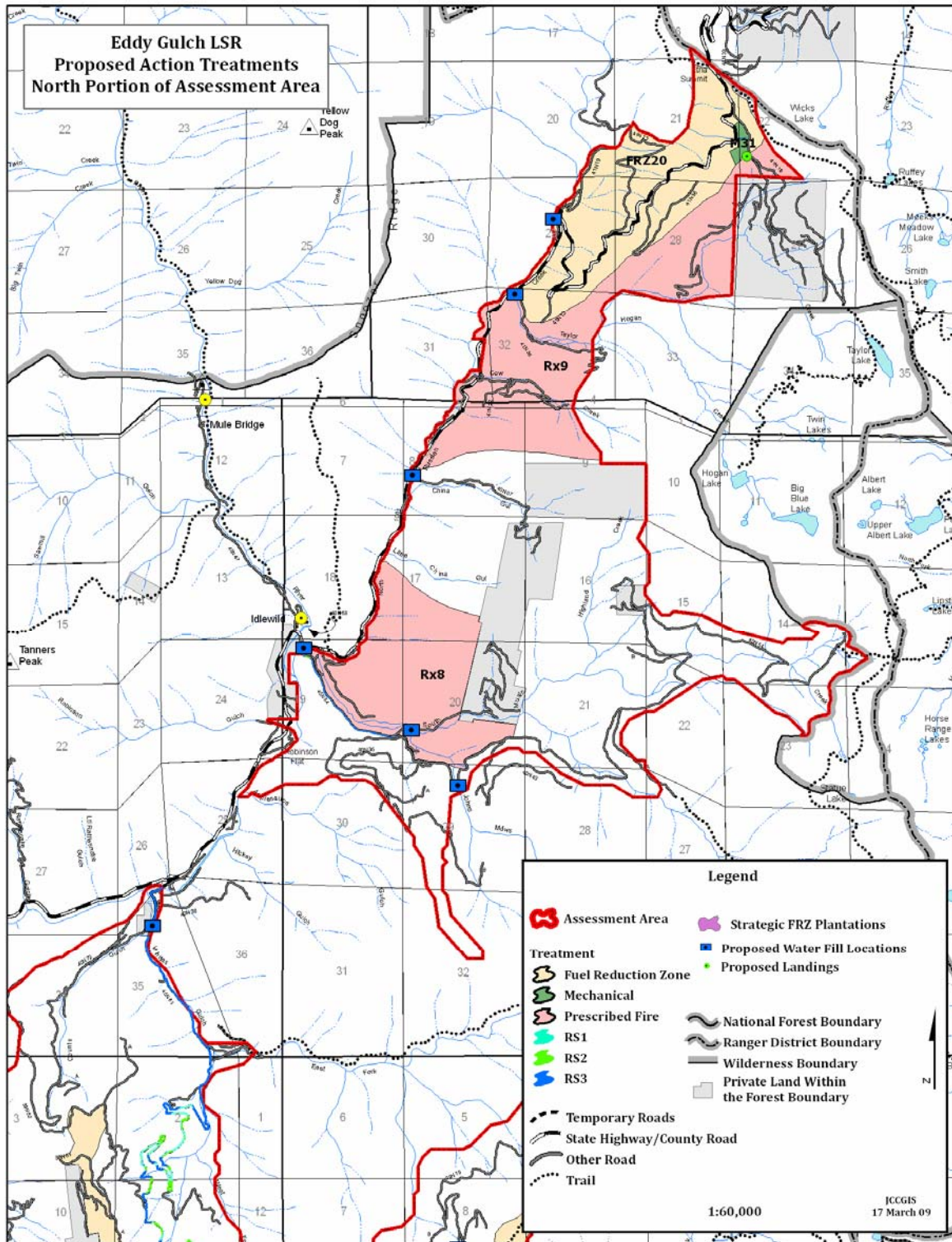
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Appendix A
Maps

