3.08. Transportation

Affected Environment

Introduction

This section of the environmental analysis examines the extent to which alternatives respond to transportation facilities direction established in the Tahoe National Forest Land and Resource Management Plan (LRMP). The LRMP 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 and trails. 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 to the transportation facilities must consider: 1) providing for adequate public safety, and 2) providing adequate maintenance of the roads and trails that would be designated for public use. The analysis in this section primarily focuses on these two aspects of the NFTS.

Analysis Framework: Statute, Regulation, Forest Plan, and Other Direction

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

Transportation Rule (36 CFR 212, 251, 261 and 295): The alternatives in this EIS are designed specifically to implement the requirements of the November 9, 2005, rule for travel management; *Designated Routes and Areas for Motor Vehicle Use*. Title 36, Code of Federal Regulations, Part 212 (36 CFR 212) is the implementing regulation for the National Forest Roads and Trails Act (FRTA), and it 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.

The Tahoe National Forest Land and Resource Management Plan (LRMP) goals call for providing a broad spectrum of recreational opportunities in accordance with need, demand, and type of use (LRMP page 97). Additionally, the Forest Plan calls for closures where obvious conflicts exist (LRMP page 97). Furthermore, the Forest Plan calls for providing safe recreational access (LRMP page 100).

Forest Service Manual Sections 2350 and 7700 contain agency policy for management of the National Forest Transportation System. The policy requires the development of trail management objectives (TMOs) and road management objectives (RMOs). The TMOs and RMOs document the purpose of each trail or road. The purpose for the trail or road sets the parameters for maintenance standards needed to meet user needs, resource protection, and public safety. Forest Service Handbook 7709.59, Road System Operation and Maintenance Handbook, describes the maintenance management

system the Forest Service uses and the maintenance standards needed to meet RMOs for the road system and includes considerations for public safety.

Regional Forester's Letters. Direction related to motorized mixed use is contained in Regional Forester's letters, file code 7700/2350, dated 08/26/06, 06/20/07, and 1/13/09. These letters provide 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 will allow both highway-legal and non-highway-legal traffic on a road (motorized mixed use).

The California Vehicle Code (CVC). The 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.

Background

A majority of Tahoe National Forest (TNF) visitors travel on NFTS roads. Roads have opened the TNF to millions of national and international visitors. Forest roads are also an integral part of the transportation system for rural counties. They provide access for research, fish and wildlife habitat management, grazing, timber harvesting, fire protection, mining, insect and disease control, and private land use in addition to recreation opportunities.

Roads in the NFTS are not public roads in the same sense as roads that are under the jurisdiction of State and county road agencies. NFTS roads are not intended to meet the transportation needs of the public at large. Instead, they are authorized only for the use and administration of National Forest System lands. Although generally open and available for public use, that use is at the discretion of the Secretary of Agriculture. Through authorities delegated by the Secretary, the Forest Service may restrict or control traffic to meet specific management direction (USDA Forest Service, Forest Service Manual 7731).

The TNF has approximately 2,900 miles of NFTS roads. Roads are defined as motor vehicle travelways over 50 inches wide, except those designated and managed as a trail. Trails, including off-highway vehicle (OHV) trails, are covered further in the recreation section (Chapter 3.07) of this EIS.

Some roads and trails are present on the acres where the decision to prohibit cross country travel may be made. These routes are not currently authorized for motor vehicle use by the public. There are also closed NFTS roads in these areas which are still receiving unauthorized motor vehicle use. These routes would continue experiencing use in the No Action Alternative, while some would be added to the NFTS in the action alternatives as roads or trails designated for motor vehicle use.

NFTS roads are each maintained in one of three categories: Maintenance Level 1 roads closed to motor vehicles in long term storage (closed roads), Maintenance Level 2 roads maintained for high-clearance vehicles only (high clearance roads), and Maintenance Level 3 to 5 roads maintained for standard four-wheel passenger cars (passenger car roads). Those roads maintained for standard passenger cars are subject to the Highway Safety Act and are considered by the Forest Service to be highways for purposes of the California Vehicle Code (CVC).

