3.2 Transportation Facilities

3.2.1 Introduction

This section of the environmental analysis discloses the effects of the five alternatives on management and maintenance of the roads and motorized trails (i.e., transportation facilities) which make up the National Forest Transportation System (NFTS or system). It addresses the extent to which the alternatives respond to direction related to transportation facilities established in the LRMP and the Travel Management Rule. It also considers whether alternative proposals to add new facilities to the NFTS or make changes to the existing NFTS provide adequate public safety, and result in a sustainable, affordable system.

The LRMP transportation facilities direction was established under the implementing regulations of the National Forest Management Act (NFMA) and the Forest Roads and Trails Act (FRTA). The NFTS consists of roads, trails and areas. The NFTS provides for protection, development, management and utilization of resources on the National Forests. There are other roads and trails existing on the SNF that are not part of the NFTS such as State and county public roads, private roads, permittee roads, and Federal Energy Regulatory Commission (FERC) licensee roads. Transportation facilities considered in this analysis include roads, trails and areas that are suitable for motor vehicle use. Decisions regarding changes in the transportation facilities must consider the following measurement indicators: 1) provide for adequate public safety and 2) provide adequate maintenance of roads, trails and areas 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 LRMP and Other Regulatory Direction

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

Travel Management Rule, Subpart B (36 CFR 212)

The responsible official shall consider the effects of designated roads, trails and areas on public safety, access needs, conflicts among uses of National Forest lands, the need for maintenance of roads, trails and areas and the availability of resources for that maintenance and administration of roads, trails and areas.

For the designation of roads, trails and areas, the responsible official shall consider minimizing damage to soil, watershed, vegetation and other forest resources and minimizing conflicts among different classes of motor vehicles use on NFS lands and neighboring Federal lands.

For the designation of roads, the responsible official shall consider the speed, volume, composition and distribution of traffic and the compatibility of vehicle class with road geometry and road surfacing.

Forest Service Manual Sections 2350 and 7700 contain Agency policy for management of the NFTS. The policy requires the development of trail management objectives (TMO) and road management objectives (RMO). The TMOs and RMOs document the purpose of each trail or road, and how management will meet the designated purpose for the transportation facilities. 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 2309.18 describes the technical guidelines for the survey, design, construction, maintenance and assessment of NFTS trails to meet TMOs including considerations for public safety. Forest Service Handbook 7709.58

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

Regional Forester's Letters, file code 7700/2350, dated 08/26/06, 06/20/07 and 01/13/09 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 will allow both highway-legal and non-highway legal traffic on a road (motorized mixed use).

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. Motor vehicle use on the SNF falls under the California Vehicle Code.

National Forest Management Act (NFMA), specifically for OHV management, requires this use be planned and implemented to protect land and other resources, promote public safety and minimize conflicts with other uses of the NFS lands. The NFMA also requires that a broad spectrum of forest and rangeland-related outdoor recreation opportunities be provided that respond to current and anticipated user demands.

Sierra Nevada Forest Plan Amendment (SNFPA) establishes the direction to prohibit motor vehicle travel off of designated routes, trails and areas. Unless otherwise restricted by current forest plans or other specific area standards and guidelines, cross-country travel by over-snow vehicles would continue.

Sierra National Forest Land and Resource Management Plan (LRMP) provides goals and objectives for the transportation facilities and requires a broad range of developed and dispersed recreation opportunities in balance with existing and future demands. In addition, the LRMP sets the Standards and Guidelines (S & G) to be used during the implementation of the Plan.

Effects Analysis Methodology

The Effects Analysis Methodology focuses on the assumptions and indicators measures for addressing the direct, indirect and cumulative effects of implementation of each of the alternatives. To present the conclusions of the analysis in the environmental consequences section, the direct and indirect effects of implementing the alternative as a whole are displayed. The cumulative effects of this action are in combination with the effects of past, present and reasonably foreseeable future actions.

Transportation Specific Assumptions

1. Any motor vehicle use authorized by State law may take place on the NFTS unless there are SNF specific prohibitions. State law regulating motor vehicle drivers sets the standard of care for the safety of themselves and other users for traveling on the NFTS.
2. Motor vehicle use by special use permit or other permitted activities are outside the scope of this proposal (fuelwood gathering, motorized trail events and other activities under special use permit, commercial road use permit, license and mining activities).
3. There are two categories of roads open for motor vehicles on the SNF. They are roads "Open to Highway-legal Vehicles Only" and roads "Open to All Vehicles."
4. The Forest Service requires roads maintained for passenger cars to allow only highway registered vehicles and be operated by licensed drivers to follow all the provisions required under the California Vehicle Code (CVC) as a highway.