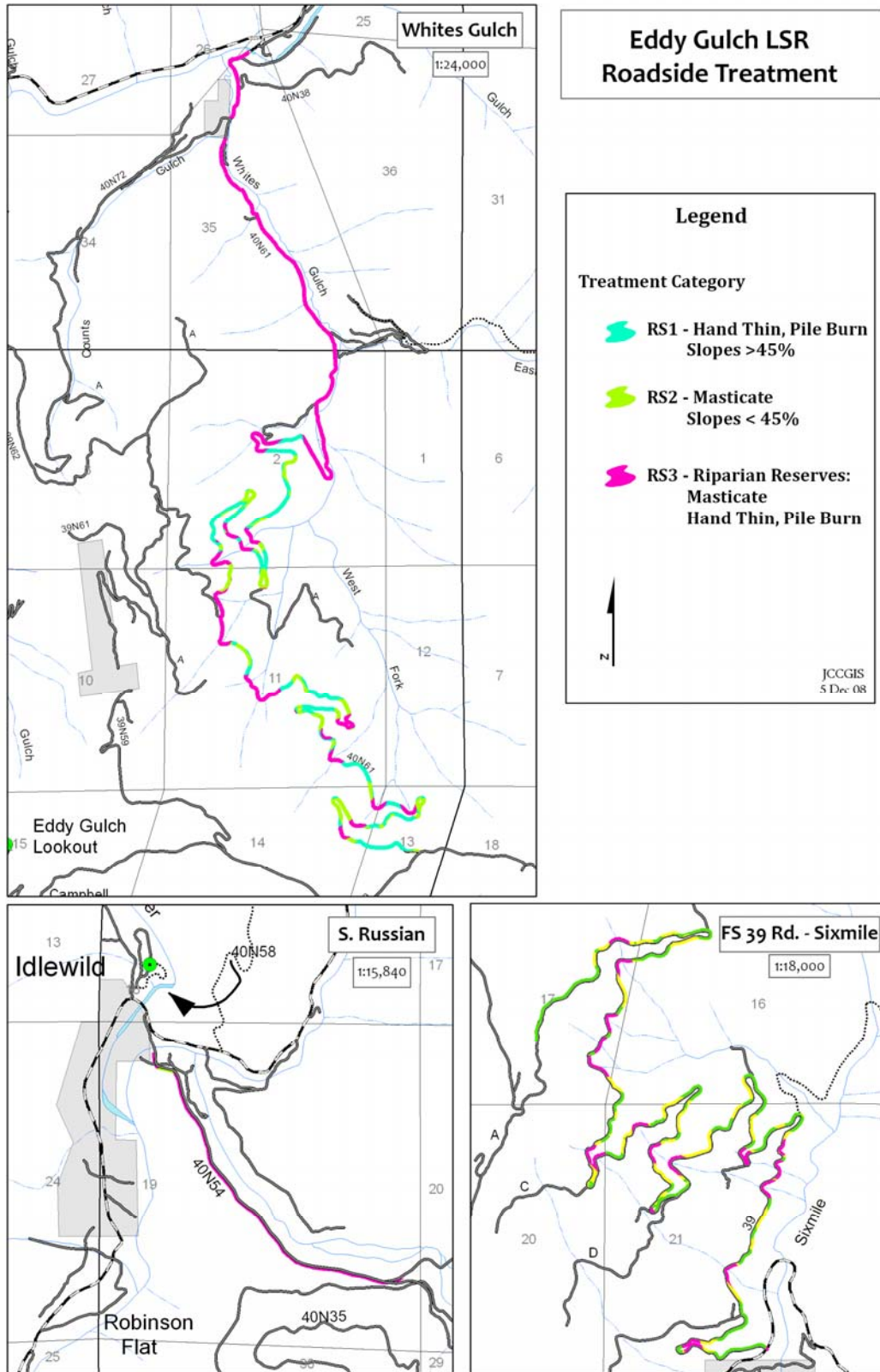
Map A-1. Proposed treatment units in the south portion of the Eddy Gulch LSR Project Assessment Area.



