

Transportation Facilities

Introduction

This section of the environmental analysis examines the extent to which alternatives respond to transportation facilities direction established in the Modoc National Forest Land and Resource Management Plan. The Forest Plan transportation facilities direction was established under the implementing regulations of the National Forest Management Act (NFMA) and the National Forest Roads and Trails Act (FRTA). The National Forest Transportation System (NFTS) consists of roads, trails, and airfields. The NFTS provides for protection, development, management, and utilization of resources on the national Forests. There are other roads and trails existing on the Forest that are not currently part of the NFTS. Transportation facilities considered in this analysis include roads and trails that are suitable for motor vehicle use. This analysis considers changes needed to the NFTS to meet the purpose and need of this analysis. Decisions regarding changes in the transportation facilities must consider (1) providing for adequate public safety, and (2) providing adequate maintenance of the roads and trails that will be designated for public use. The analysis in this section focuses primarily on these two aspects of the NFTS

Regulatory Framework: Compliance with the Forest Plan and Other Regulatory Direction

Direction relevant to the proposed action as it affects transportation facilities includes the following:

- Title 36, Code of Federal Regulations, part 212 (36CFR212) is the implementing regulation for the FRTA, and includes portions of the Travel Management Rule published in the Federal Register on November 9, 2005. Part 212 provides criteria for designation of roads and trails. Providing safe transportation facilities and considering the affordability of maintaining the transportation facilities are two of the criteria.
- Forest Service Manual Sections 2350 and 7700 contain agency policy for management of the National Forest Transportation System. The policy requires the development of road management objectives (RMOs). The RMOs document the purpose of each road. The purpose for the road sets the parameters for maintenance standards needed to meet user needs, resource protection, and public safety. Forest Service Handbook 7709.58 describes the maintenance management system the Forest Service uses, and the maintenance standards needed to meet road management objectives (RMOs) for the road system. It also includes considerations for public safety.
- Regional Forester's letters, file code 7700/2350, dated 08/26/06 and 06/20/07, contain procedures national Forests in the Pacific Southwest Region will use to evaluate safety aspects of public travel on roads, when proposed changes to the NFTS would allow both highway-legal and non-highway-legal traffic on a road (motorized mixed use).
- The California Vehicle Code (CVC) regulates the use of motor vehicles in California, including motor vehicles used on the national Forests. The CVC sets safety standards for motor vehicles and vehicle operators. It defines the safety equipment needed for highway-legal and non-highway-legal vehicles. It also defines the roads and trails where non-highway legal motor vehicles may be operated.

Affected Environment

Background

People in northeastern California are used to driving to their destinations, because people and places are so far apart. Highways 299, 395, and 139 are important routes into and out of northeastern Lassen County and Modoc County.

Traveling east from Interstate 5 at Redding, California, State Highway 299 approaches the Modoc National Forest through Big Valley, passes over Adin Pass at an elevation of 5,200 feet, through the Upper Pit River valley, then up to an elevation of about 6,000 feet over Cedar Pass in the Warner Mountains to Surprise Valley and on to the Nevada border. Traveling north from Interstate 80 at Reno, Nevada, US Highway 395 moves onto the Modoc Plateau, across the Madeline Plains, and into the Upper Pit River valley, then proceeds along the east shore of Goose Lake to the Oregon border. State Highway 139 is an important cut-off route from Highway 299 to Klamath Falls, Oregon – the closest large town. These highways are important to local citizens and tourists, in both summer and winter. Local citizens use these routes as a means to reach amenities not available in the small rural communities. As truck routes used for import and export of goods and services, these highways are essential to the economic well-being of the area. They also connect to the Forest and county roads that provide access to the national Forest as well as other places favored by tourists and local residents.

The county road system within the interior of the national Forest provides public access and is valued for travel to recreation sites, mining, and livestock. These roads are gravel and most are safe for passenger cars when the road surface is dry. Most prominent of these county roads are Crowder Flat through Devil's Garden, Fandango Pass from the west side of the Warner Mountains east to Fort Bidwell, Tionesta Road from Highway 139 to Medicine Lake, and the Jess Valley road from Likely to Blue Lake. Other county roads that are not maintained for passenger car travel include a spur road from the west side of the Warner Mountains east to Lake City. Many Forest Service roads are tributary to the County road system.

