Lassen Backcountry Discovery Trails

Alternate 3B Share-the-Dream Loop

ROC
Recreation Outdoors Coalition

Recreation Outdoors Coalition

U.S. Department of Agriculture
Forest Service

Backcountry 4X4s

Forest Supervisor
Lassen National Forest
2550 Riverside Drive
Susanville CA 96130

September 14, 2005

Dear Ms Tippin,

Enclosed is the 2005, Back Country Discovery Trail Alternate Route 3B, Share-the-Dream Loop Motorized Shared (mixed) Use engineering analysis for your consideration.

The analysis was performed essentially as presented to you on April 26, 2005. As data gathering began, some recording procedures were modified to best reflect conditions. Contacts were maintained with the development of the national "Guidelines for Analysis of Mixed Use on NFS Roads". This analysis adheres very closely to the WO's August 23, 2005 draft.

To date, no accidents have been reported on the roads evaluated in the study.

Based upon the analysis and my professional judgement, I believe the risk for accidents will be low if you allow continued use of non-street legal vehicles on these unpaved roads of the Share-the-Dream Loop.

For the 72 miles, the average daily traffic for all count stations was 12 vehicles, with a high of 27 and a low of 5. Of the 895 vehicles counted, 83% were street legal and 17% were non-street legal. And they carried, on average, 1.6 people per vehicle. Of the 83% that were street legal, only 10% were passenger cars, suggesting that maintenance levels could be lowered. Also, there were 26% SUVs, 47% pickups, 3% dirt bikes and 14% quads.

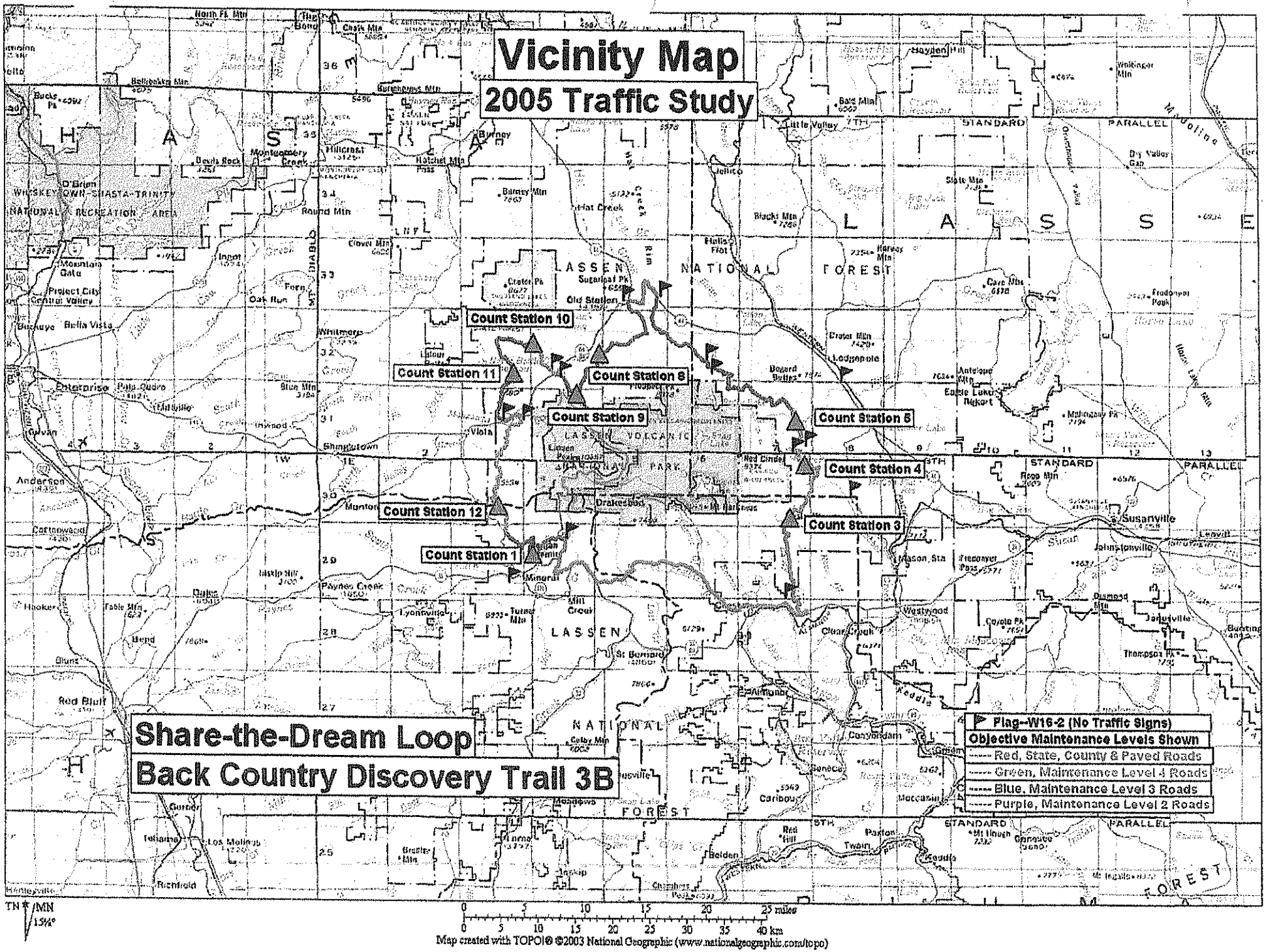
Finally–this project involved 60 members representing nine OHV Clubs and the Recreation Outdoor Coalition from Northern California. These people contributed 2,140 hours of labor and provided 16,714 miles of personal vehicle use. We all sincerely hope this analysis gives you the information you need for making the decision to continue "shared use" on these roads.