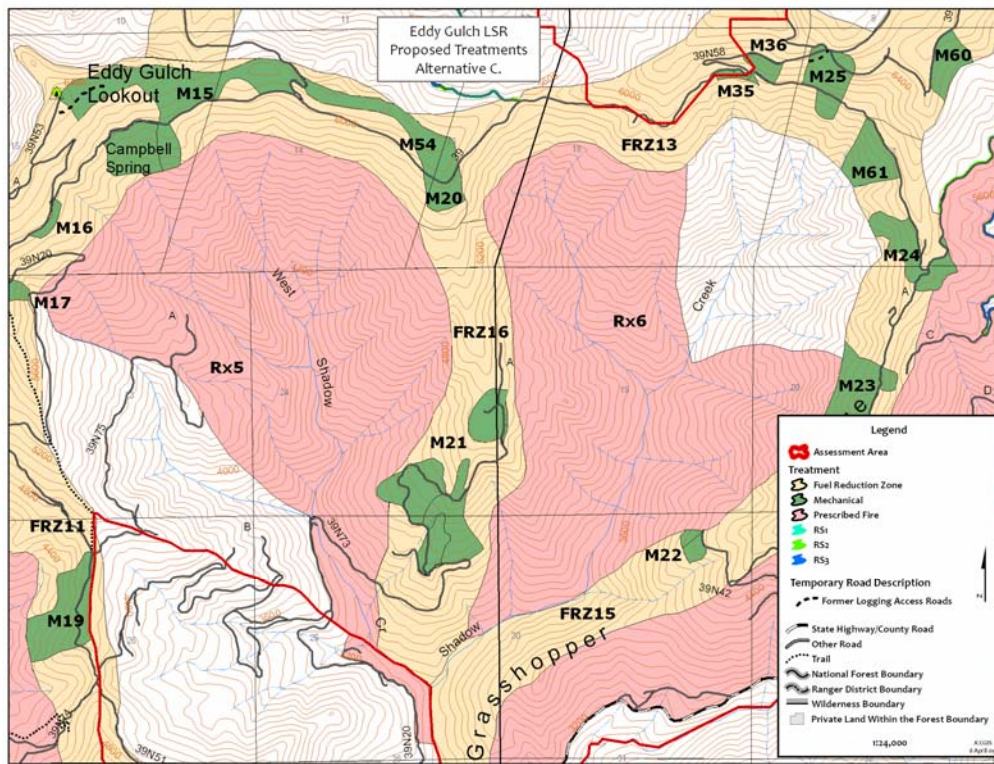
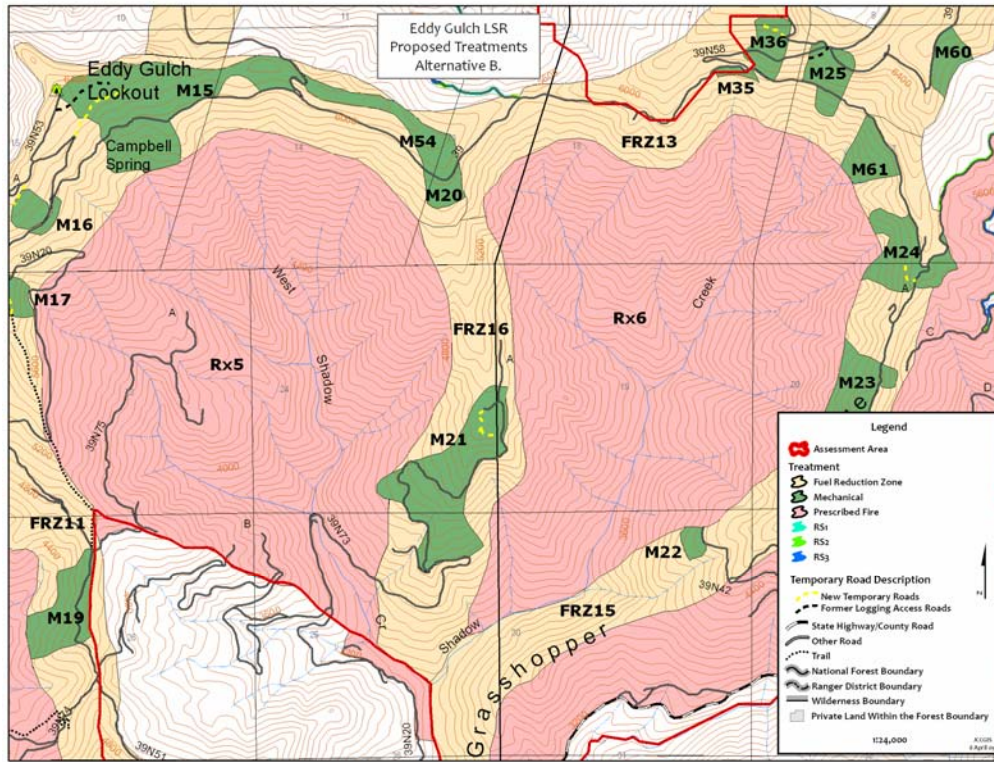
Map A-2. Proposed treatment units in the north portion of the Eddy Gulch LSR Project Assessment Area.