5. FS Pacific Southwest Region and California Highway Patrol (CHP) consider maintenance level two (ML2) roads maintained for high clearance vehicles as rough graded, and non-highway legal vehicle use is consistent with State law under CVC Division 16.5.
6. All roads allowing a change in the intended use from passenger cars only to allow non-highway legal vehicles use require a motorized mixed use analysis. Each mixed use analysis evaluated current use, past crash histories, right-of-way issues, road maintenance practices and general access needs. This process is accomplished by the Forest Qualified Traffic Engineer using *Guidelines for Engineering Analysis of Motorized Mixed Use on National Forest System Roads*.
7. Segments of passenger car roads may be designated for motorized mixed use under CVC 38026 (combined use) where an engineering analysis has been completed to inform the responsible official of any safety concerns. When Highway Safety Act roads are designated for mixed use, the following additional items are required under CVC 38026 for ATVs: operators must be licensed drivers; operators must have liability insurance; only operate during daytime; have an operational stop light; and have rubber tires. The mixed use under CVC 38026 evaluations required a more thorough analysis due to the primary use vehicle on these roads are standard highway-legal vehicles operated by licensed drivers, and the normal driver does not expect to encounter ATV traffic. This process is also accomplished by the Forest Qualified Traffic Engineer using *Guidelines for Engineering Analysis of Motorized Mixed Use on National Forest System Roads*.
8. There are three classes of vehicle for use on motorized trails. They are: 1) high clearance vehicles (four-wheel drive vehicles greater than 50" wide), 2) ATVs (vehicles less than 50" wide) and 3) motorcycles. Low clearance highway-legal vehicles are not prohibited on motorized trails; however, user discretion is advised via signing.
9. Neither the SNF road or motorized trail budgets are expected to increase appreciably in the foreseeable future; however, the SNF will continue to apply for State grants to help maintain and manage roads and motorized trails.

Data Sources

1. LRMP road management guidelines
2. Title 36 Code of Federal Regulations, Section 212, Subpart B
3. SNF Estimated Costs for Road Maintenance
4. SNF Estimated Costs for Trail Maintenance

Transportation Facility Indicator Measures

Public safety and transportation system affordability (annual maintenance and implementation cost) are the two important factors which distinguish the overall effects of each of the five alternatives to the transportation facility. The measures and their indicators are described below. Indicator measures are intended to address how each alternative as the sum total of its proposed actions respond to the LRMP, significant issues identified in scoping and Subpart B of the Travel Management Rule.

Measurement Indicator 1: Public Safety

Short-term timeframe: 1 year

Long-term timeframe: 20 years

Spatial boundary: Cross-country motor vehicle travel area (Figure 1-3)

Indicators: Public Safety

Rationale: The effects measurement indicator is based on NFMA and Travel Management Rule requirements, compliance with Forest Service manual policies, the CVC and significant issues raised during internal and public scoping.

Description: This effects measurement indicator looks at the impacts of proposed changes to the NFTS from a public motor vehicle safety perspective.

Method: Safety conflicts between passenger cars and non-highway legal vehicles may affect the public operational safety on various roads and motorized trails. These concerns arise as the expectations of drivers and operators of various vehicles may differ greatly. Potential conflicts on ML 2, rough graded roads between licensed highway drivers and ATV/Quad operators could occur. CVC Division 16.5 allows under age operators to use green/red sticker vehicles.

Of particular concern is the conflict between licensed highway drivers and green/sticker operators on roads maintained for passenger cars under the Highway Safety Act. In this case CVC 38026 allows green/red sticker (ATV) operators to use these road segments if they are designated safe by the Forest Service and California Highway Patrol. In additions, the ATV operators must have a regular drivers license, must has extra safety devices and only operate during day light.

Traffic safety concerns for roads to be designated as mixed use under CVC Division 16.5 are evaluated by an Engineering Judgment by the Forest Qualified Engineer. Roads to be operated under both the Highway Safety Act and CVC 38036 are informed by an Engineering Report which is prepared by the Forest Qualified Engineer and approved by the Regional Office.

There are ways of minimizing some of the conflicts including roadside brushing, surface scarifying, safety signing and direct education. The detailed discussion of the traffic options can be found in Appendix I.

Measurement Indicator 2: Affordability

Short-term timeframe: 1 year

Long-term timeframe: 20 years.