We look forward to your decision.

Sincerely,

H. R. Tatman, Jr., PE, Team Leader
707-620 Wingfield Rd
Janesville CA 96114
530-253-3054

cc: Sylvia Milligan, Chairperson ROC
E. Vaughn Stokes, Director of Engineering, WO


Vicinity Map
2005 Traffic Study
Count Station 10
Count Station 11
Count Station 8
Count Station 9
Count Station 5
Count Station 4
Count Station 12
Count Station 3
Count Station 1
Share-the-Dream Loop
Back Country Discovery Trail 3B
Flag--W16-2 (No Traffic Signs)
Objective Maintenance Levels Shown
Red, State, County & Paved Roads
Green, Maintenance Level 4 Roads
Blue, Maintenance Level 3 Roads
Purple, Maintenance Level 2 Roads
0 5 10 15 20 25 miles
0 5 10 15 20 25 30 35 40 km
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

CONTENTS

Engineering Report
Lassen National Forest
Back Country Discovery Trail–Alternate 3B
Analysis of Share-the-Dream Loop (BCDT–3B)
for Motorized Mixed Use Designations

Summer 2005

Introduction

Some people own and enjoy riding their OHVs, primarily dirt bikes and quads in the summer. Some operators go to developed OHV parks, use private lands and/or use public lands.

The expanding availability of OHVs and the growing population has dramatically increased the demand for riding opportunities and unfortunately increased the conflicts.

The Forest Service is in the process of adopting procedures to restrict OHV travel to designated roads, trails and a few small open areas. Some staff in the Pacific Southwest Region oppose OHV use on ML 3, 4, or 5 NFS roads.

Forest Service directives and handbooks, prepared before the large increase in demand for OHV riding, has resulted in varying agency interpretations of what roads can be used by non-street legal OHVs. Maintenance Level (ML) 2 roads are generally considered open, ML3, 4 and 5 are open sometimes. ML2 roads typically are short dead end roads.

This analysis addresses the risks for accidents if street-legal and non-street legal vehicles share the existing 72 miles of ML3 and 4 roads on the Share-the-Dream Loop, BCDT-3B.

Issue Statement

Which unpaved road segments, under US Forest Service jurisdiction, of the Share-the-Dream Loop (BCDT-3B) may relatively safely have shared (mixed or combined) use between street legal and non-street legal vehicles?

Constraints

All vehicles and operators using the roads now and in the future are assumed to be licensed and outfitted (personal protection gear) to fully meet State of California, Department of Motor Vehicle Code (CVC) requirements, current editions. See Glossary for CVC codes.

Roadway Characteristics: The following information was obtained in June 2005, on about 72 miles of ML 3 and 4 NFS roads by the engineer:

- Surface Type
- Average Travel Speed
- Cross Section Changes
- Surface Type Changes
- Curvature Irregularities
- Road Widths
- Clearance from Roadside Hazards
- Alignment and Stopping Sight Distance
- Radical Speed Change
- Typical Season of Use

Traffic Flow Data: The following information was observed periodically during the summer and recorded by a team of technicians:

Number and type of vehicle and people per vehicle.

Traffic observation sites and counting days and hours for recreation were selected by the engineer following guidance from "Fundamentals of Traffic Engineering", Institute of Transportation and Traffic Engineering, University of California, Berkeley, 6th edition and other literature.

Following a training session, observations were made by the technicians from 7:00 AM until 7:00 PM on the first Sunday and third Wednesday of June, July and August, 2005. Observations were also made, by Forest request, on September 4 but those results are not included in the analysis. Two people occupied each count site for each 12 hour count period.

Observations classified the vehicles as to type of vehicle and the number of occupants per vehicle.

Vehicles were not stopped and drivers not interviewed to assess the User Knowledge or if they were operating legally. By observation, the drivers appeared to know where they were going, appeared to be legal, and were driving reasonably.

Average daily traffic (ADT) was calculated by the engineer using the formula from the Bureau of Public Roads (now Federal Highway Administration) "Guide for Traffic Volume Counting Manual", 2nd edition.

Summary of Findings and Recommendations

Road # *	Length Miles	Summer 2005 OBSERVATIONS						Accident Assessment Rating		Recommend-ation Shared Use Yes/No
		Count Sta. # **	ADT	Ave. Speed MPH ***	% Street Legal	% Non-Street Legal	People per Vehicle	Probability of Accident	Severity of Accident	
30N16	6.56	1	5	15	42	58	1.6	Low	Low	Yes
29N22*	2.96	1	5	15	42	58	1.6	Low	Low	Yes
32N1010	14.30	3,4,5 *****	16	20	88	12	1.7	Low	Low	Yes
32N09	7.73	5	11	20	87	13	1.5	Low	Low	Yes
32N21	0.36	Est.****	±30	20	±95	±5	±2.0	Low	Low	Yes
32N12	0.24	8,9	16	10	83	17	1.5	Low	Low	Yes
32N13*	7.49	8,9	16	20	83	17	1.5	Low	Low	Yes
32N16	3.40	10	14	24	76	24	1.5	Low	Low	Yes
32N24	7.90	11	14	18	77	23	1.5	Low	Low	Yes
32N13	0.30	11	14	25	77	23	1.5	Low	Low	Yes
32N17	5.21	11	14	20	77	23	1.5	Low	Low	Yes
31N17	15.30	12	8	27	85	15	1.6	Low	Low	Yes

* 29N22 and 32N13 are signed on the ground as ML 2

**ADT for road is average of indicated count stations

***Based on speed by prudent driver

****Butte Lake Road access to LVNP is estimated only, not counted. A Public Lands Highway Project is proposed with adjacent OHV trail.