Map A-3. RS treatments along emergency access routes that do not pass through an FRZ or Rx Unit.



Map A-4b. View 2: Alternative B—configuration of treatment units *with construction* of 1.03 miles of new temporary roads and Alternative C—configuration of treatment units *without construction* of 1.03 miles of new temporary roads.



Appendix B
Economic Analysis Tables

Appendix B

Table B-1. Net Unit Volumes by Species – Current Entry

Version 5.2 - R6

Sale/alternative: Eddy LSR Proposed Action

Forest/district: Klamath

Date: 10/19/2008

Volume type: MBF

Unit	Acres	Total Unit Volumes By Species – MBF				Total Volume
		White fir	Sugar pine	Ponderosa pine	Doug-fir west	
10	32	470	0	0	0	470
11	3	44	0	0	0	44
12	22	10	0	0	175	185
13	32	384	0	10	6	400
1512	83	924	0	24	14	963
1513	55	897	0	0	0	897
16	4	48	0	1	1	50
17	12	144	0	4	2	150
19	46	20	0	0	366	386
20	13	191	0	0	0	191
21	108	36	6	87	692	821
22	7	2	0	6	45	53
23	42	504	0	13	8	525
24	45	540	0	14	8	563
25	27	397	0	0	0	397
3	7	2	0	6	45	53
30	9	132	0	0	0	132
31	20	240	0	6	4	250
32	5	2	0	0	40	42
35	4	59	0	0	0	59
36	21	309	0	0	0	309
37	12	176	0	0	0	176
38	12	176	0	0	0	176
39	14	5	1	11	90	107
4	33	11	2	27	211	251
40	7	103	0	0	0	103
43	12	0	47	119	32	198
51	12	4	1	10	77	92
52	19	8	0	0	151	160
54	37	544	0	0	0	544
60	17	435	0	0	0	435
61	25	300	0	8	4	313
65	6	2	0	5	38	46

Net Unit Volumes by Species – Current Entry

Version 5.2 – R6

Sale/alternative: Eddy LSR Proposed Action

Forest/district: Klamath

Date: 10/19/2008

Volume type: MBF

(continued)

Unit	Acres	Total Unit Volumes By Species – MBF				Total Volume
		White fir	Sugar pine	Ponderosa pine	Doug-fir west	
66	2	1	0	2	13	16
73	26	312	0	8	5	325
75	9	3	0	7	58	68
76	8	3	0	6	51	61
79	13	191	0	0	0	191
714	14	5	1	11	90	107
719	19	6	1	15	122	144
8	5	74	0	0	0	74
80	3	44	0	0	0	44
9	29	10	2	23	186	221
Totals	931	7,768	61	423	2,534	10,793

Table B-2. Logging & Associated Costs – Current Entry*Version 5.2 – R6***Sale/alternative: Eddy LSR Proposed Action****Forest/district: Klamath****Date: 10/19/2008****Volume type: MBF**

Unit Designation	Input Appraisal Related Costs for Sale in \$'s per MBF					
	Stump-to-truck	Log Haul	Road Maintenance	BD & Erosion	Temp Roads	Essential KV
	\$/MBF					
10	159.59	112.34	11.69	58.65		
11	159.59	112.34	11.69	58.65		
12	217.66	112.34	11.69	64.68		
13	165.30	112.34	11.69	66.46		
15a and b	216.78	112.34	11.69	47.18	3.97	
15c	159.59	112.34	11.69	52.88		
16	250.88	112.34	11.69	28.74		
17	250.88	112.34	11.69	28.74	6.45	
19	250.88	112.34	11.69	42.77		
20	159.59	112.34	11.69	58.65		
21	199.32	112.34	11.69	84.65	2.30	
22	185.67	112.34	11.69	94.54		
23	250.88	112.34	11.69	28.74	0.80	
24	250.88	112.34	11.69	28.74	1.89	
25	237.36	112.34	11.69	29.51	0.99	
3	185.67	112.34	11.69	94.54		
30	250.88	112.34	11.69	24.44		
31	250.88	112.34	11.69	28.74		
32	250.88	112.34	11.69	42.77		
35	250.88	112.34	11.69	24.44		
36	250.88	112.34	11.69	24.44	3.51	
37	250.88	112.34	11.69	24.44	5.58	
38	250.88	112.34	11.69	24.44		
39	250.88	112.34	11.69	47.27	1.65	
4	201.09	112.34	11.69	83.37		
40	250.88	112.34	11.69	24.44		
43	205.24	112.34	11.69	37.01		
51	250.88	112.34	11.69	47.27		
52	250.88	112.34	11.69	42.77		
54	159.59	112.34	11.69	58.65		
60	250.88	112.34	11.69	14.03		