Spatial boundary: Cross-country motor vehicle travel area (Figure 1-3)

Indicators: Costs

Rationale: The proposed additions and changes to the NFTS are evaluated for their effects on affordability. Both the expected annual costs of maintaining the NFTS and the initial implementation costs are evaluated. Continuing annual costs include routine costs to maintain the road and trail system to standard over a long period of time. One time initial implementation costs are the costs required to bring the transportation system to its operating level the first time.

Roads converted to motorized trails, as well as unauthorized routes added as motorized trails, typically have characteristics and conditions that match the vehicle class specified. This includes width, roughness and recreation experiential attributes. Designation as a road or motorized trail will ensure that future management and maintenance activities will maintain desired characteristics over time.

It would be expected that there will be nominal costs for putting a road or trail into service since most of the travelways being considered are already receiving traffic similar to that being

proposed for permanent use. Most of the necessary work involves protecting natural and cultural resources including work such as drainage structures, tread padding, signing, tread armoring and protection barriers.

Description: This measurement indicator looks at the operation, maintenance and administration costs of proposed changes of the designated NFTS.

Method: The proposed additions and changes to the NFTS are evaluated for their effects on affordability. Both the expected initial implementation costs and the annual costs of maintaining the NFTS are evaluated. In addition, the effects on the SNF backlog of work needed to be done on the transportation system are evaluated.

All costs are the expense of having the work accomplished through a public works contract and utilizing 2009 dollars as an economy analysis. This baseline level allows for a uniform comparison of the alternatives. Any work accomplished by Forest Service employees or volunteers will provide a savings for the American taxpayer.

The costs associated with the initial work to put the road or motorized trail system into service is the implementation cost. These costs may be for improving unauthorized routes that will be added to the NFTS, costs for safety and resource protection or the costs for changing maintenance levels. Implementation costs also include signing of restricted unauthorized motorized areas and route. The implementation costs have been derived from an estimate of the cost of the necessary work activities specified to put the road and trail system into service. In addition, the cost of generating the MVUM is considered.

The annual cost for the transportation system is the recurrent maintenance costs to maintain the facility to its operational standard. These costs include maintaining the travel way, repairing resource damage and assuring safe public access. The total costs for the transportation system is estimated on the probable assignment of maintenance levels during the implementation phase. It is very difficult to separate the cost of maintaining the road system for recreation from other uses such as general administrative access, timber and silviculture needs, fire and fuels requirements, hydro power generation and other motorized uses of the NF lands and transportation system. An analysis for each of the uses on the NFTS is beyond the scope of this analysis. However, the cost difference between the alternatives best displays the effects of annual maintenance cost for the transportation system as a result of the proposed.

In addition to implementation costs and annual costs, there are deferred maintenance costs for road and trail work which had been put off until it is more economically efficient to accomplish the work or there is sufficient funding. Examples include asphalt repair, surface replacement, road side brushing, minor erosion control and sign repair. Typically, deferred maintenance is work which does not immediately compromise safety, resource protection or infrastructure preservation.

Deferred maintenance needs for roads on the SNF are currently estimated to be $10,900,000 and the deferred maintenance backlog for motorized trails is approximately $96,000. The road estimate is from current local knowledge of roads and the National random sample of deferred maintenance needs completed in 2008. The National sample is only statistically significant for the entire National Forest Road System and is only a statistical projection of deferred maintenance road needs for the individual National Forests.

Deferred maintenance of roads is difficult to predict since it is usually predicated on the ability of annual budgets to keep up with road conditions. Future funding levels are difficult to predict. Road maintenance is prioritized each year depending on the budget and road conditions. When a new road is added to the NFTS, it creates more competition for maintenance resources. Since the budget may not change much, it can be assumed that increased needs for additional maintenance

funds would be unmet. The new annual cost of maintaining an individual road is a good measure of its affect on the accumulated unmet deferred maintenance need. Thus changes on the rate of change in the unmet deferred maintenance needs would be the change in expected annual maintenance costs.

As with roads, trail systems accumulate deferred maintenance when maintenance needs are put off into the future. The users of motorized trails are much more accepting of differing conditions and safety and resource concerns are addressed in a timely manner usually by volunteer OHV groups. However, some work items must be deferred. The trail maintenance budget includes all FS trail needs such as motorized, equestrian and hiking trails.

3.2.2 Affected Environment

Affected environment and environmental consequences for this travel management analysis are an aggregate of the entire SNF. The assessment for the transportation facilities does not vary between the analysis units.