Maintenance and/or Mitigation Needs and Photographs

General—This study had it's on the ground beginning in May 2005. There was still a lot of snow on the roads, so numerous trips were made to find out if we could get to the nine count sites in time to start the count on the first Sunday in June. In other words, team members were some of the first to travel the roads. We did a lot of tree and rock removal as we went. As of the end of the counting on the first Sunday in September, no USFS road maintenance of any kind appeared to have been done. These are all ML 3 or 4 roads.

At a recent public meeting, the Forest announced that in 2004 16% of LNF roads were maintained and only 13% met road management objectives. It may be even worse in the next few years.

Consideration needs to be given to reducing operational ML of these ML 3 and 4 roads to ML 2 and concentrate your dollars on drainage. Observed conditions, summer 2005, are best described as meeting Level 2 (ML2) as shown in Exhibit 01, Section 12.6 FSH 7709.58 effective 9/4/92. It will cost a lot more to bring these roads back if they wash out.

Grading—It appears from the debris in the ditches, ruts, pot holes and washouts, that the drainage has not been touched for a number of years. Traffic has created numerous large washboards that can cause any vehicle to loose control.

The ditches need to be cleaned to keep run-off in the ditch. When pulling the ditches with a grader, keep the break point between the road surface and ditch slope flat enough to safely allow a vehicle to drive into the ditch to avoid an accident.

And remove the berms that have accumulated since 1991. This will enhance the dispersal of water and can provide from one to six feet of additional accident avoidance space.

The drainage work is needed to protect the road investment as well as the adjacent resources.

Vegetation Removal—Given the amount of vegetation growth that has encroached on the travel way, it's been at least 5 years since any major vegetation removal effort was made.

Minimum removal work has been listed on a map for each road in Appendix F. It is also listed by milepost and GPS coordinates under notes for each road in Appendix E. A Garmin GPS76CS with a 15 meter accuracy was used. Coding use is as follows:

Consider Alternative A; Page 5C-6 of MUTCD states:

> *"Section 5C.12 NO TRAFFIC SIGNS Sign (W16-2)*
>
> *Option:*
>
> *A warning sign (W16-2) with the legend NO TRAFFIC SIGNS may be used only on unpaved, low volume roads to advise users that no signs are installed along the distance of the road. If used, the sign may be installed at the point where road users would enter the low-volume road or where, based on engineering judgment, the road use may need this information.*
>
> *A supplemental plaque (W7-3a) with the legend AHEAD, XX METERS (XX FEET) or NEXT XX KM (NEXT XX MILES) may be installed below the W16-2 sign when appropriate."*

Install one of the W16-2 signs at each State or County road intersection. By doing this the agency is advising the traveling public that no further warning signs are posted along the road. This should, in my opinion, protect the agency in the event of a tort claim resulting from an accident where the claimant says they were not warned about a curve, for example.

Or, consider Alternative B;

After traveling along these roads several times, a few specific signs to warn drivers about uncommon conditions along the way may be in order to help reduce the risk of an accident. The recommended MUTCD signs are listed in Appendix E and F by mile post, GPS coordinates and catalog number and on maps. The MUTCD provides location criteria for different travel speeds.

Recommendation—After much thought about the A and B Alternatives, I have concluded the best approach, given today's conditions, is Alternative A–No Traffic Signs. This will be the least costly way, the easiest to monitor for longevity of sign life and should minimize tort claims. Needed W16-2 signs are shown on the vicinity map at the beginning.

The Forest and Region, as a whole, may wish to adopt this system for all NFS roads where they intersect with State and County Roads. OGC could be consulted.

Share The Road—If the decision is made to allow non-street legal OHV on the ML 3 and 4 roads, then Share The Road (W16-1) signs need to be installed. See Chapter 3A, EM-7100-15 Signs and Poster Guidelines OHV Chapter and/or use MUTCD W16-1 signs with the appropriate white on brown vehicle symbols.

September 26, 2005

Below is the log of the photographs in the 2005 Traffic Study on the Share-the-Dream Loop, LNF BCDT 3B.

All photographs were taken by H. R. Tatman, Jr.

Some of the photographs were edited to lighten the shadows. Where these are used, both versions of the photographs are included on the CD.