Many Forest roads were constructed to permit access for fire suppression and to facilitate vegetation management. These roads also provide access for resource protection and for commercial activities or public uses such as grazing, mining, vegetation management, fire suppression and recreation outfitting and guiding. In addition, the system provides access for recreation activities such as hunting, fishing, skiing, bird watching, camping, hiking, and driving for pleasure. Roads also provide access for traditional rural activities such as woodcutting and hunting.

Public Safety

36CFR212.55 requires public safety be considered when designating roads, trails and areas for motor vehicle use. The proposed additions and changes to the NFTS have been evaluated for the effects on public safety. Refer to appendix A for specific information on each road or trail.

Motorized Mixed Use: The California Vehicle Code (CVC) requires motor vehicles operated on roads be highway legal and be operated by licensed drivers. The CVC has exceptions to those requirements for off-highway vehicles. The CVC allows the operation of non-highway-legal vehicles operated by unlicensed drivers on roughly graded roads. The Modoc National Forest consider roads maintained for high clearance vehicles as roughly graded and considers operation of OHVs on these roads to be consistent with state law. Roads maintained for passenger cars are not considered roughly graded, and operation of OHV's on those roads may not be consistent with state law.

The conclusion drawn from the mixed use analysis is that mixed use is safely occurring now. Continuing to allow mixed use would result in a low probability of a crash occurring on any of the roads proposed for mixed use. For maintenance level 2 roads the severity of the crash is likely to be low, and for maintenance level 3 roads the severity of the crash is likely to be moderate. Maintenance level 1 roads are closed to all use, and no mixed use is being proposed for maintenance level 4 & 5 roads.

Afforability

36CFR212.55 requires consideration of the need for maintenance and administration of the designated NFTS. Costs for the NFTS system include costs for needed maintenance work that has not been completed for various reasons (deferred maintenance) and costs of maintenance that should be performed routinely to maintain the facility to its current standard (annual maintenance). In addition, there may be additional costs associated with proposed changes to the NFTS (implementation costs) although this is not expected to occur. These costs may be for improving unauthorized routes that would be added to the NFTS, costs for proposed safety and resource improvements, costs for changing maintenance levels, and costs for closing routes to use by motor vehicles.

An estimate of the deferred maintenance for roads on the Modoc National Forest is \$128,053,267. Note that this number is based on a national random sample of deferred maintenance needs done in 2006. It is not statistically valid at the national Forest level; however, it can be used as an indicator of maintenance needs for the existing road system.

A more realistic estimate of the deferred maintenance needs for roads on the Modoc National Forest based on condition surveys completed during the last five years is as follows:

Table 3-2. Deferred Maintenance Needs for Roads

Maintenance Level	Dollar Amount	Source of Data
Maintenance level 4 & 5 roads	\$409,311	From condition surveys done on 100%
Maintenance level 3 roads	\$8,678,223	From condition surveys done on 98.46%
Maintenance level 1 & 2 roads	\$1,873,500	Estimated at \$500 per mile
Total estimated deferred maintenance needs	\$10,961,034	

Estimates of the annual maintenance costs for the road system for each alternative are included in appendix N. Forest-wide average costs per mile to maintain each operational maintenance level (ML) were developed and applied to the road system to calculate the estimated total cost. The average costs per mile are shown in the table below. The average costs per mile were derived using the Washington Office unit costs including overhead, and local information from condition surveys conducted in the field.

Table 3-3. Average Costs per Mile for Road Maintenance

Operational Maintenance Level	Annual Maintenance Cost
1	\$78
2	\$213
3	\$538

Operational Maintenance Level	Annual Maintenance Cost
4	\$828
5	\$828

Funding

The Forest currently maintains its road system through a combination of appropriated funds, cooperators, timber sale operators, and other funding as it becomes available. The current year (FY 09) allocation to the Forest is \$768,000. This is down slightly from \$779,000 in FY 08. In addition to work done with appropriated funds, a substantial amount of work is done on the road system by cooperators (primarily timber operators hauling from private lands) and timber sale operators. It is estimated that the work performed by cooperators is valued at \$30,000 annually, and from timber sale operators \$100,000 annually. Additionally, other funding from the Resource Advisory Committee (RAC), Legacy road funding, and other sources contribute about \$30,000 annually.