Logging & Associated Costs – Current Entry

Version 5.2 – R6

Sale/alternative: Eddy LSR Proposed Action

Forest/district: Klamath

Date: 10/19/2008

Volume type: MBF

(continued)

Unit Designation	Input Appraisal Related Costs for Sale in \$'s per MBF					
	Stump-to-truck	Log Haul	Road Maintenance	BD & Erosion	Temp Roads	Essential KV
	\$/MBF					
61	250.88	112.34	11.69	28.74		
65	250.88	112.34	11.69	47.27		
66	250.88	112.34	11.69	47.27		
73	250.88	112.34	11.69	28.74		
75	220.45	112.34	11.69	69.33	11.57	
76	250.88	112.34	11.69	47.27		
79	159.59	112.34	11.69	58.68		
714	185.67	112.34	11.69	94.54		
719	212.44	112.34	11.69	75.13		
8	250.88	112.34	11.69	24.44	22.20	
80	250.88	112.34	11.69	24.44		
9	206.81	112.34	11.69	79.22	3.86	
Total or Averages	215.01	112.34	11.69	47.61	1.31	0.00

Table B-3. Economic Analysis Unit Summary – Current Entry

Version 5.2 – R6

Sale/alternative: Eddy LSR Proposed Action

Disc rate: 2.10%

Forest/district: Klamath

Volume type: MBF

Date: 10/19/2008

Unit Designation	Total Volume MBF	Total Acres	Predicted High Bid	Base Rate	Individual Ad Rate	Ad Rate	Total Gross \$ Timber Value	Total \$ Net Value	Total Disc Net Value
			\$/MBF						
10	470	32	154.76	3.00	139.28	139.28	72,799	72,799	67,692
11	44	3	154.05	2.99	138.65	138.65	6,794	6,794	6,317
12	185	22	128.75	3.00	115.87	115.87	23,818	23,818	22,147
13	400	32	142.63	2.95	128.36	128.36	57,050	57,050	53,048
15aandb	963	83	106.18	2.95	95.56	95.56	102,197	102,197	95,027
15c	897	55	160.95	3.00	144.86	144.86	144,375	144,375	134,246
16	50	4	94.89	2.96	85.40	85.40	4,745	4,745	4,412
17	150	12	88.27	2.95	79.45	79.45	13,241	13,241	12,312
19	386	46	116.97	3.00	105.28	105.28	45,198	45,198	42,027
20	191	13	154.92	3.00	139.43	139.43	29,606	29,606	27,529
21	821	108	122.38	2.79	110.14	110.14	100,472	100,472	93,423
22	53	7	126.67	2.76	114.01	114.01	6,739	6,739	6,266
23	525	42	93.97	2.95	84.57	84.57	49,335	49,335	45,874
24	563	45	92.40	2.95	83.16	83.16	51,976	51,976	48,329
25	397	27	105.56	3.00	95.01	95.01	41,908	41,908	38,968
3	53	7	126.67	2.76	114.01	114.01	6,739	6,739	6,266
30	132	9	96.97	2.99	87.28	87.28	12,830	12,830	11,930
31	250	20	94.79	2.95	85.31	85.31	23,698	23,698	22,035
32	42	5	117.69	3.00	105.92	105.92	4,943	4,943	4,596
35	59	4	98.10	3.00	88.29	88.29	5,788	5,788	5,382
36	309	21	94.59	3.00	85.13	85.13	29,229	29,229	27,179
37	176	12	91.39	2.99	82.26	82.26	16,122	16,122	14,991
38	176	12	96.97	2.99	87.28	87.28	17,106	17,106	15,906
39	107	14	108.76	2.79	97.89	97.89	11,638	11,638	10,821
4	251	33	124.13	2.78	111.72	111.72	31,157	31,157	28,971