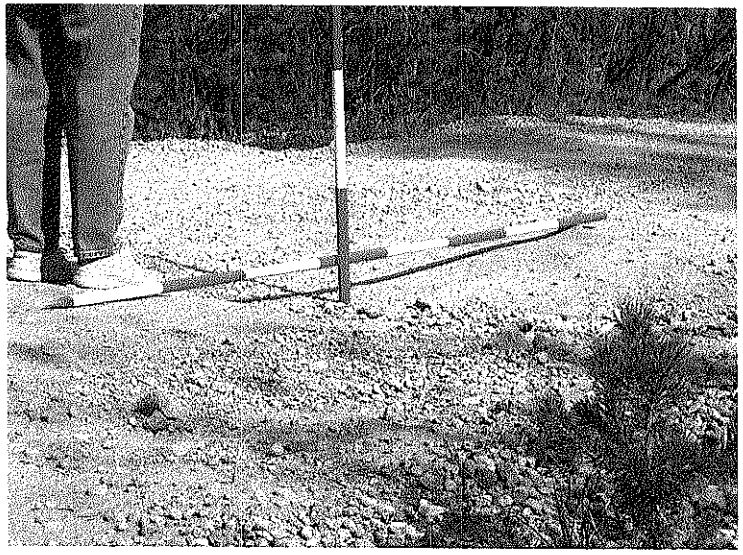
Photograph Log, 9/6/2005 Continued

Road Number	WP	MP	Lat/Lon	Comments, Hazard, Mitigation, Etc.
32N61	24	2.13	N40°36.013, W121°17.759	Photo 05-0704
32N17	26	0.32	N40°35.163, W121°36.457	Photo 05-0706
32N17	27	1.01	N40°34.736, W121°36.969	Photo 05-0707
32N17	28	3.96	N40°32.683, W121°38.027	Photos 05-0708, 05-0709
32N17	29	4.96	N40°32.092, W121°37.478	Photos 05-0710, 05-0711
32N17	30	5.15	N40°30.015, W121°37.268	Photos 05-0712

05-0672 Plugged culvert

05-0673 Shoulder washed 1.5 Feet

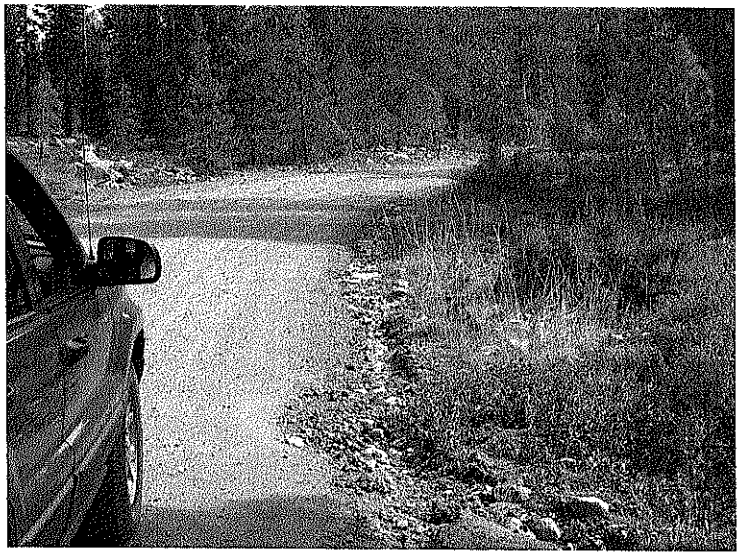
culvert



05-0674 Culprit

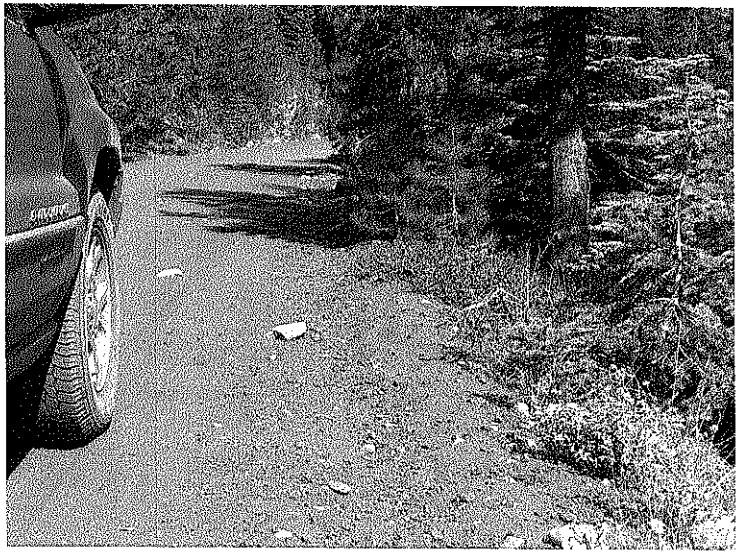
05-0676 Each color is 12" long on range pole

Photos by H.R. Tatman Jr.