Environmental Consequences

Measurement Indicators

Measurement indicators are intended to address how each action (direct and indirect effects) and each alternative as the sum total of its proposed actions (cumulative effects) responds to the need for a safe and affordable NFTS. Direct effects of this decision are due to additions to the NFTS and changes in class of vehicle allowed on NFTS roads.

The measurement indicators used to display differences between the effects of the alternatives on NFTS roads are (1) public safety and (2) affordability.

Public Safety

Alternative 1

Direct and Indirect Effects

Because cross-country travel would not be prohibited, unauthorized routes may continue to be created. This could be a safety issue because the roads that are created have no standards and could be unsafe for users. With no seasonal closures to direct users away from potentially dangerous situations during wet weather, there is the potential for users to get stuck and be unable to get out. OHV users would continue to use all roads (NFTS and unauthorized) and the potential for accidents would exist on roads that are also used at higher speeds by highway vehicles. Law enforcement would continue to have a difficult time with enforcement and being able to keep track of where the public travels in motorized vehicles.

Cumulative Effects

Unauthorized routes would continue to be created and would continue to create potentially unsafe situations. Rutting would continue and on unauthorized routes would never be repaired because they are not part of the NFTS.

Alternative 2

Direct and Indirect Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. This would eliminate the use by the public of routes that have not been constructed and maintained to FS standards. Seasonal closures would prevent use of wet roads, which are potentially dangerous. This would lessen the chance that users would get stuck. OHV use would be limited to level 2 roads and to selected Level 3 roads where mixed-use analysis has been conducted. This may lessen the possibility of accidents between OHVs and highway vehicles. An MVUM will be available for use by the public and will make law enforcement for officers easier. Signs will be on all roads that are on the MVUM.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would be reduced on existing roads with seasonal closures. Signing the roads may reduce the number of people getting lost on the Forest.

Alternative 3

Direct and Indirect Effects

Because cross-country travel, which includes the use of unauthorized routes, would be prohibited, there would no longer be a safety issue resulting from their use. With no seasonal closures to direct users away from potentially dangerous situations during wet weather, there is the potential for users to get stuck and be unable to get out. OHV users would only use level 2 roads and the potential of accidents would be reduced because these roads are generally not used by vehicles traveling at high speeds. Law enforcement would only have to monitor use on the existing NFTS and the MVUM would make enforcement less difficult. Signs will be in place on all roads on the MVUM.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would continue on existing roads because there would be no seasonal closures. This may result in a dangerous driving situation. Signing the roads may reduce the number of people getting lost on the Forest.

Alternative 4

Direct and Indirect Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. This would eliminate the use by the public of routes that have not been constructed and maintained to FS standards. Seasonal closures would prohibit use during wet weather on roads where it is considered potentially dangerous to use. This would lessen the potential for users getting stuck. OHV use would be limited to level 2 roads which are generally not used by highway vehicles traveling at high speeds. Signs would be in place on all roads on the MVUM.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would be reduced on existing roads with seasonal closures. Signing the roads may reduce the number of people getting lost on the Forest.

Alternative 5

Direct and Indirect Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. This would eliminate the use by the public of routes that have not been constructed and maintained to FS standards. Seasonal closures would prevent use of wet roads, which are potentially dangerous. This would lessen users getting stuck. OHV use would be expanded to include all Level 3 roads, which may increase the possibility for accidents between highway vehicles and OHVs. Signs would be in place on all roads on the MVUM.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would be reduced on existing roads with seasonal closures. Signing the roads may reduce the number of people getting lost on the Forest.

Table 3-4. Miles Of Roads Available for Mixed use, by Alternative

Public Safety Measurement Indicator (Miles)	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Passenger car roads reduced to high-clearance road	0	0	0	0	0
High-clearance roads improved to passenger car roads	0	0	0	0	0
Roads changed to trails	0	0	0	0	0
Unauthorized routes added as roads (miles)	0	336	0	286	336
Unauthorized routes added as trails	0	0	0	0	0
MMU, high-clearance roads, high-severity crash	0	0	0	0	0
MMU, high-clearance roads, high probability of crash	0	0	0	0	0
MMU, passenger car roads, high-severity crash	0	0	0	0	0
MMU, passenger car roads, high probability of crash	0	0	0	0	0
MMU, consistent with CVC	3,764	4,103	3,764	4,050	4,103
MMU, may not be consistent with CVC	0	138	0	0	530