Unit Designation	Total Volume MBF	Total Acres	Predicted High Bid	Base Rate	Individual Ad Rate	Ad Rate	Total Gross \$ Timber Value	Total \$ Net Value	Total Disc Net Value
			\$/MBF						
40	103	7	98.10	3.00	88.29	88.29	10,105	10,105	9,396
43	198	12	150.05	1.80	135.04	135.04	29,710	29,710	27,625
51	92	12	110.36	2.78	99.32	99.32	10,153	10,153	9,440
52	160	19	115.57	2.99	104.02	104.02	18,446	18,446	17,152
54	544	37	155.18	3.00	139.66	139.66	84,419	84,419	78,497
60	435	17	108.28	3.00	97.46	97.46	47,125	47,125	43,819
61	313	25	93.89	2.94	84.50	84.50	29,341	29,341	27,283
65	46	6	103.51	2.74	93.16	93.16	4,720	4,720	4,389
66	16	2	109.45	2.75	98.51	98.51	1,751	1,751	1,628
73	325	26	94.78	2.95	85.30	85.30	30,802	30,802	28,641
75	68	9	104.42	2.78	93.98	93.98	7,143	7,143	6,642
76	61	8	103.57	2.77	93.21	93.21	6,297	6,297	5,855
79	191	13	155.15	3.00	139.64	139.64	29,634	29,634	27,555
714	107	14	128.35	2.79	115.52	115.52	13,734	13,734	12,770
719	144	19	119.74	2.78	107.77	107.77	17,291	17,291	16,078
8	74	5	75.90	3.00	68.31	68.31	5,617	5,617	5,223
80	44	3	96.97	2.99	87.28	87.28	4,277	4,277	3,977
9	221	29	118.71	2.79	106.84	106.84	26,234	26,234	24,394
Sale total or average	10,793	931	119.18	2.92	107.26	107.26	1,286,301	1,286,301	1,196,059

Evaluation Item	Value	Notes
Total timber value at predicted high bid rate	1,286,301	Sale appears viable
Total timber value at base rate	31,514	
Additional value needed to bring sale to base rate	0	
Total discounted project value (includes non-timber values & non-ess kv)	1,196,059	This project is above cost

Table B-4. Net Unit Volumes by Species – Current Entry*Version 5.2 - R6*

Sale/alternative: Eddy LSR Alternative C

Forest/district: Klamath

Date: 10/24/2008

Volume type: MBF

Unit	Acres	Total Unit Volumes By Species – MBF				Total Volume
		White fir	Sugar pine	Ponderosa pine	Doug-fir west	
10	32	470	0	0	0	470
11	3	44	0	0	0	44
12	22	10	0	0	175	185
13	32	384	0	10	6	400
1512	57	587	0	16	9	612
1513	55	897	0	0	0	897
16	4	48	0	1	1	50
17	7	84	0	2	1	87
19	46	20	0	0	366	386
20	13	191	0	0	0	191
21	87	29	5	70	557	661
22	7	2	0	6	45	53
23	42	504	0	13	8	525
24	30	405	0	11	6	422
25	27	397	0	0	0	397
3	7	2	0	6	45	53
30	9	132	0	0	0	132
31	20	240	0	6	4	250
32	5	2	0	0	40	42
35	4	59	0	0	0	59
36	7	103	0	0	0	103
9	29	10	2	23	186	221
38	12	176	0	0	0	176
39	14	5	1	11	90	107
4	33	11	2	27	211	251
40	7	103	0	0	0	103
43	12	0	47	119	32	198
51	12	4	1	10	77	92
52	19	8	0	0	151	159
54	37	544	0	0	0	544
60	17	435	0	0	0	435
61	25	300	0	8	4	312
65	6	2	0	5	38	45
66	2	1	0	2	13	16
73	26	312	0	8	5	325
75	3	1	0	2	19	22
76	8	3	0	6	51	60
79	13	191	0	0	0	191
714	14	5	1	11	90	107
719	19	6	1	15	122	144
8	5	74	0	0	0	74
80	3	44	0	0	0	44
Totals	832	6,845	60	388	2,352	9,645