Roads

Most of the road network in and around the SNF was created in support of timber harvest activities beginning as far back as the late 1800s. A resurgence of timber harvest in the early 1960s through the late 1980s resulted in access roads into many new areas of the forest. Much of the road system was upgraded through timber sales and hydroelectric projects to support additional multiple uses including safe public access.

Public use of the road system has grown steadily. In 1950, the nationwide average ratio of recreation to timber traffic on Forest Service roads was 10 to 1. In 1975, the ratio was 27 to 1 and in 1996, the ratio was estimated at 114 to 1. Driving for pleasure has become the single largest motorized recreation use of NFS lands. Almost all National Forest visitors travel on NFTS roads. The roads provide access for motorized and non-motorized recreation, research, fish and wildlife habitat management, grazing, cultural and historical activities, timber harvesting, hunting and fishing, fire suppression, fuels reduction, mining, insect and disease control, watershed management, commercial and private special uses, and access to private land. There are several road networks which provide varying degrees of access and connectivity to and within the SNF. They are described below.

State Highways and County roads are considered public roads. Public roads are roads constructed and maintained by a public road agency such as a city, county or State. These roads are for public travel and fall under the National Highway Safety Act. The SNF is within easy driving distance of the Fresno, Madera and Mariposa metropolitan areas, and within three hours of Stockton or Bakersfield. Three major access routes are State Highway 41 and State Highway 140, accessing the northern half of the forest, and State Highway 168, accessing the southern half. State Highway 49 connects Highway 41 to Highway 140 and crosses through small areas of the Forest. There are 325 miles of State Highways on or near the SNF. The SNF lies in the jurisdiction of three different counties and each county has a selection of roads within or near the SNF boundaries. There are 200 miles of Fresno county roads in the southern half of the SNF and 200 miles of county roads combined for Madera and Mariposa counties in the northern half of the forest.

NFTS Roads have been, and are, developed, managed and maintained for the utilization of NFS lands. Most areas where road access is needed for management in the foreseeable future have adequate roads. Road work is funded, for the most part, from appropriated funds through the U.S. Department of Interior budget. Commercial uses such as timber harvest and hydroelectric power generation are responsible for any road work required as a result of their activities on NF roads.

The Forest Service is responsible for the road maintenance required for recreational users. The Forest Service designates which roads are to be operated for passenger car use under the Federal Highway Safety Act and which roads are to operated as rough graded for high clearance vehicles. The SNF allows green/red sticker use on rough graded roads under CVC Division 16.5. Though roads maintained for passenger cars fall under the Highway Safety Act, the SNF may allow limited ATV use under CVC 38026 on designated road segments.

Some NFTS roads have restricted travel at various times of the year in order to protect the infrastructure, assure safety and protect natural and cultural resources. Some roads are closed year-round in order to provide for the same protections as above. See Appendix A for a more detailed listing of the individual road restrictions and closures. Decisions and direction for individual road management is documented in Road Management Objectives (RMOs).

National Forest Special Use Roads are roads located within National Forest System lands which have been built and are maintained by authorized permits or licenses. Some of these roads are for the use of commercial entities such as utility companies. Some are for access to private in-holdings or access to organizational camps. These roads are managed by the permit holder for themselves and their customers and are not open to the public. The SNF manages approximately 180 miles of this type of road.

Private roads are roads on private lands for which the Forest Service does not have a right-of-way. These roads are maintained by the land owner and access is at the discretion of the land owner. The Forest Service does not direct visitors to these roads. There are approximately 150 miles of private road within the SNF excluding those in developed areas such as Oakhurst, North Fork and Shaver Lake.

Other Federal agencies have roads connecting to the Sierra NFTS including the National Park Service, the Bureau of Land Management, Army Corps of Engineers and the Bureau of Indian Affairs. Approximately 5 miles of roads on the SNF are managed by other Federal agencies.

Motorized Trails

NFTS roads are for the utilization of NFS lands. However, if a motorized travelway is used exclusively for a motorized recreational experience (such as rock crawling, driving specialized trail equipment or negotiating challenging terrain) it is classified as a NFTS motorized trail. The SNF maintains and manages the motorized trail system for a range of recreational uses and experiences. The management and maintenance for the motorized trail system is funded through, and the responsibility of, the recreation trails program. The FS trails program includes all recreation trails: hiking, equestrian, bicycle, snowmobile, cross-country ski, motorcycles, ATVs and 4WD vehicles. Motorized trails on the SNF are categorized for three different classes of vehicles:

1. Open to All Vehicles, typically standard four wheel drives,
2. Open to Vehicles less than 50” wide, typically quads and ATVs, and
3. Open to Motorcycles only.