Affordability

Annual maintenance costs for unauthorized routes proposed to be added to the transportation system would be similar to the maintenance level 1 roads in table 3-4, above. These roads are roughly graded roads that would not require surface maintenance or brush removal. Annual maintenance consists of conducting a condition survey every 5 years, and installing a route marker every 10 years. Any other maintenance needs identified while conducting condition surveys or from other sources would be prioritized and dealt with the same as any maintenance needs on the existing transportation system. Implementation costs for proposed changes to the NFTS would be installing a sign on each road segment. Carsonite posts with a vertical number would be used. These cost about \$50 each installed. Alternatives 1 and 3 do not propose adding

any roads, so the implementation cost would be zero. Alternatives 2 and 5 propose adding 1,168 roads, the signs would cost \$58,400. Alternative 4 proposes adding 1,022 roads, the signs would cost \$51,100.

Additional implementation costs for all alternatives would be installing route markers where they do not currently exist. The NFTS currently has 4,055 maintenance level 1 & 2 roads.

Approximately 50 percent of these are missing a route marker. Approximately 2,023 vertical route markers are needed. This would cost approximately \$101,150. The NFTS currently has 216 maintenance level 3, 4 & 5 roads. Approximately 50 percent of these are missing a route marker. Approximately 108 horizontal route markers would be needed. These need to be a post with a horizontal sign attached. These signs cost approximately \$75 installed, for a total of \$8,100.

The table below displays the NFTS and estimated costs for each alternative. The total cost shown at the bottom of the table includes the estimated annual maintenance costs from appendix D for roads and trails, as well as implementation costs described previously.

Table 3-5. Miles of NFTS Roads and Estimated Annual Maintenance Costs, by Alternative

Affordability (\$ x 1000)	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
NFTS roads (miles)	4,579	4,918	4,579	4,865	4,918
2A. Annual road maintenance	\$1,130,550	\$1,155,975	\$1,130,550	\$1,152,000	\$1,155,975
2B. Implementation costs					
High-clearance roads improved to passenger car road	\$0	\$0	\$0	\$0	\$0
Passenger car roads reduced to high clearance road	\$0	\$0	\$0	\$0	\$0
Roads converted to motorized trails	\$0	\$0	\$0	\$0	\$0
Trails converted to roads	\$0	\$0	\$0	\$0	\$0
Roads removed from the NFTS	\$0	\$0	\$0	\$0	\$0
Trails removed from the NFTS	\$0	\$0	\$0	\$0	\$0
Cost of implementing MVUM	\$109,250	\$160,950	\$109,250	\$147,650	\$160,950
Total estimated cost for alternative	\$1,239,800	\$1,316,925	\$1,239,800	\$1,299,650	\$1,316,925

Alternative 1

Direct and Indirect Effects

Because cross-country travel would not be prohibited, unauthorized routes may continue to be created. With no seasonal closures to direct users away from roads during wet weather, there is the potential for users to get stuck and cause rutting. OHV users would continue to use all roads (NFTS and unauthorized), and the potential of accidents would exist on roads that are also used at higher speeds by highway vehicles. Law enforcement would continue to have a difficult time with enforcement and being able to keep track of where the public travels in motor vehicles.

Cumulative Effects

Unauthorized routes would continue to be created. Rutting would continue and on unauthorized routes would never be repaired because they are not part of the NFTS. Rutting on existing roads would continue, and the cost for maintenance could rise because of this. No signs would be put in place. Degradation on existing system roads would continue and budgets would most likely remain flat, which would prevent repair when needed in some cases. This could result in the conversion of roads from maintenance level 3 to a level 2, which require less maintenance. Appropriated funding would continue to be received at close to the current rate, along with cooperative funding from timber operators, Resource Advisory Committee, Legacy road funding and others.

Alternative 2

Direct and Indirect Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. This would eliminate use by the public of routes that have not been constructed and maintained to FS standards. The addition of 336 miles of unauthorized routes to the NFTS would require some maintenance. The potential expense of this maintenance is considered to be insignificant. Signing of both existing and proposed roads would add an additional cost. Seasonal closures would prohibit use during wet weather on roads where the likelihood of rutting is high. This would reduce rutting, which would in turn reduce maintenance costs. OHV use would be limited to level 2 roads and to selected level 3 roads where mixed use analysis has been conducted. OHV use on these roads is not expected to have any additional cost.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would be reduced on existing roads with seasonal closures. Maintenance costs may be reduced because of less rutting. The cost of signing roads would be higher initially and be reduced over time when signs are only replaced on an “as needed” basis. Appropriated funding would continue to be received at close to the current rate, along with cooperative funding from timber operators, Resource Advisory Committee, Legacy road funding and others.