Costs and Funding for Road Maintenance

Need for Maintenance and Administration

NFTS roads must be maintained to avoid problems that can arise when they fall into disrepair. Each year, the TNF prepares a road maintenance plan, which lines out the road work for the year. Resource protection and public safety are the maintenance priorities. The Travel Management Rule (36 CFR 212.55) requires consideration of the need for maintenance and administration of the designated NFTS. Costs associated with administration of NFTS facilities 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). Routine maintenance includes items like the repair of drainage features such as water bars and the repair and/or replacement of signage. Administration needs include database management as well as permit issuances.

In recent years, annual road maintenance budgets have not been sufficient to maintain the entire road system to standard. This has led to an increase in deferred maintenance. Deferred maintenance is work that can be deferred without loss of serviceability. In past decades, commercial users (typically timber purchasers) maintained a substantial portion of the NFTS roads on the TNF during timber sale activities. With the decrease in timber sales, however, fewer roads are being fully maintained (meaning deferred maintenance needs increased). An estimated 28 percent of the TNF road system was fully maintained in 2007. Table 3.08-1 presents average annual maintenance costs for the TNF.

Table 3.08-1. Average Costs for Annual Road and Trail Maintenance in the Tahoe National Forest

Maintenance Class	Existing Miles	Cost per Mile	Annual Cost
Closed Roads, ML 1	567.1	$225	$127,597
High Clearance Roads, ML 2	1,492.8	$1,143	$1,706,270
Passenger Car, ML 3	522.4	$10,870	$5,678,488
Passenger Car, ML 4&5	196.0	$14,107	$2,764,972
Trail Open to All Trail Vehicles	133.9	$1,350	$180,765
Trail Open to ATVs	25.5	$1,275	$32,512
Trail Open to Motorcycles Only	168.8	$1,500	$253,200

Sources: National Road Maintenance Cost Guide adjusted for the Forest averages. Trails: Tahoe.

Availability of Resources

The Federal budget currently exceeds revenues. Revenues are expected to increase, but mandatory spending will increase at a faster rate. As a result, federal discretionary spending will decrease, likely leading the Forest Service to experience declining budgets through 2017. Figure 3.08-1 shows a graph of economic growth and mandatory program spending. The GDP is projected to increase, but Medicare/Medicaid and Social Security outlays are projected to increase at faster rates.