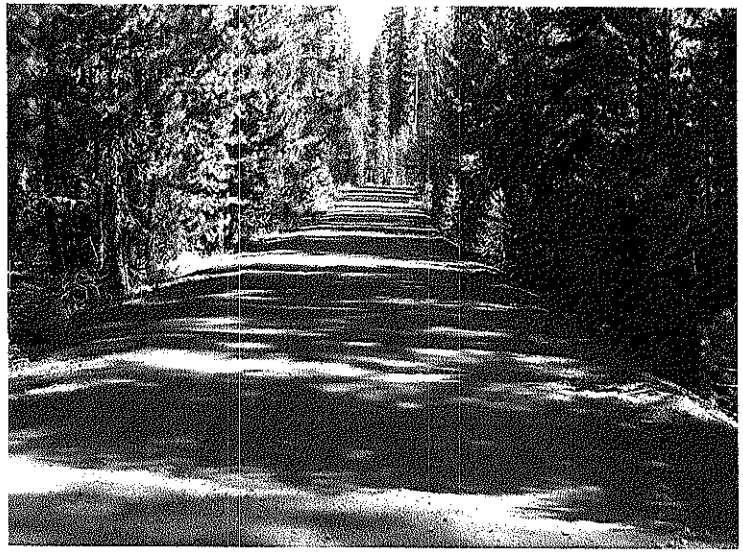
05-0677 Results of plugged ditch

05-0678 Plugged ditch



05-0679

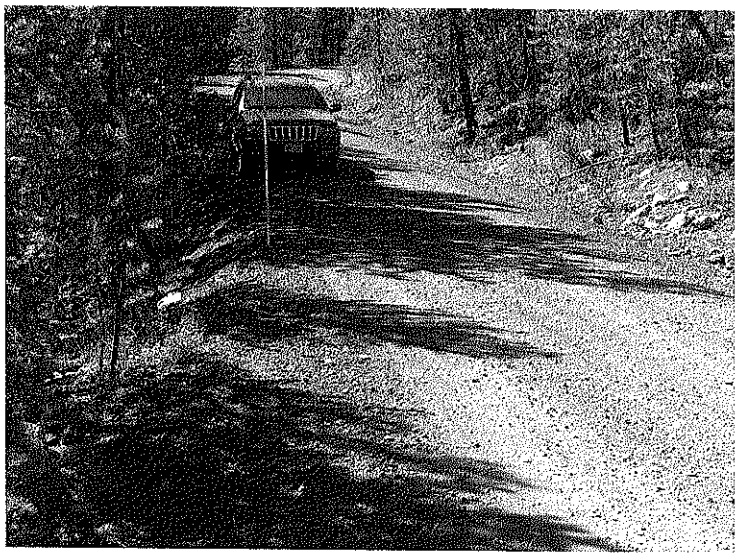
Accumulated berm and vegetation



05-0682 OK Obj. ML4 road-except for berm in fill area

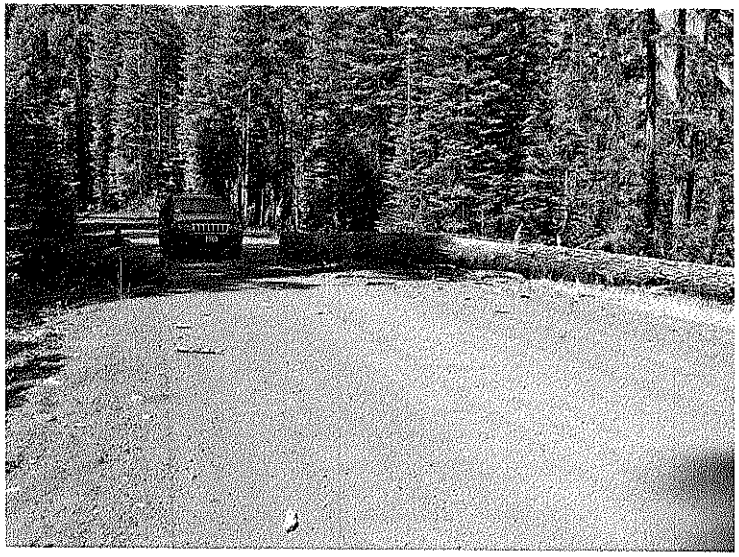
Photos by H. R. Tatman, Jr.

September 6, 2005

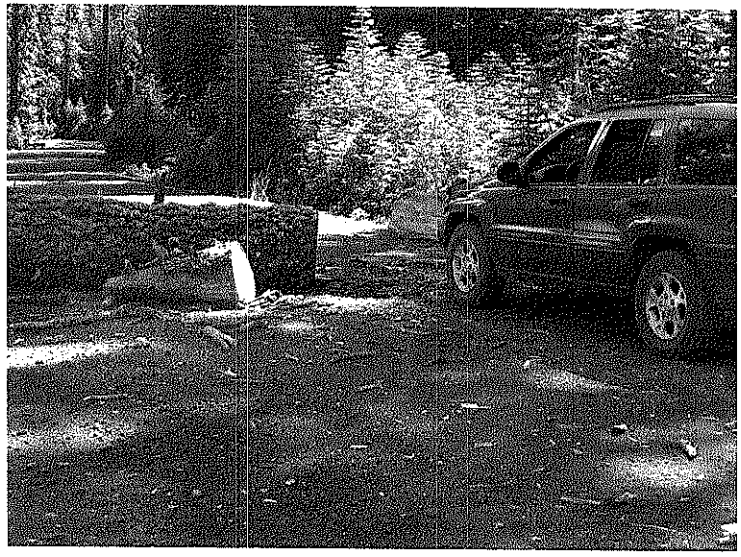


05-0680 Short CMP (SCMP)

05-0681 Hole to fall into



between 8/17/05 and 9/4/05



05-0683 Fell
05-0684 Same tree

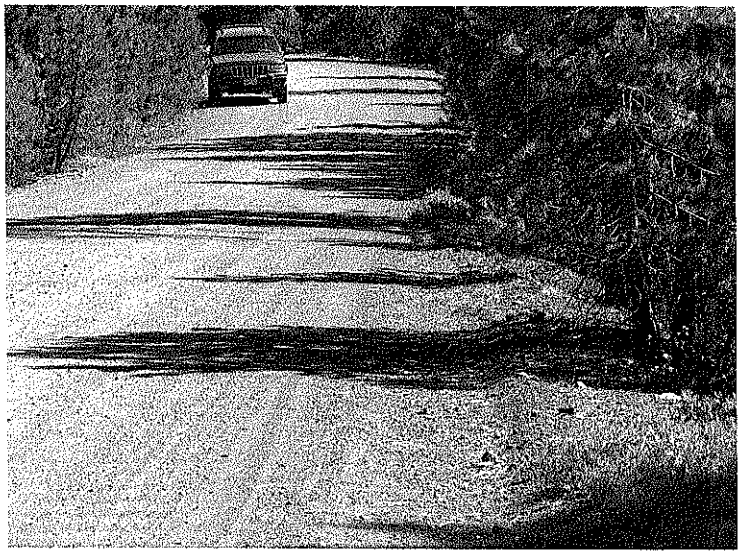
05-0686 Widow maker and veg. encroachment