Table B-5. Logging & Associated Costs – Current Entry**Version 5.2 – R6****Sale/alternative: Eddy LSR Alternative C****Forest/district: Klamath****Date: 10/24/2008****Volume type: MBF**

Unit Designation	Input Appraisal Related Costs for Sale in \$'s per MBF						
	Stump-to-truck	Log Haul	Road	BD & Erosion	Temporary	Essential	Con/Reco
	\$/MBF						
10	159.00	112.34	11.69	58.65			
11	159.00	112.34	11.69	58.65			
12	217.66	112.34	11.69	64.68			
13	164.79	112.34	11.69	66.46			
1512	201.22	112.34	11.69	59.12			
1513	159.00	112.34	11.69	52.88			
16	251.56	112.34	11.69	28.74			
17	251.56	112.34	11.69	28.74			
19	251.56	112.34	11.69	42.77			
20	159.00	112.34	11.69	58.65			
21	209.00	112.34	11.69	77.70			
22	185.45	112.34	11.69	94.54			
23	251.56	112.34	11.69	28.74			
24	251.56	112.34	11.69	25.55			
25	237.85	112.34	11.69	29.51			
3	185.45	112.34	11.69	94.54			
30	251.56	112.34	11.69	24.44			
31	251.56	112.34	11.69	28.74			
32	251.56	112.34	11.69	42.77			
35	251.56	112.34	11.69	24.44			
36	251.56	112.34	11.69	24.46			
9	206.88	112.34	11.69	79.22			
38	251.56	112.34	11.69	24.44			
39	201.07	112.34	11.69	47.27			
4	251.56	112.34	11.69	83.37			
40	205.28	112.34	11.69	24.44			
43	251.56	112.34	11.69	37.01			
51	251.56	112.34	11.69	47.27			
52	251.56	112.34	11.69	42.77			
54	159.00	112.34	11.69	58.65			
60	251.56	112.34	11.69	14.03			
61	251.56	112.34	11.69	28.74			
65	251.56	112.34	11.69	47.27			
66	251.56	112.34	11.69	47.27			
73	251.56	112.34	11.69	28.74			
75	159.00	112.34	11.69	113.95			
76	251.56	112.34	11.69	47.27			
79	159.00	112.34	11.69	58.68			
714	185.45	112.34	11.69	94.54			
719	212.59	112.34	11.69	75.13			
8	251.56	112.34	11.69	24.44			
80	251.56	112.34	11.69	24.44			
Total or Averages							

Table B-6. Economic Analysis Unit Summary – Current Entry

Version 5.2 – R6

Sale/alternative: Eddy LSR Alternative C

Disc rate: 2.10%

Forest/district: Klamath

Volume type: MBF

Date: 10/24/2008

Unit Designation	Total Volume MBF	Total Acres	Predicted High Bid	Base Rate	Individual Ad Rate	Ad Rate	Total Gross \$ Timber Value	Total \$ Con/Recon	Total \$ FS Costs	Total \$ Net Value	Total Disc Net Value
10	470	32	155.35	3.00	139.81	139.81	73,077	0	0	73,077	67,950
11	44	3	154.64	2.99	139.18	139.18	6,820	0	0	6,820	6,341
12	185	22	128.75	3.00	115.87	115.87	23,818	0	0	23,818	22,147
13	400	32	143.14	2.95	128.82	128.82	57,254	0	0	57,254	53,238
1512	612	57	114.05	2.95	102.65	102.65	69,799	0	0	69,799	64,902
1513	897	55	161.54	3.00	145.39	145.39	144,904	0	0	144,904	134,738
16	50	4	94.21	2.96	84.79	84.79	4,711	0	0	4,711	4,380
17	88	7	91.05	2.94	81.95	81.95	7,967	0	0	7,967	7,408
19	386	46	116.29	3.00	104.66	104.66	44,936	0	0	44,936	41,783
20	191	13	155.51	3.00	139.96	139.96	29,718	0	0	29,718	27,633
21	661	87	121.78	2.79	109.60	109.60	80,521	0	0	80,521	74,872
22	53	7	126.89	2.76	114.20	114.20	6,751	0	0	6,751	6,277
23	525	42	94.09	2.95	84.68	84.68	49,398	0	0	49,398	45,933