Alternative 3

Direct and Indirect Effects

Because Cross-country travel, which includes the use of unauthorized routes, would be prohibited, there would no longer be use on any of the unauthorized routes. None of the unauthorized routes would be added to the NFTS so there would be no additional maintenance costs. With no seasonal closures to direct users away from roads affected by wet weather, there is the potential for rutting on existing NFTS roads, which would in turn require additional maintenance. OHV users would only use level 2 roads and there would be no effect from this vehicle use. Signing of all roads will be required once an MVUM is activated.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would continue on existing roads because there would be no seasonal closures. This may result in increased maintenance costs. If budgets decrease or remain flat, system roads would continue to degrade, and level 3 roads may have to be converted to level 2s. The cost of signing roads would be higher initially and be reduced over

time when signs are only replaced on an “as needed” basis. Appropriated funding would continue to be received at close to the current rate, along with cooperative funding from timber operators, Resource Advisory Committee, Legacy road funding and others.

Alternative 4

Direct and Indirect Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. This would eliminate the use by the public of routes that have not been constructed and maintained to FS standards. The addition of 286 miles of unauthorized routes to the NFTS would require some maintenance. The potential expense of this maintenance is considered to be insignificant. Seasonal closures would prohibit use during wet weather on roads where the likelihood of rutting is high. This would reduce rutting, which would in turn reduce maintenance costs. Signs will be required on all roads on the MVUM is activated. This alternative has the highest number of miles of seasonal closures. OHV use would be limited to level 2 roads; OHV use on these roads is not expected to have any additional cost.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would be reduced on existing roads with seasonal closures. The cost of signing roads would be higher initially and be reduced over time when signs are only replaced on an “as needed” basis. Appropriated funding would continue to be received at close to the current rate, along with cooperative funding from timber operators, Resource Advisory Committee, Legacy road funding and others.

Alternative 5

Direct and Indirect Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. This would eliminate the use by the public of routes that have not been constructed and maintained to FS standards. The addition of 336 miles of unauthorized routes to the NFTS would require some maintenance. The potential expense of this maintenance is considered to be insignificant. Seasonal closures would prohibit use during wet weather on roads where the likelihood of rutting is high. This would reduce rutting which would in turn reduce maintenance costs. OHV use would be expanded to include all Level 3 roads where mixed use analysis has been conducted. OHV use on these roads is not expected to have any additional cost.

Cumulative Effects

Cross-country travel, which includes the use of unauthorized routes, would be prohibited. Over time the unauthorized routes would revegetate. Rutting would be reduced on existing roads with seasonal closures. The cost of signing roads would be higher initially and be reduced over time when signs are only replaced on an “as needed” basis. Appropriated funding would continue to be received at close to the current rate, along with cooperative funding from timber operators, Resource Advisory Committee, Legacy road funding and others.

Compliance with the Forest Plan and Other Regulatory Direction

All alternatives are consistent with the Modoc LRMP.

Alternatives 2 and 5 may not be consistent with the California Vehicle Code. However, they are consistent with the Travel Management Rule 36 CFR 212.

Alternative 1 (No Action) would not address the issue of mixed use on maintenance level 3, 4 & 5 roads. Mixed use is currently occurring on these roads. Alternative 1 is not consistent with the Travel Management Rule 36 CFR 212.

The LRMP calls for providing a broad spectrum of recreational opportunities (Modoc NF LRMP, Standards and Guidelines, section 4-1 to 4-3 (Facilities)).

The applicable standards and guidelines from the Forest Plan for managing the Forest transportation system are listed below.

1. Provide and manage a Forest transportation system to achieve resource management objectives while protecting resource values.
 - a. Plan, design, and construct local roads to the lowest standard commensurate with intended use.
 - b. Maintain all Forest roads to their objective maintenance levels.
 - c. Provide for signing in accordance with the road management objectives and the MUTCD (Manual on Uniform Traffic Control Devices) standards.
2. Manage and maintain the transportation system to protect soil, water, and all other resource values. Close local roads as needed to meet these objectives. Develop road closure and OHV plans.