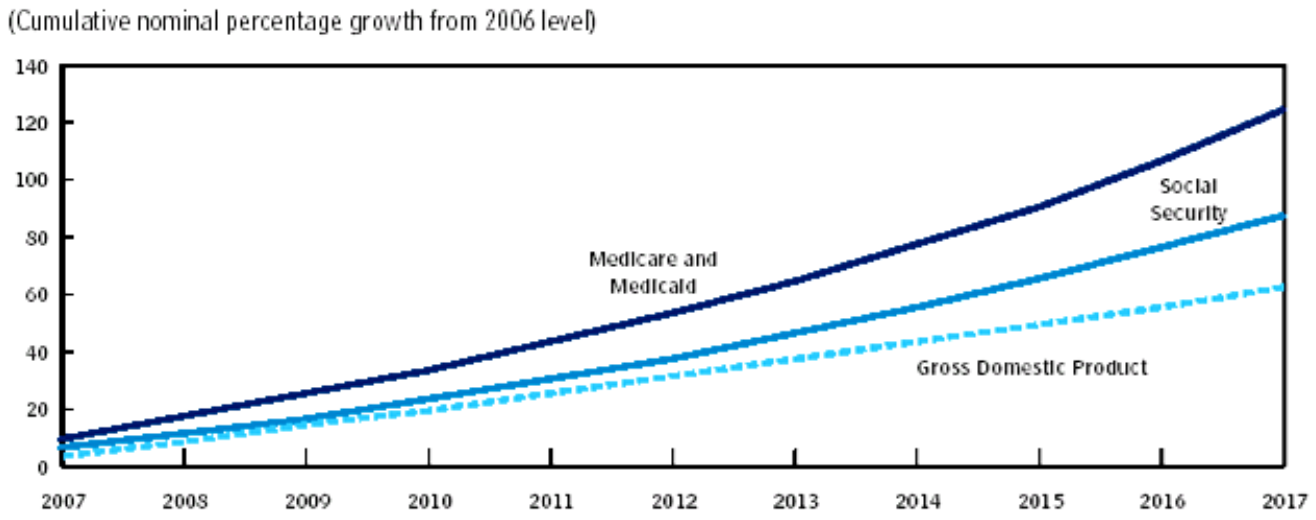

Figure 3.08-1. Congressional Budget Office's Projected Growth of the U.S. Economy and Federal Spending for Major Mandatory Programs, 2007-2017

Source: Congressional Budget Office. The Budget and Economic Outlook: Fiscal Years 2008-2017. January 2007.

Forest Service funding for road maintenance and administration has generally decreased over the last five years. Collections from commercial users can only be spent on roads where collections were made. Maintenance performed by non-Forest Service funds varies greatly from year to year and tends to be work associated with timber haul. For example, the purchaser may blade a road before hauling timber on it. Refer to Table 3.08-2.

Table 3.08-2. Tahoe National Forest's Past Years' Road Budgets (in nominal dollars)

	Fiscal Year				
Source:	**2003**	**2004**	**2005**	**2006**	**2007**
Base Allocation	1,075,644	903,000	751,000	719,000	924,300
Collections from Cooperative Agreements	1,006,629	535,324	187,728	226,260	310,373
Maintenance Performed by Non-Forest Service Funds	642,000	223,204	25,000	129,500	*

*Fiscal Year 2007 data was not required to be submitted.

Public Safety

Public safety affects the selection of geometric elements and design speed of roads, requires the examination of possible hazards and corrective actions needed, and identifies the needs for traffic control and maintenance activities (USDA Forest Service Handbook 7709.56).

Conflicts among Different Classes of Motor Vehicle Uses - Motorized Mixed Use

NFTS roads are designed primarily for use by highway-legal vehicles (motor vehicles that are licensed or certified for general operation on public roads within the State), such as passenger cars or log trucks. Some NFTS roads also provide recreational access for all-terrain vehicles and other non-highway-legal

motor vehicles. Motorized mixed use (MMU) is defined as designation of an NFS road for use by both highway-legal and non-highway-legal motor vehicles (USDA Forest Service, Engineering Publication EM-7700-30). Designating NFTS roads for motorized mixed use involves safety and engineering considerations.

The California Vehicle Code (CVC) requires motor vehicles operated on highways be highway-legal and be operated by licensed drivers. The CVC allows the operation of non-highway-legal vehicles operated by unlicensed drivers on roughly graded roads. The Forest Service considers roads maintained for high clearance vehicles (Maintenance Level 2) as roughly graded and considers operation of OHVs on these roads as consistent with state law.

The policy of Region 5 is to conduct a motorized mixed use analysis on all roads maintained for passenger cars where mixed use is proposed and on any high clearance roads that have a crash history or where mixed use was not allowed in the past. The baseline for the analysis will be Forest Service regulations and directives and applicable State and local laws. The qualified engineer determines how detailed the analysis is to be and may choose to do an evaluation based on factors in EM-7700-30 or other factors. *Qualified Engineer* is defined as "An engineer who by experience, certification, education, or license is technically trained and experienced to perform the engineering tasks specified and is designated by the Director of Engineering, Regional Office" (FSM 7705). The qualified engineer determines the factors to be considered for the specific road, road segment, or road system being analyzed. Based on the analysis conducted, the qualified engineer will determine the probability of a crash occurring and the severity of the crash. He or she may also provide mitigation measures that would tend to reduce the probability or severity of a crash. Under certain conditions, the qualified engineer may document engineering judgment without preparing a full engineering report. Otherwise, when issues are more complex, the qualified engineer will prepare a detailed engineering report.

