

Engineering Report:

Lassen National Forest

Eagle Lake Ranger District

Analysis of

National Forest System Road (NFSR)

33N06

for Motorized Mixed Use Designation

Forest: Lassen

District: Eagle Lake

Road Number: 33N06

Road Name: Little Harvey Mountain

Introduction: This segment of Little Harvey Mountain Road is located on the east side of Lassen National Forest (LNF) in the Champs Flat quadrangle, approximately .5 miles northwest of Little Harvey Mountain. NFSR 33N06 begins at an intersection with NFSR 33N02 near Burgess Well and ends at an intersection with NFSR 33N50 near Salt Cabin. The road starts in Section 24, southwest of Burgess Well and travels southeast to Little Harvey Mountain and an intersection with Lassen County Road 105. County Road 105 then utilizes 33N06 as it's alignment as it trends northeast past the Champs Flat Meadow and the intersection with 35N05. The road provides an easy grade access from the pine forest around Burgess Well to the grazing land of Champs Flat/Fleming Well. The entire road is currently managed by LNF as an ML3 open only to highway-legal vehicles.

The road segment was recommended in the LNF Travel Analysis (2008) for an engineering analysis of motorized mixed use. The purpose of this engineering analysis is to investigate the potentials, and associated risks, for transporting both highway-legal vehicles (motor vehicles, including the operators, that are licensed or certified for general operation on public roads within the State) and non-highway-legal vehicles (motor vehicles, including the operators, that are not licensed or certified for general operation on public roads within the State) from the intersection of Lassen County Road 105 approximately 1 mile to the

intersection of 33N61. The LNF Travel Analysis (June 2008) identified this road section as a connector for recreational off-highway vehicle (OHV) loop opportunities on the adjacent road network, of which a portion is currently managed as open to non-highway-legal vehicle use.

Study Segment road data from the forest transportation atlas:

Segment 1: Beginning Mile Post: 1.65 Ending Mile Post: 2.40

33N61 to Lassen County Road 105

The following information is applicable to both segments:

Traffic Service Level: A B C D

Objective Maintenance Level: 1 2 3 4 5

Operational Maintenance Level: 1 2 3 4 5

Maintenance by: **Forest Service (FS)**

Non-Forest Service ROW or jurisdiction? Yes No

Any road use agreements, maintenance agreements, or other encumbrances?

Yes No

Description of agreements or encumbrances:

No agreements are documented in this segment.

Subject to Highway Safety Act? Yes No

Non-highway-legal vehicles currently permitted? Yes No

Would motorized mixed use be consistent with State and local laws? Yes
 No

Description of inconsistency with State and local law:

According to California Vehicle Code section 38026, *Designating Highways: Combined Use*, off-highway operators on a Combined Use highway must be in possession of a valid driver's license.

Based on the Forest Service purpose and need of allowing all motor vehicles on this segment, designation for motorized mixed use would involve the preemption of state law if the road is to remain a highway.

Description of road management objectives (RMOs), existing use, and proposed use:

The road currently serves as a ML3 collector road and functions as access from the pine forest area by Burgess Well and 33N02, unto the meadow/grazing area by Champs Flat and the Salt Cabin. Situated near the mid western boundary of the Champs Flat quadrangle in the Eagle Lake Ranger District, this route connects to a network of lower standard ML2 system roads that access NFS lands near Little Harvey Mountain, Logan Mountain, and Squaw Valley.

The road has traditionally served range access to Salt Cabin and Fleming Well as well as the pine forest by Burgess Well for commodity extraction, fire suppression, and recreation.

The road is signed at each end with correct horizontal ML3 route identification markers, but along the road's alignment the route identification markers are vertical ML2 fiberglass posts with reflective number stickers.

Most of the year it is currently managed as open only to highway legal traffic. The road is considered a highway by the forest service and is managed in accordance with the Highway Safety Act.

Proposed use is to allow mixed motor vehicle use on this segment to connect from NFSR ML2 33N61 to Lassen County Road 105 and then to connect through Road 105 to NFSR ML2 33N07 as a connector to an existing NFSR ML2 road system. This ML3 connector as described above is not a legal possibility as half of the segment resides on Lassen County Road 105 and Lassen County has not approved motor vehicle mixed use on it's forest highway system. As-is the segment of 33N06 that is NFSR will not provide access to anywhere but a County forest highway where it is currently against California Motor Vehicle Code to operate a non-highway legal vehicle upon forest highways.