There are currently 56 miles of motorized trails (see Table 3- 1). These trails are maintained through a combination of Federal appropriated funds, State OHV Commission grants and volunteer partnerships. These funds assist in keeping these opportunities open and maintained for public recreational use.

Table 3- 1. Existing Motorized Trails

Motorized Trail	Trail Number	Length (miles)
Hite Cove	19E200	4.3
Onion Springs	22E223	2.1
Star Lakes	22E203	2.8
Green Mountain	22E206	1.5
Cattle Mountain	22E207	2.9
Red Top	23E205	1.4
Iron Lakes	22E204	0.7
Red Mountain	26E213	1.9
Coyote Lake	26E212	2.2
West Lake	26E215	0.2
Strawberry Lake	26E214	2.3
Mirror Lake	26E216	1.4
Mirror Lake Spur	26E217	0.1
Brewer Lake	26E218	3.0
Bow Tie	22E208	3.0
Bow Tie Spur A	22E209	0.7
Bow Tie Spur B	22E210	1.2
Bald Mountain	26E219	3.8
Bald Mountain Spur	26E211	2.2
Swamp Lake	26E221	12.5
Swamp Lake Access	26E220	0.2
Grouse Lake Spur		0.1
Spanish Mountain	26E224	5.0
Middle Bridge ATV	21E201	0.4
Lower Miami ATV	021E202	0.5
Total		**56.4**

There are situations when a road is not needed continually as a road, but may provide good recreational experiences. These travelways are captured in the INFRA database and managed as both a road and a trail. Most of the time these roads are managed as a recreational motorized trail; however, when it is needed as a road, it is temporarily converted back to that use. Once its use as a road is no longer necessary, it is converted back to a motorized trail. The Dusy-Ershim OHV trail has been defined as a road in the Wilderness Act though it has always been operated as a motorized trail. The SNF has 41.2 miles of roads managed as motorized trails.

Table 3- 2 Existing Roads Managed as Motorized Trails

Road Managed as Motorized Trail	Road Number	Length (miles)
Shuteye	06S059	2.7
Bear Diversion	06S083	3.0
Dusy-Ershim	07S032	33.0
Hooper Diversion	07S065	2.5
Total		**41.2**

Areas

There are an estimated 1,700 dispersed recreation sites on the SNF. These sites are scattered throughout the project area. The sites are accessed by existing roads and unauthorized routes. The

creation of these sites vary from old log landings to sites used as overflow camping near developed campgrounds to staging areas for loading and unloading of horses or ATVs. There are a few areas used for motorized recreation play areas; usually these play areas are granitic outcrops or domes which provide a variety of rock crawling and scenic view opportunities (see the Recreation section for more details).

3.2.3 Environmental Consequences, Summary of Effects Analysis across All Alternatives

When a road, trail or area is added to the system, it is assigned a Road Management Objective (RMO) or a Trail Management Objective (TMO), which defines the level of development, maintenance and management the facility will receive. Since appropriated funds can only be spent on NFTS facilities, adding unauthorized roads, trails or areas to the NFTS offers the opportunity for management and maintenance. Guided by management objectives, appropriate structural improvements can be installed which will reduce or eliminate natural resource effects like erosion and provide the driver or rider with a more enjoyable experience. Structural improvements may include drainage structures, safety devices or travelway/tread retention structures.

For assessing the effects of changes to the current NFTS or the additions to the NFTS, two indicator measures have been identified: safety and affordability. The individual and collective evaluations of roads allowing mixed use analyze the relative concerns for vehicle conflict safety on NFTS roads. Individual safety assessments for roads considered the changes in their non-highway designation and how the designation meets the goals for each alternative. Individual summaries of each traffic option may be found in Appendix I.

The mileage for each class of vehicle is useful in assessing any change in costs for implementing and maintaining NFTS. A summary of the changes to the NFTS may be found in Table 3- 3.

Table 3- 3. Summary of the NFTS by Alternative

(Miles)	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Roads converted to “Highway-legal Vehicles Only” from Mixed Use	0	12	0	7	7
Roads allowing Combined Use under CVC 38026	0	0	0	0	17
Road converted to Mixed Use from “Highway-legal Vehicles Only”	0	12	0	25	125
Roads converted to trails > 50”	0	7	0	9	12
Roads converted to trails < 50”	0	6	0	6	7
Unauthorized routes added as roads	0	6	0	9	15
Unauthorized routes added as trails	0	40	0	42	70
Roads converted to closed to all vehicles	0	209	0	281	196
Open motorized areas added (acres)	0	6	0	37	113

The implementation costs include the cost of putting a road or trail into service. This includes resource mitigation work, safety and informational signing, and producing the MVUM. Table 3-4 displays a summary of the estimated implementation costs for each alternative.