Speed, Volume, Composition, and Distribution of Traffic

Roads on the TNF are used by a variety of vehicles, including logging trucks, wood chip vans, passenger cars, pick-up trucks, recreation vehicles and OHV's. Traffic volumes change depending on the time of year and activities occurring along the road. Forest roads experience the highest vehicle use when recreationists, logging trucks, wood chip vans, and agency personnel all need the same road at the same time, often in the summer.

Compatibility of Vehicle Class with Road Geometry and Road Surfacing

Roads are designed based on design vehicles (vehicles with representative weight, physical dimensions, and operating characteristics). Design vehicles are selected based on the largest vehicle likely to use the facility or facilities accessed by the proposed road. For example, if a new road is planned for a fuels project on the TNF, the design vehicle would be a wood chip van or logging truck.

Additionally, the volume, composition, distribution, and whether the road is subject to the Highway Safety Act are elements of traffic criteria used in the design of turnouts, road widths, surfacing, safety features, and traffic control. Roads designed and maintained for high clearance vehicles are not subject to

the Highway Safety Act. The applicability of the Highway Safety Act is determined during transportation system planning.

As stated, forest roads were designed primarily for highway-legal vehicles. Since some non-highway-legal vehicle classes differ from highway-legal vehicles, the qualified engineer considered how those different classes can be expected to function depending on the road characteristics.

Effects Analysis Methodology

Transportation Specific Assumptions

- Any motor vehicle use authorized by state law is occurring on the NFTS unless there are Forest specific prohibitions.
- Motor vehicle use by special use permit or other permitted activities are outside the scope of this decision (for example, fuelwood gathering, motorized SUP events, recreation residences, etc.)
- Eligible motorized trail vehicle classes are high clearance trail vehicles (4WD, etc.), ATVs, and motorcycles. Low clearance highway legal vehicles are not prohibited on trails but would not be found using trails.
- There is some cost for maintenance that will have to be borne by the Forest Service for any route open to motor vehicle use by the public.
- State law regulating motor vehicle drivers sets the standard of care for the safety of drivers themselves and other users of the NFTS.

Transportation Sources of Information

Information on individual roads and trails can be found in Appendix A (Site Specific Road, Trail and Open Area Information) and Appendix J (Roads Analyzed for Motorized Mixed Use). Additional information including the INFRA Database and previous NEPA decisions is part of the project record.

Measurement Indicators

Measurement Indicators are intended to address how each action individually (via direct and indirect effects) and each alternative as the sum total of its proposed actions (via cumulative effects) respond 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 and trails. Conflicts with other resources are examined in other sections.

The measurement indicators used to display differences between the effects of the alternatives on NFTS roads and trails are: 1) Public Safety, and 2) Affordability.

Public Safety

36 CFR 212.55 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 their effects on public safety. Refer to Appendix A (Site Specific Road, Trail and Open Area Information) for specific information on each road or trail considered to be added to the NFTS.

Affordability

36 CFR 212.55 requires consideration of the need for maintenance and administration of the designated NFTS. NFTS expenses include needed maintenance work that has not been completed (deferred maintenance) and costs of routine maintenance to maintain the facility at its current standard (annual maintenance). Proposed changes to the NFTS may have additional implementation costs such as sign installation and resource improvements.

A current estimate of road deferred maintenance on the TNF is $115,000,000. This value is based on a random sample of deferred maintenance needs taken nationally in 2007; 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.

Environmental Consequences

Forest Plan and Other Regulatory Direction

All the action alternatives comply with the Forest Plan and the Transportation Rule. Additionally, roads analyzed for motorized mixed use were assessed for compliance with the California Vehicle Code (see Appendix J – Roads Analyzed for Motorized Mixed Use).