General Considerations:

All motor vehicle operators need to be cognizant of the applicable state laws, and how they pertain to each age group, vehicle type, and national forest system road classification (see next bullet).

Through authorities delegated by the Secretary, the Forest Service may restrict or control use to meet road management objectives (36 CFR 212.5). The LNF currently manages this road as a highway, in accordance with the Highway Safety Act. The road is therefore subject to the provisions of the California Vehicle Code (CVC) for highways. The other portion of this connector route proposed to connect 33N61 via 33N06 to 33N07 is Lassen County Road 105. Lassen County currently manages the road as a highway and the provisions of the California Vehicle Code for highways.

State OHV Regulations: any motor vehicle must have a street-legal license plate to operate on highways. To operate on public lands, off of highways, motor vehicles must have either a street-legal license plate or a red sticker or a green sticker. For more information, see the CA State Parks Off-Highway Motor Vehicle Recreation site, available @ <http://ohv.parks.ca.gov/>

California has:

- requirements for ATV safety
- conditions for operating ATVs
- OHV equipment requirements
- OHV operation requirements

Summary of Findings:

Implementing the universal mitigation measures, especially improved signing and better communication, will reduce crash probability.

Road mitigation should be prioritized regardless of mixed use, along with implementing a comprehensive communication, management, and enforcement plan. Associated implementation costs will depend on the designated allowed use for the road.

The road is an observed 1-lane operational maintenance level 3 standard throughout the selected segment.

The road is maintained to a standard allowing efficient passenger car through traffic at speeds up to 30 mph for reasonable and prudent drivers on straightaways. Based on speeds and their associated risk for crash severity, designating the road as open only to highway-legal vehicles will provide the lowest crash probability and severity.

Factors Considered:

1. Operator considerations:

- Based on engineering judgment and experience/observation on other national forest management units, the LNF has an above average standard of road. Topologically, the unit is dry and flat with pronounced relief features, once roads are improved for management activities, the improvements are long lasting. Culverts are common drainage features on maintenance level 2 roads and standard on maintenance level 3 roads. Often roads on this national forest could be classified one maintenance level higher.
- Allowing non-highway-legal vehicles to use the road segment can involve

both non-highway-legal equipment and non-licensed operators, including children.

- In California, children under the age of 18 must take a prescribed safety course, be under direct supervision of an adult possessing appropriate safety certificate, or possess the appropriate safety certificate in order to operate an ATV. In addition, children under the age of 14 cannot operate an ATV without direct supervision by parent, guardian, or authorized adult.
- The Lassen National Forest currently manages this road as a highway, in accordance with the Highway Safety Act. The road is subject to the provisions of the California Vehicle Code (CVC) for highways.
- The current use on NFSR 33N06 appears to be consistent with state law and forest policy for operational maintenance level 3 roads.
- Many roads in this vicinity, including the study segment, were dry and contributed significant dust when driven over.

2. Crash history:

At the time of this analysis, there are no records of vehicle crashes on this road.

3. Traffic volume and type:

Non-highway-legal vehicles:

< 12 inch tread width < 50 inch tread width >50 inch tread width

Highway-legal vehicles:

< 12 inch tread width < 50 inch tread width >50 inch tread width

Passenger cars Commercial vehicles Recreation vehicles (RV's)

Vehicle distribution from a 1-hour observation July 29, 2008.

No vehicles observed.

4. Speed - Anticipated average speed (85th percentile):

The speed greatly varies, depending on the roadway conditions. The 85th percentile would be estimated at: 30 mph.

5. Road surface type:

The segment has a combination of native rock and red volcanic cinder aggregate surfacing. Portions of the traveled way are raised and the shoulders are soft and non-compacted. The segment was approximately 16' wide. The surface appeared well-maintained.

6. Intersections with other roads and trails:

The study segment begins at an intersection with NFSR ML2 33N61 and ends with an intersection with Lassen County Road 105.

33N61 and 33N47 are maintenance level 2 roads. They intersect with 33N06 which is signed on this segment as a maintenance level 2 road as well. 33N06 lacks the appropriate intersection signing needed to provide for the appropriate traffic management strategies of discourage off highway vehicle use.

33N06 is a maintenance level 3 road and lacks the appropriate ML3 route identification signing along it's alignment of discourage off highway vehicles.