05-0687 Widow maker and berm on fill

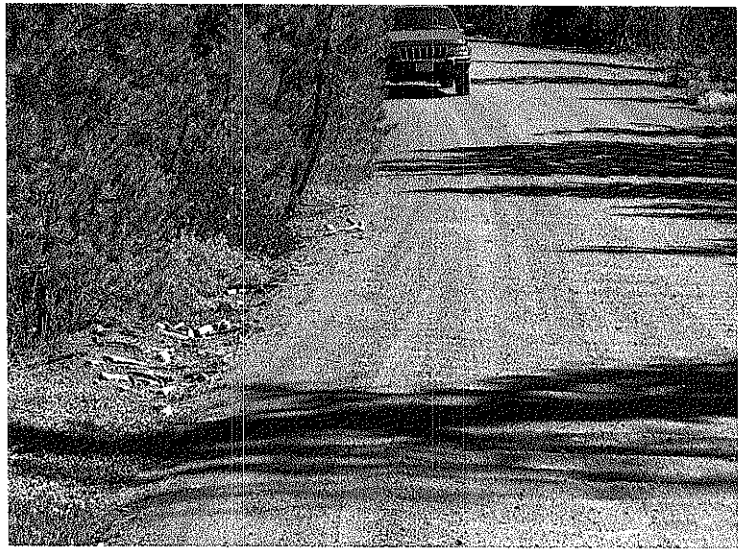
05-0685 Widow maker

Photos by H.R. Tatman Jr

September 6, 2005



05-0688 Imported surface material left in berm Rock beginning to show in surface

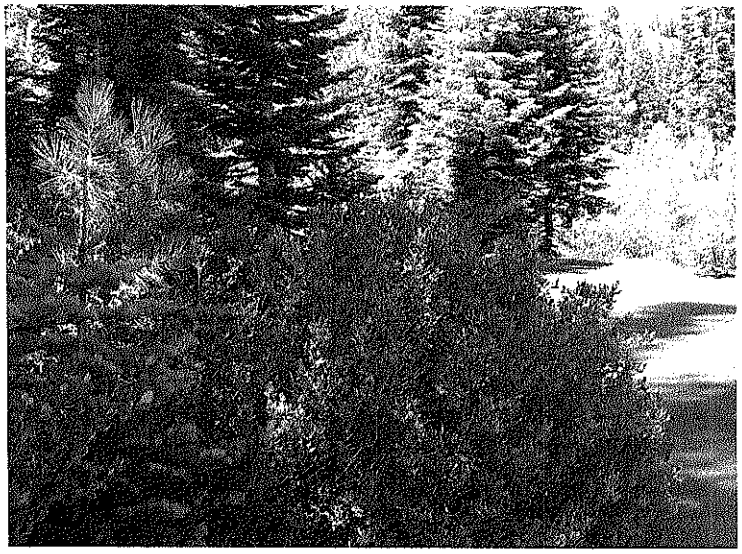


05-0689 Pieces of dead limbs from widow maker on roadside.