Public Safety

Direct and Indirect Effects

Prohibiting Cross Country Travel. Alternative 1 would continue to have unauthorized cross country travel on 754,066 acres. This would affect public safety of the off road traveler in that those risks and hazards of unknown situations continue to exist. All of the action alternatives prohibit cross country travel on 833,392 to 836,000 acres. Motorized travel would occur only on designated routes, NFTS roads and trails, receiving periodic maintenance. The periodic maintenance includes the identification and remediation of known hazards. It is common for the users of the designated routes to identify or remove hazards such a fallen trees and rocks from the traveled way. Designated routes also have either been engineered and constructed utilizing safety standards or, at a minimum, have been reviewed for safety before having been added to the transportation system.

Additions to the NFTS. The new roads and trails proposed in Alternatives 2, 4, 5, 6, and 7 were evaluated for safety and compliance with design standards (see Appendix A, "Site Specific Road, Trail and Open Area Information," for specific routes). None of the roads or trails was found to present an unacceptable safety risk. Likewise, none of the Maintenance Level 1 Roads reopened for motorized mixed use present an unacceptable safety risk, or does changing the season of use on roads or the prohibition on cross country travel. All roads proposed for additions would be managed as Maintenance Level 2 and as such not subject to the Highway Safety Act. Refer to Table 3.08-3 for a summary comparison of alternatives with respect to safety.

Table 3.08-3. Summary comparison of alternatives with respect to public safety

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Miles of passenger car roads (Maintenance Level 3-5) changed to high clearance roads (Maintenance Level 2)	0	157.2	0	3.4	157.2	122.0	3.4
Additions to the NFTS	0	54.6	0	22.6	75.4	48.3	36.7
Maintenance Level 1 Roads Reopened to Motor Vehicles	0	0	0	0.1	93.4	11.4	1.1
Miles of Passenger Car Road with Change in Allowed Classes of Vehicles from "Highway Legal Only" to "All Vehicles" - By Approving Motorized Mixed Use (MMU)	0	241.5	0	3.4	241.5	130.8	3.4
Miles of passenger car roads with high crash severity Motorized Mixed Use (MMU)	0	174.1	0	0	174.1	4.1	0
Miles of passenger car roads with high crash probability Motorized Mixed Use (MMU)	0	32.0	0	0	32.0	0	0
Number of MMU roads consistent with California Vehicle Code Division 16.5, Combined Use	0	56	0	1	56	53	1
Number of MMU roads not consistent with California Vehicle Code Division 16.5, Combined Use	0	28	0	0	28	10	0

Establishment of motorized "Open Areas": The establishment of 2,649 or 2,589 acres of "Open Areas" in Alternative 2 or 6 respectively would affect public safety in that the areas have been reviewed for safe use by motorized traffic. These "Open Areas" are not known to have health risks or unusual circumstances that pose safety concerns for prudent users. The other action alternatives would not establish "Open Areas" and do not affect public safety.

Change in Class of Vehicle from Approval of Mixed Use. Alternatives 2 and 5 present the greatest risks to public safety from mixed use crashes, as they contain the most miles where motorized mixed use would occur on the roads with higher crash severities, higher crash probabilities or both. Alternative 6 follows with fewer roads proposed for motorized mixed use evaluated as having higher crash severities and probabilities. It also has fewer roads that are inconsistent with Combined Use of Division 16.5 OFF-HIGHWAY VEHICLES of California Vehicle Code (CVC) than Alternatives 2 and 5. The remaining Alternatives, 1, 3, 4, and 7, all have less than 3.4 miles of road with a change in class from "Open to Highway Legal Vehicles Only" to "Open to All Vehicles." (See Appendix J: Roads Analyzed for Motorized Mixed Use).