Unit Designation	Total Volume MBF	Total Acres	Predicted High Bid	Base Rate	Individual Ad Rate	Ad Rate	Total Gross \$ Timber Value	Total \$ Con/Recon	Total \$ FS Costs	Total \$ Net Value	Total Disc Net Value
24	422	30	97.26	2.95	87.53	87.53	41,044	0	0	41,044	38,164
25	397	27	106.06	3.00	95.46	95.46	42,107	0	0	42,107	39,153
3	53	7	126.89	2.76	114.20	114.20	6,751	0	0	6,751	6,277
30	132	9	96.29	2.99	86.67	86.67	12,740	0	0	12,740	11,846
31	250	20	94.11	2.95	84.70	84.70	23,528	0	0	23,528	21,877
32	42	5	117.01	3.00	105.31	105.31	4,915	0	0	4,915	4,570
35	59	4	97.42	3.00	87.68	87.68	5,748	0	0	5,748	5,345
36	103	7	97.40	3.00	87.66	87.66	10,032	0	0	10,032	9,329
9	221	29	122.50	2.79	110.25	110.25	27,072	0	0	27,072	25,172
38	176	12	96.29	2.99	86.67	86.67	16,986	0	0	16,986	15,795
39	107	14	160.22	2.79	144.20	144.20	17,144	0	0	17,144	15,941
4	251	33	73.66	2.78	66.30	66.30	18,489	0	0	18,489	17,192
40	103	7	143.70	3.00	129.33	129.33	14,801	0	0	14,801	13,763
43	198	12	103.73	1.80	93.36	93.36	20,538	0	0	20,538	19,098
51	92	12	109.68	2.78	98.71	98.71	10,090	0	0	10,090	9,382

Economic Analysis Unit Summary – Current Entry

Version 5.2 – R6

Sale/alternative: Eddy LSR Alternative C

Disc rate: 0.00%

Forest/district: Klamath

Volume type: MBF

Date: 10/24/200

Unit Designation	Total Volume MBF	Total Acres	Predicted High Bid	Base Rate	Individual Ad Rate	Ad Rate	Total Gross \$ Timber Value	Total \$ Con/Recon	Total \$ FS Costs	Total \$ Net Value	Total Disc Net Value
			\$/MBF								
52	160	19	114.89	2.99	103.40	103.40	18,337	0	0	18,337	17,051
54	544	37	155.77	3.00	140.20	140.20	84,740	0	0	84,740	78,795
60	435	17	107.60	3.00	96.84	96.84	46,829	0	0	46,829	43,544
61	313	25	93.21	2.94	83.89	83.89	29,129	0	0	29,129	27,085
65	46	6	102.83	2.74	92.55	92.55	4,689	0	0	4,689	4,360
66	16	2	108.77	2.75	97.90	97.90	1,740	0	0	1,740	1,618
73	325	26	94.10	2.95	84.69	84.69	30,581	0	0	30,581	28,436
75	23	3	119.75	2.74	107.77	107.77	2,718	0	0	2,718	2,528
76	61	8	102.89	2.77	92.60	92.60	6,256	0	0	6,256	5,817
79	191	13	155.74	3.00	140.17	140.17	29,747	0	0	29,747	27,660
714	107	14	128.57	2.79	115.72	115.72	13,757	0	0	13,757	12,792
719	144	19	119.59	2.78	107.63	107.63	17,269	0	0	17,269	16,058
8	74	5	97.42	3.00	87.68	87.68	7,209	0	0	7,209	6,704

Unit Designation	Total Volume MBF	Total Acres	Predicted High Bid	Base Rate	Individual Ad Rate	Ad Rate	Total Gross \$ Timber Value	Total \$ Con/Recon	Total \$ FS Costs	Total \$ Net Value	Total Disc Net Value
			\$/MBF								
80	44	3	96.29	2.99	86.67	86.67	4,247	0	0	4,247	3,949
Sale total or average	9,652	832	121.11	2.92	109.00	109.00	1,168,909			1,168,909	1,086,903
			high bid	base rate		ad rate				Totals include sale wide non-essential KV	

Evaluation Item	Value	Notes
Total timber value at predicted high bid rate	1,168,909	Sale appears viable
Total timber value at base rate	28,161	
Additional value needed to bring sale to base rate	0	
Total discounted project value (includes non-timber values & non-ess kv)	1,086,903	This project is above cost

1,086,903