tree

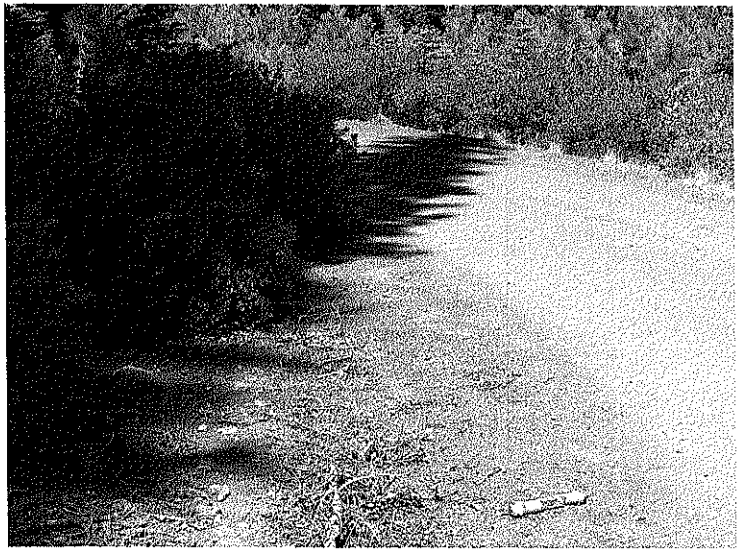
05-0690 Fallen

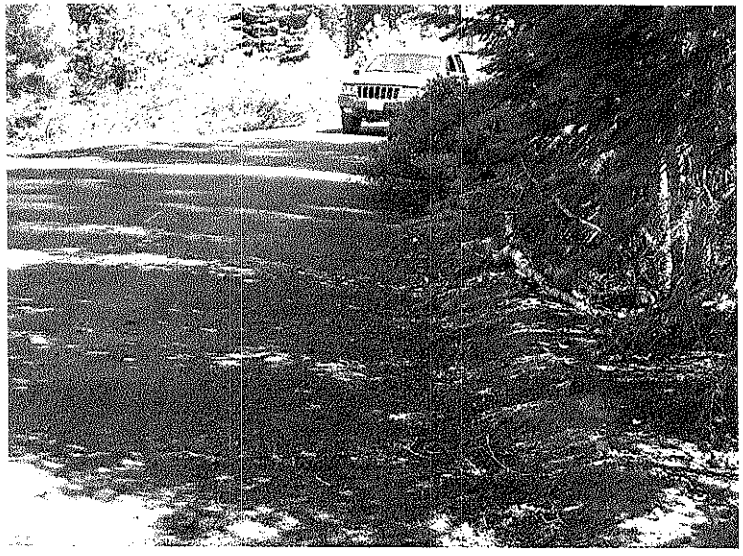
05-0691 Vegetation encroachment



05-0692 SDC

05-0693 SDC

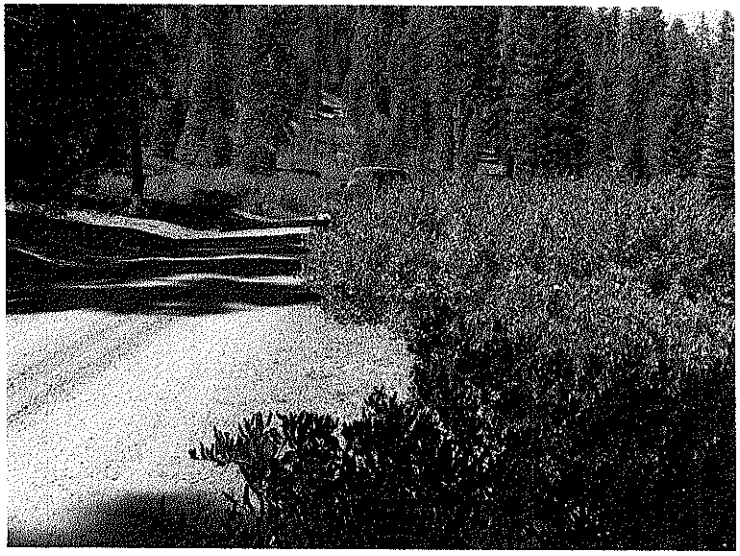




05-0694 SDC
05-0695 SDC

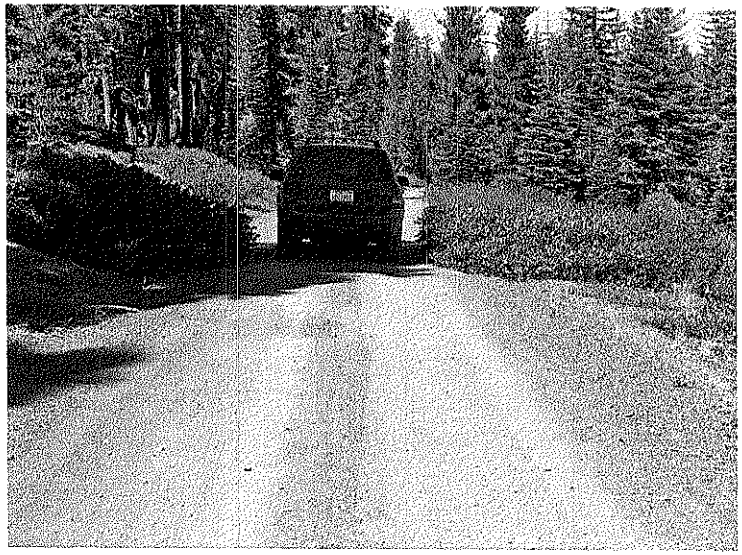
05-0696 Brush encroachment

05-0697 Maintenance



encroachment

05-0698 Brush



05-0699 Brush encroachment

05-0702 Previously damaged meadow

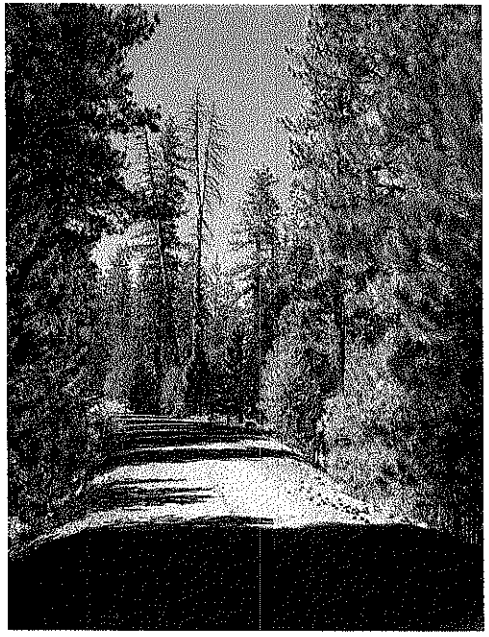
05-0703 Some signs of 2 year old damage

05-0701 Maintenance

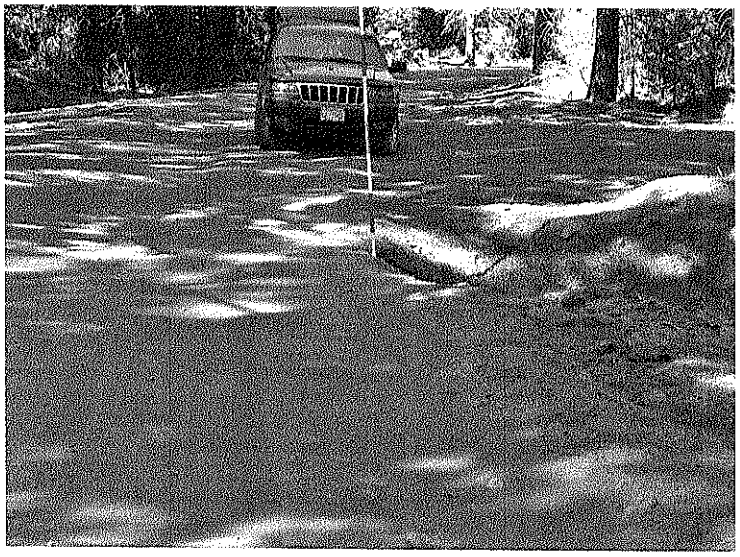
Photos by H.R. Tatman Jr

05-0706 Rutting

05-0707 Surface erosion

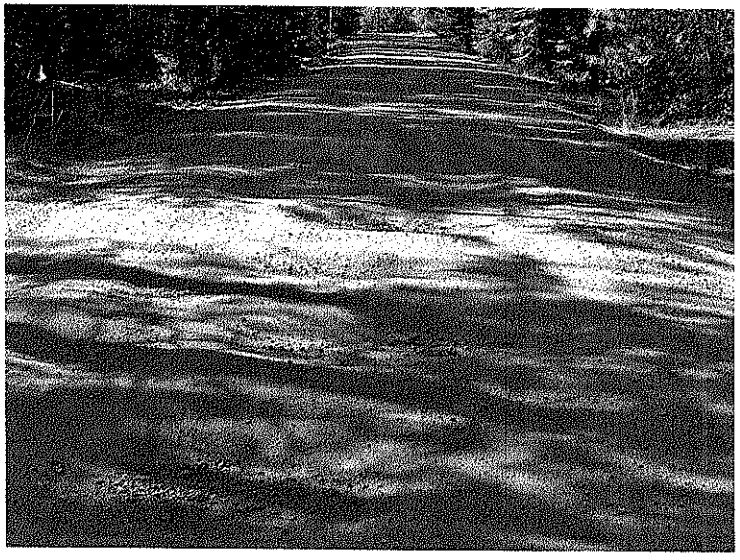


05-0704 More widow makers



05-0708 SCMP

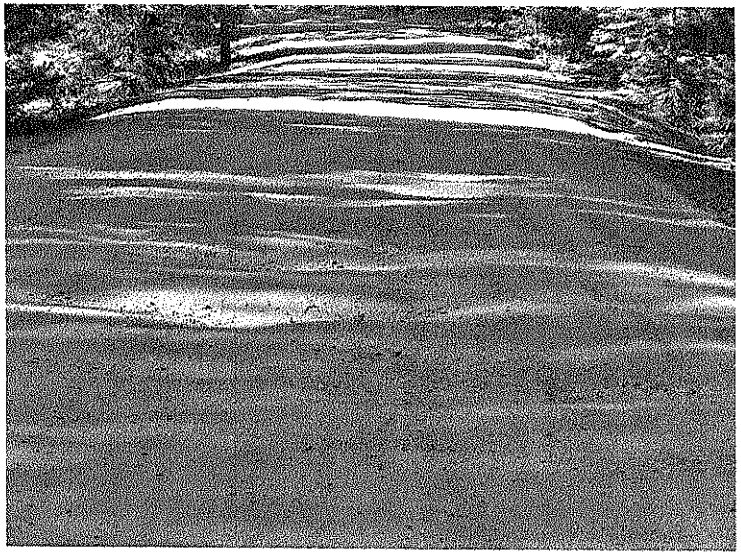
05-0709 SCMP



holes

05-0710 Pot

05-0711 Pot holes



05-0712 Pot holes

Estimated
Maintenance–Signage Needs & Costs

Road #	Maintenance		Regulatory Signs	Warning Signs		Object Markers
	SDC	RBE		Alt. A	Alt. B	