Table 3- 4. Estimated Implementation Costs ($1000)

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Passenger car roads reduced to high clearance road	0	3	0	3	3
Passenger car roads to be operated as motorized mixed use under CVC 38026	0	0	0	0	30
Roads converted to motorized trails	0	5	0	5	5
Implementing closures	20	30	35	50	30
Unauthorized routes added as roads	0	36	0	55	85
Unauthorized routes added as trails	0	328	0	293	629
Cost of implementing MVUM	75	75	75	75	75
Total Implementation Costs	**$95**	**$477**	**$110**	**$481**	**$857**

Routine facility maintenance activities have a positive cumulative effect on the stability of roads, trails and areas. Routine maintenance activities include clearing obstacles, cleaning and reconstructing water diversion structures, and repairing structures to protect resources such as hardened approaches to water crossings, bridges and barriers for closures. The annual maintenance costs are predicated on the cost of continually keeping the entire road, motorized trail and area system up to the standard for its long-term use.

The SNF receives approximately $425,000 annually to operate and maintain NFTS roads. Table 3- 5 shows funding needed to maintain roads to standard. This current budget allows the SNF road maintenance crew to respond to urgent and emergency road repairs. The Forest seldom can afford to repair road problems unless it is a hazard or is creating resource damage. Maintenance such as non-emergency road-side brushing, pavement rehabilitation and surface blading are often deferred to the future.

The SNF receives approximately $100,000 for maintenance of 1,100 miles of NFTS non-motorized and motorized trails. In addition, $44,000 is received for motorized trail maintenance as a result of an agreement with the State of California, Department of Parks and Recreation.

Table 3- 5. Estimated Annual Maintenance Costs ($1000/year)

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
NFTS Roads	1,669	1,692	1,699	1,668	1,700
NFTS Motorized Trails	86	95	49	99	130
Annual Costs	**$1,755**	**$1,787**	**$1,748**	**$1,767**	**$1,830**

In addition to implementation costs and annual costs, there are deferred maintenance costs for road and trail work which had been put off until it is more economically efficient to accomplish the work. This includes such work as asphalt repair, rock replacement, road side brushing, minor

erosion control and sign repair. Typically, deferred maintenance is work which does not immediately compromise safety, resource protection or infrastructure preservation (Table 3- 6).

Table 3- 6. Estimated Deferred Maintenance ($1000/year)

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
NFTS Roads	10,900	10,924	10,900	10,902	10,935
NFTS Motorized Trails	96	95	50	100	125
Deferred Maintenance	**$10,996**	**$11,019**	**$10,950**	**$11,002**	**$11,060**

One proposed action does not affect the transportation consequences in any quantifiable or non-quantifiable measure. Changing the S&G #22 and SPNM ROS Element Map has a minimal effect to the affordability or safety of the NFTS. This minimal effect is consistent between all the alternatives and therefore are not evaluated or discussed further in the consequences to the transportation system.

The effects of each of the other actions are documented below.

Alternative 1 – No Action

Direct and Indirect Effects

Cross-country Motor Vehicle Travel

The Travel Management Rule would not be implemented and cross-country travel would not be prohibited in areas where it is currently allowed. Motorized cross-country travel would continue with a probable increase in the number of unauthorized motorized recreation routes.

There would be no management of these routes and no Federal transportation funds available to correct damage and deficiencies caused by unauthorized cross-country travel. There would be no changes in the funding needs for the NFTS. Since these unauthorized routes would not be expected to support passenger car use, there would be no additional mixed use conflicts between passenger cars and non-highway legal vehicles.

Additions to the NFTS

There would be no roads, trails or areas added to the NFTS. Current maintenance and deferred maintenance cost would not change due to new transportation facilities. There would be no changes to public safety concerns between passenger cars and non-highway legal vehicles.

Changes to the NFTS

Allowable uses on NFTS roads would continue under the previously approved 1998 Road Closure Plan. The 1998 Closure Plan is out of conformance with the current LRMP as amended, which requires the consideration of new science and conditions in order to apply improved restriction measures to protect natural and cultural resources.