Change in Class of Vehicles from Reclassifying the Maintenance Level. Reclassifying passenger car roads to high clearance roads does not present a motorized mixed use safety risk in and of itself. By changing these roads, motorized mixed use would be allowed on roads where use previously was not designated. These roads were also analyzed for motorized mixed use. A road that is reclassified from passenger car (ML 3) to high clearance (ML 2) is no longer subject to the Highway Safety Act. (See Appendix J: Roads Analyzed for Motorized Mixed Use)

Changes in Season of Use: The proposed changes to the seasons of allowed use in Alternatives 4, 5, and 6 were not intended to serve as a safety measure designed to reduce accidents rates. The Forest does not have figures on accident rates related to weather conditions. It is likely that fewer accidents, attributable to winter weather conditions would occur compared to Alternatives 1, 2, 3 and 7.

Amendment to the Forest Plan. An amendment to the Forest Plan would not affect public safety in a meaningful or measurable way.

Cumulative Effects

The cumulative effects on public safety of all the reasonably foreseeable actions in Appendix H and the actions proposed in this EIS would maintain and improve public safety.

Affordability

Direct and Indirect Effects

All of the alternatives require approximately $10 million annually to fully maintain the designated motorized routes. See Table 3.08-4. Alternatives 1, 3, 4, and 7 cost the most to maintain at over $10.7 million. These alternatives have higher costs since fewer roads would be reclassified from Maintenance Level 3-5 to Maintenance Level 2 compared to Alternative 2, 5 and 6. Maintenance Level 3-5 roads account for the major amount of the expense in these alternatives. Alternatives 2, 5, and 6 each cost approximately $9.5 million annually to maintain, or about $1.2 million less than the other alternatives due primarily from changing Maintenance Level 3-5 roads to Maintenance Level 2.

Changes in class of vehicles allowed on passenger car roads by permitting motorized mixed use could increase annual maintenance slightly on some roads. It is difficult to determine what user related maintenance is attributable to motorcycles and four-wheel drive vehicles by whether they are licensed for highway use or not.

Prohibiting Cross Country Travel. Alternative 1 would continue to have unauthorized cross country travel on 754,066 acres. This would not affect affordability/cost of maintenance of the existing NFTS roads and trails. However, costs are incurred by the Forest Service for the repair and prevention of unacceptable resource damage on unauthorized routes and cross country travel. The action alternatives would prohibit cross country travel on 833,392 to 836,000 acres, reducing use on 869 miles of known unauthorized routes and future user created routes. Prohibiting motorized cross country travel would increase traffic on the designated routes only slightly since that same traffic is already using the designated system, to large extent, to gain access to cross country locations. Prohibiting cross country travel in all the action alternatives would likely affect the affordability of the designated system slightly by increased user related maintenance costs. Cost incurred restoring and rehabilitating damage caused by cross country travel, motorized use of unauthorized routes, and preventing additional damages would be reduced by a similar or greater amount.

Additions to the NFTS. Table 3.08-4 compares the cost maintaining the NFTS by alternative. The costs reflect changes to the system resulting from changes to maintenance levels, reopening Maintenance Level 1 roads, implementation costs and the mitigation costs listed in Appendix A, "Site Specific Road, Trail and Open Area Information," for specific routes by each alternative.

Table 3.08-4. Summary comparison of alternatives with respect to affordability of annual maintenance, implementation, and mitigations