30N16	12	1			6	2
29N22	2					
10(32N10)	3	1	2		12	8
23N09	4	7			16	
32N21						
32N12	1				2	
32N13	6	3				4
16(32N16)	1					
32N24	5				4	6
32N13						
32N17	3				8	2
17(31N17)	20	1	2		30	2
Totals	57	13	4	15 or	78	24
Cost	$18,500	$7,700	$1,000	$3,750 or	$19,500	$3,000

$30,200 + $3750 or + $19,500 = $33,950 or $49,700

SDC & RBE 4 person crew @ $45.00/Hour + 150 mi/day @ $0.405 = $1500/day
Power pole saw @ $350.00 & chain saw @ $300.00 = $650
SDC 5 curves/day = 12 days = $18,000 + 12/17ths ($650) = $18,500
RBE 3 sites/day = 5 days = $7500 + 5/17 ($650) = $7,700

Regulatory & Warning Signs @ $250 each

Object Markers @ $125 each

Appendix

A - Glossary

B - Forestwide 2005 Accident History

C - State Laws Preempted

D - Traffic Flow Data by Count Site

E - Roadway Characteristic Notes and Slope Maps by road

F - Shared Use Assessment, Maps and Maintenance and/or Mitigation Tasks by road

G - Recommended MUTCD Signing

H - Study Volunteers