The current traffic designations would continue to incur a small amount of mixed use safety conflicts as there will continue to be some confusion by drivers and operators as to how the roads are operated. Since there have been no recorded mixed use crashes for over 15 years, there would not expected to be a change in the number of mixed use crashes as a result of this alternative.

Non-Significant LRMP Amendments

This alternative does not change S&G #17 and would continue to allow motorized use of maintenance level one (ML 1) roads in violation of National Forest Service policy and direction.

There would be no effects on the either affordability or traffic safety.

Cumulative Effects

The NFTS will continue as currently designated; thus there would be no changes in the affordability and safety of road and trails.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Cross-country Motor Vehicle Travel

The Travel Management Rule would be implemented and cross-country travel would be prohibited in areas where it is currently allowed. Federal road and trail funds would be available to correct damage and deficiencies caused to the previously unauthorized routes added to the NFTS. Since the unauthorized routes would not support passenger cars there would be no change in the safety of the NFTS.

Additions to the NFTS

There would be an increase of 6 miles of roads and 40 miles of motorized trails and 6 acres of motorized area added to the NFTS. Alternative 2 will initially cost $477,000 to implement and increase the annual maintenance needs by approximately 1.8 percent. There would be no changes to public safety concerns between passenger cars and non-highway legal vehicles since all these additional roads and trails would be open for high clearance and non-highway legal vehicle use, and not maintained for passenger car use.

Changes to the NFTS

The 1998 Road Closure Plan would be replaced with a motorized travel management plan which considers current science and conditions, and conforms to the Sierra LRMP as amended and to all Forest Service policies and direction.

Changes to the existing NFTS will increase the necessary annual maintenance requirement by 1.8 percent. Changes in the traffic rules from "Highway-legal vehicles Only" to "Open to All Vehicles" have be evaluated in an engineering judgment and do not increase the risk of crashes between passenger cars and green/red sticker vehicles.

Non-Significant LRMP Amendments

This alternative would amend S&G #17 and no longer allow motorized use of maintenance level one (ML 1) roads and thus conform to National Forest Service policy and direction.

Cumulative Effects

It is expected motorized trails will receive grants and volunteer work to keep the trails properly maintained. However, unmet deferred maintenance on roads would increase approximately 0.2 percent. There would not be any expectation of a change in system wide traffic safety.

Alternative 3

Direct and Indirect Effects

Cross-country Motor Vehicle Travel

The Travel Management Rule would be implemented and cross-country travel would be prohibited in areas where it is currently allowed.

Further use of unauthorized routes would not be legal; however, there would be no Federal transportation funds available to correct damage and deficiencies caused by previous cross-country travel. There would be no changes in the funding needs for the NFTS. Since these routes would not be expected to support passenger car use, there would be no additional mixed use conflicts between passenger cars and non-highway legal vehicles.

Additions to the NFTS

There would be no roads, trails or areas added to the NFTS. Annual maintenance costs would not change due to new transportation facilities. There would be no changes to public safety concerns between passenger cars and non-highway legal vehicles.

Changes to the NFTS

Allowable uses on NFTS roads would continue under the previously approved 1998 Road Closure Plan. The 1998 Closure Plan is out of conformance with the current LRMP as amended, which requires the consideration of new science and conditions in order to apply improved restriction measures to protect natural and cultural resources.

Changes to the existing NFTS will decrease the necessary annual maintenance requirement by 2.1 percent. The current traffic designations would continue to incur a small amount of mixed use safety conflicts as there will continue to be some confusion by drivers and operators as to how the roads are operated. Since there have been no recorded mixed use crashes for over 15 years, there would not expected to be a change in the number of mixed use crashes as a result of this alternative.

Non-Significant LRMP Amendments

This alternative does change S&G #17 and would bring the Sierra NFTS into compliance with National Forest Service policy and direction.

There would be no effects on the either affordability or traffic safety.

Cumulative Effects

The NFTS will continue as currently designated; thus there would be no changes in the affordability and safety of road and trails.

Alternative 4

Direct and Indirect Effects

Cross-country Motor Vehicle Travel

The Travel Management Rule would be implemented and cross-country travel would be prohibited in areas where it is currently allowed. Federal road and trail funds would be available to correct damage and deficiencies caused to the previously unauthorized routes added to the NFTS. Since the unauthorized routes would not support passenger cars, there would be no change in the safety of the NFTS.