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Maintenance Costs by Miles of Roads							
Closed, ML 1	567.1	567.1	567.1	567.0	473.7	555.7	566.0
High Clearance, ML 2	1492.8	1655.0	1492.8	1499.9	1748.4	1639.3	1497.3
Passenger Car, ML 3	522.4	365.2	522.4	519.0	365.2	400.4	519.0
Passenger Car, ML 4&5	196.0	196.0	196.0	196.0	196.0	196.0	196.0
NFTS roads (total miles)	2778.3	2783.3	2778.3	2781.9	2783.2	2791.4.3	2778.3
Annual Road Cost	**$10,277,760**	**$8,754,444**	**$10,277,760**	**$10,248,897**	**$8,840,217**	**$9,116,553**	**$10,245,699**
Maintenance Costs by Miles of Trails							
High Clearance 4x4	133.9	158.1	133.9	139.4	178.5	156.4	150.8
ATV's < 48"	25.5	29.9	25.5	28.4	44.2	38.8	28.9
Single Track Motorcycle	168.8	194.8	168.8	183.0	194.9	189.9	185.3
Motorized Trails	328.2	382.8	328.2	350.8	417.6	385.1	365.0
Annual Trail Cost	**$466,343**	**$543,623**	**$466,343**	**$497,130**	**$589,410**	**$540,735**	**$518,243**
Annual Road and Trail Cost Total	**$10,744,103**	**$9,298,067**	**$10,744,103**	**$10,746,027**	**$9,429,627**	**$9,657,288**	**$10,763,942**
Implementation Costs							
Passenger car roads reclassified to ML 2	$0	$82,500	$0	$2,500	$82,500	$77,500	$2,500
MVUM Publication	$0	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
MMU Implementation	$0	$100,000	$0	$0	$100,000	$54,000	$0
Total Implementation Cost	**$0**	**$282,500**	**$100,000**	**$102,500**	**$282,500**	**$231,500**	**$102,500**
Mitigation Costs							
Mitigations Costs from "Appendix A"	$0	$220,150	$0	$42,950	$219,500	$145,750	$145,700
Total Implementation and Mitigation Costs	**$0**	**$491,150**	**$100,000**	**$135,450**	**$510,500**	**$355,750**	**$238,200**
Total estimated cost to implement and maintain annually (millions)	**$10.74**	**$9.80**	**$10.84**	**$10.89**	**$9.93**	**$10.03**	**$11.01**

Establishment of motorized "Open Areas": The establishment of 2,649 or 2,589 acres of "Open Areas" in Alternative 2 or 6 respectively would not affect affordability of the transportation system. Open areas are not considered an element of NFTS roads or trails. The Forest Service would incur cost to delineate, administer, and maintain these areas. The other action alternatives would not establish "Open Areas" and do not affect affordability.

Change in Class of Vehicle from Approval of Mixed Use. Most of the costs for designating passenger car roads for motorized mixed use on roads (changing class of vehicles allowed) would be associated with signing, clearing sight distance in curves and surface grading. The typical signs used to alert drivers to "Share the Road," would be placed at sufficient intervals to keep drivers aware and the

signs to delineate the extent of allowed motorized mix use. The estimated average cost to implement the motorized mixed use on passenger car roads is $2,000 per road designated. Alternatives 2 and 5 would change the class of vehicles allowed on 50 passenger car roads. Alternative 6 would change the class of vehicles on 27 roads to allow mixed use. No roads would be changed with Alternatives 1, 3, 4, or 7.

Costs associated with producing the Motor Vehicle Use Map (MVUM) are primarily from labor, as the INFRA database would need to be updated and draft maps produced and edited. The Regional Office would pay for printing.

Change in Class of Vehicles from Reclassifying the Maintenance Level. The key costs associated with reclassifying passenger car roads to high clearance roads are the signing, equipment and administrative costs to change the entrance strategy from accepting to discouraging passenger car travel. For this estimate, two signs were assumed to need replacing for every road; each sign costs about $300 to install and about $1,800 equipment and operator time to alter the road to high clearance. Also about $100 administrative and data steward's time would be needed to update the INFRA database. In total, approximately $2,500 would be needed to make the change from passenger car to high clearance road for each road. Alternatives 2 and 5 would reclassify 33 ML 3 roads to ML 2. Alternative 6 would reclassify 31 roads. Only one road would be reclassified in Alternatives 4 and 7, and none in Alternatives 1and 3. See Appendix J: Roads Analyzed for Motorized Mixed Use.