7. Other roadway factors:

- Low vertical curves are present.
- Roadway alignment was adequate for the assigned maintenance level.
- The road was maintained with a traveled way width of 16', approximately.
- The road provides administrative access for a range allotment and commodity extraction. Summer and fall seasons will experience peak use, winter and spring can bring snowy and icy conditions along with snowmobile traffic.

8. Roadside conditions:

- The segment runs from rangeland to an open pine forest.
- Cross slope is 0-5%.
- Grade is 0-2%.
- Pine trees are ≤ 18 " and numerous volcanic rocks. Emergency run-out is possible.

9. Risk without mitigation:

Crash probability: High Med Low

Crash severity: High Med Low

Crash probability was assessed based on:

- Traffic volume, dust, rates of speed, alignment, sight distance, traveled way surface and width.

Crash severity was assessed based on:

- Roadway geometry (including embankments), difference in vehicle sizes, difference in speeds of OHVs and full-size passenger vehicles.

Alternatives and Mitigation Measures:

Alternatives and mitigation measures are presented to assist with safe road management. They are to be considered, should the agency have the appropriate time, workload, and funding based on competing priorities.

For all situations, the following mitigation measures apply:

- Clear communication and education to the visitors on allowed uses, safe motor vehicle use, and natural resources (informational signing and kiosks, maps, website, etc.).
- Improved route identification signing. Repair and replace devices as needed.
- Clear brush, especially along curves, to improve sight distance.
- Combine the appropriate enforcement measures with the allowed uses for the road.

- Coordinate with other agencies to improve enforcement consistency.
- Utilize a monitoring program to better determine the appropriate management strategy for the types of use, new technologies, changes in visitor demands, and resource protection measures.

In addition, these mitigation measures would apply to the following alternatives. Although the following alternatives are not comprehensive for the situation, they represent the most likely and/or practical options based on engineering judgment.

Alternative 1: Designate the road segments as “open to highway-legal vehicles only”. Manage the road in accordance with maintenance level 3 standards.

- Maintain all roadway signing to MUTCD standards.
- Consider designing new trails, a new trailhead, and/or a new camping area to provide better opportunities for non-highway-legal motor vehicle traffic to access the area and the adjacent maintenance level 2 roads.
- Approximate Implementation Cost: \$ 0
- Expected risk:

Crash probability: High Med Low

Crash severity: High Med Low

Alternative 2: Designate the road as “open to all motor vehicles”, including highway-legal and non-highway-legal vehicles. Downgrade the road segment in accordance with maintenance level 2 standards. This would require removing culverts and ditches, reconstructing the template and narrowing the roadway.

- Install appropriate route identification signing (vertical fiberglass type)
- Approximate Implementation Cost: \$ 75,000
- Expected risk

Crash probability: High Med Low

Crash severity: High Med Low

Final Comments:

Signing on national forest system roads should conform to the standards presented in the FS sign and poster guidelines (available @ http://fswb.wo.fs.fed.us/eng/roads_trails/signs_05/index.htm).

In addition, roads managed under the highway safety act, including the study segments here, must comply with the standards in the MUTCD (available @ <http://mutcd.fhwa.dot.gov/>).

According to the Sign and Poster Guidelines for the Forest Service (2005):

The following priorities are to be used to minimize the potential conflicts of mixed use:

- Provide separate facilities.
- Separate use periods. Roads may be designated for separate use periods such as season, weekday/weekend, or day/night. Notify the public of the locations, effective dates, times, and duration that the roads may or may not be used. Provide appropriate signs as shown in Chapter 3A.
- Manage concurrent use.

Upon designation and prior to allowing any mixed use, the Forest Supervisor is responsible for appropriately signing and mapping the route such that the dual traffic use is clear to all users.

Maps & Photos:

May 2008 DRAFT



0 0.5 1 Miles

Alternative 5 (Motorized Emphasis) Travel Management Lassen National Forest

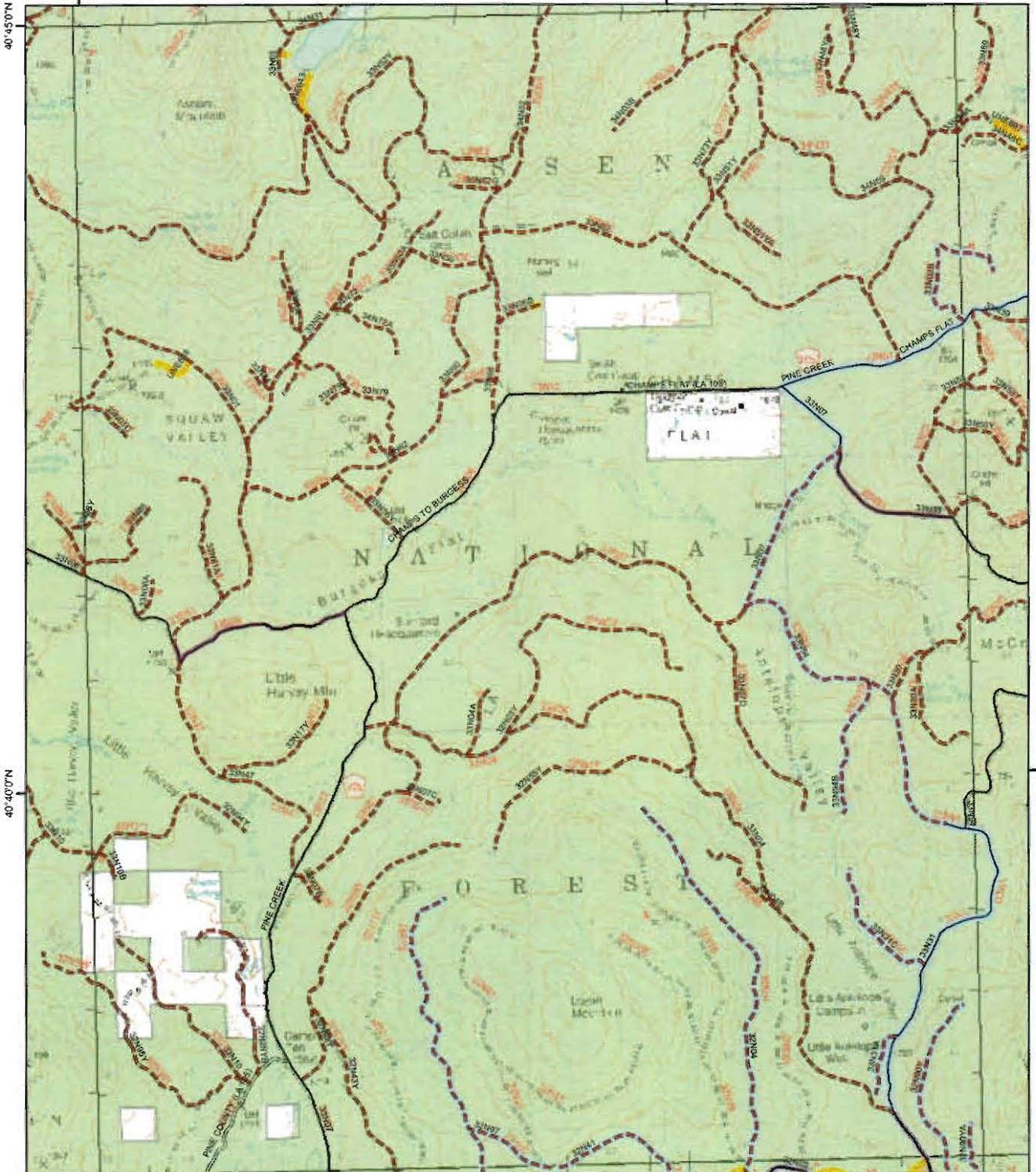
Champs Flat

- NFS Surfaced Roads or Non-NFS Jurisdiction Roads Open to Highway Legal Vehicles Only (Includes NFS Maintenance Level 3-5 Roads, State and County Roads, etc.)
- Road Open to All Highway Legal and Non-Highway Legal Vehicles
- County Jurisdiction Native Surfaced Road
- 4WD Trail Open to High Clearance Vehicles
- Non-Motorized Trail
- Unauthorized Routes to be Added to the National Forest Transportation System
- Mixed Use Analysis Pending

Restrict Season of Use to Summer/Fall (Winter Rec Trail)

- Motor Vehicles Prohibited
- Lassen National Forest
- Private Land

! Areas Open to Motorized Vehicle Use



121°00'W

120°55'W

40°40'N

40°40'N













Prepared by

Tim Dedrick

Tim Dedrick

Forest Transportation Planner/Civil Engineer
Lassen National Forest

Date *9/29/08*

Reviewed by
George Kulick

Date

Region 5 Qualified Engineer
Region 5 Office of Engineering