Additions to the NFTS

There would be an increase of 9 miles of roads and 42 miles of motorized trails and 37 acres of motorized areas added to the NFTS. Alternative 4 will initially cost $481,000 to implement and increase the annual maintenance needs by approximately 0.7 percent. The bulk of the increase is due to the addition of 42 miles of motorized trails. There would be no changes to public safety concerns between passenger cars and non-highway legal vehicles since all these additional roads and trails would be open for high clearance and non-highways legal vehicle use, and not maintained for passenger car use.

Changes to the NFTS

The 1998 Road Closure Plan would be replaced with a motorized travel management plan which considers current science and conditions, and conforms to the Sierra LRMP as amended and to all Forest Service policies and direction.

Changes to the existing NFTS will increase the necessary annual maintenance requirement by 0.7 percent. The reduction in cost from roads changing for highway-legal vehicle only to open to all vehicles is offset by the inclusion for previously closed roads to open to all vehicles. Most of the increase is due to changing 91 miles of roads to motorized trails.

Changes in the traffic rules from “Highway-legal vehicles Only” to “Open to All Vehicles” have be evaluated in an engineering judgment and do not increase the risk of crashes between passenger cars and green/red sticker vehicles.

Non-Significant LRMP Amendments

This alternative would amend S&G #17 and no longer allow motorized use of maintenance level one (ML 1) roads and thus bring the LRMP into conformance with National Forest Service policy and direction.

Cumulative Effects

It is expected motorized trails will receive grants and volunteer work to keep the trails properly maintained. However, unmet deferred maintenance on roads would increase less than 0.1 percent. There would not be any expectation of a change in system wide traffic safety.

Alternative 5

Direct and Indirect Effects

Cross-country Motor Vehicle Travel

The Travel Management Rule would be implemented and cross-country travel would be prohibited in areas where it is currently allowed. Federal road and trail funds would be available to correct damage and deficiencies caused to the previously unauthorized routes added to the NFTS. Since the unauthorized routes would not support passenger cars there would be no change in the safety of the NFTS.

Additions to the NFTS

There would be an increase of 15 miles of roads and 70 miles of motorized trails and 113 acres of motorized areas added to the NFTS. Alternative 5 will initially cost $857,000 to implement and increase the annual maintenance needs by approximately 4.3 percent. There would be no changes to public safety concerns between passenger cars and non-highway legal vehicles since all these additional roads and trails would be open for high clearance and non-highways legal vehicle use, and not maintained for passenger car use.

Change to the NFTS

The 1998 Road Closure Plan would be replaced with a motorized travel management plan which considers current science and conditions, and conforms to the Sierra LRMP as amended and to all Forest Service policies and direction.

Changes to the existing NFTS will increase the necessary annual maintenance requirement by 4.3 percent. The major increase in cost is due to the addition of 190 miles of previously closed roads to allow all vehicles to use. These roads previously received little maintenance and would now be maintained. However, most of the cost increase is due to changing 91 miles of roads to motorized trails.

Changes in the traffic rules from “Highway-legal vehicles Only” to “Open to All Vehicles” have been evaluated in an engineering judgment and do not increase the risk of crashes between passenger cars and green/red sticker vehicles. Fifty (50) miles of passenger car roads are proposed to allow motorized mixed use under CVC 38026. Engineering Reports have been completed by the Forest Qualified Engineer and the 50 miles are considered to be acceptable and will not compromise traffic safety.

Non-Significant LRMP Amendments

This alternative would amend S&G #17 and no longer allow motorized use of maintenance level one (ML 1) roads and thus bring the LRMP into conformance with National Forest Service policy and direction.

Cumulative Effects

It is expected motorized trails will receive grants and volunteer work to keep the trails properly maintained. However, unmet deferred maintenance on roads would increase 0.6 percent. There would not be any expectation of a change in system wide traffic safety.

3.2.4 Compliance with the LRMP, Travel Management Rule and Other Regulatory Direction

Alternative 1 does not implement the Travel Management Rule (36 CFR 212, 251, 261 and 295). Alternatives 2, 3, 4 and 5 do implement the Travel Management Rule.

Alternatives 1 and 3 do not change the LRMP Standard and Guideline #17 and LRMP continues to be counter to Forest Service policy and direction to close all maintenance level one roads to motorized travel. Alternative 2, 4 and 5 do amend Standard and Guideline #17 bringing the SNF in line with NF policy and direction, and no longer allow motorized use of maintenance level one roads. All alternatives (except Alternatives 1 and 3) comply to all other LRMP, Travel Management Rule and other policies, regulations and direction, including National and Regional direction for mixed use traffic safety.