All of the roads proposed for reclassification from suitable for passenger cars to high clearance vehicles are Objective Maintenance Level 3 roads. Except for several staging area and campground roads these are forest collector routes or primary forest roads. These roads are not only maintained to provide passenger car access to destinations but are maintained at these higher levels for efficiency of use for activities such as commercial haul and fire suppression access. These roads have higher levels of capital investments in construction of the road prism and surfacing compared to the typical high clearance forest road. Some degree of loss in this capital investment is likely over time resulting from lower maintenance effort expended to maintain the roads at the ML 2 standard. The trend would be corresponding losses in efficiency in these roads resulting in higher user costs and higher cost to return the roads to original condition for safe use during scheduled activities.

Eighteen of these same primary roads in Alternatives 2, 5 and 6 that would be reclassified to a lower maintenance level have cost share easements. This where a private company holds a title easement, has shared in the construction costs and participates in the maintenance costs of these roads. These roads would experience the same trends in loss of capital investment and increased user costs.

Changes in Season of Use. Wet weather seasonal restrictions on roads and trails in Alternatives 4, 5 and 6 have potential to decrease road maintenance costs compared to Alternatives 1, 2, 3, and 7. The amount potential cost reduction is difficult to quantify. User generated maintenance costs could be reduced by increasing the interval of scheduled maintenance items such as grading the surface and repairing waterbars when roads and trails receive less damaged caused by wet weather use. Traffic drops off considerably once winter snow blankets the forest and vehicles no longer have access to most of the road and trail system. The season of allowed use in Alternatives 4, 5, and 6 coincides with the winter slow

down in traffic. Ill-timed traffic on a saturated road can cause damage that is costly to repair and increase the frequency of maintenance required whether or not it occurs during a wet weather restriction.

Amendment to the Forest Plan. An amendment to the Forest Plan to lift seasonal traffic restrictions would potentially result in a very slight increase in cost of maintenance on 8.6 miles of NFTS roads. The increase in cost would be the result of an increase in time motorized traffic is allowed to use these 8.6 miles of roads in Alternatives 2, 5, and 6. Motorized traffic would be allowed on 8.6 miles of Maintenance Level 2 for two additional months each year in Alternatives 5 and 6, and for three additional months each year in Alternative 2. The potential increase in maintenance cost would be the result of an increased maintenance interval of scheduled traffic generated maintenance of items such as waterbars, ditches, or drainage dips.

Cumulative Effects

The cumulative effects on affordability of all the reasonably foreseeable actions in Appendix H and the actions proposed in this EIS would have only minor affect to the overall affordability of the forest transportation system.

Lower overall maintenance costs are seen in the alternatives that reclassify the maintenance of passenger car roads to lower standards for high clearance vehicles and by imposing a season of use. The more miles of road reclassified to a lower standard, the lower the overall maintenance cost. Where there are savings in the projected overall annual maintenance cost in Alternatives 2, 5 and 6 compared to Alternatives 1, 3, 4 and 7, those saving would likely be offset by: the increased costs to return these roads to the higher maintenance standards during scheduled activities, increased user costs due to decreased efficiency (slower travel and higher vehicle repair cost), the increased mileages added to the system in those alternatives, cost of mitigations and implementation, and potential loss of capital investment in road surfacing.

Summary of Effects Analysis across All Alternatives

Table 3.08-5 summarizes the effects analysis for the transportation environment by ranking each alternative regarding how well it provides for each of the indicators. This summary is not meant to convey that the indicators are equal in importance. The following rankings were used: A score of 7 indicates the alternative has the least impact for the transportation environment to the indicator. A score of 1 indicates the alternative has the most impact for the transportation environment related to the indicator. A score of 0 indicates the indictor does not apply.

Table 3.08-5. Comparison of Effects to Transportation

Indicator	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Affordability – Annual Maintenance	4	7	3	2	6	5	1
Affordability – Implementation	7	1	6	5	2	3	4
Safety	6	2	7	5	1	3	4
Average	**5.7**	**3.3**	**5.3**	**4.0**	**3.0**	**3.7**	**3.0**