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**Southwestern
Region**



Infrastructure Specialist Report

Forest Plan Revision DEIS

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Specialist Report

Introduction

This report evaluates and discloses the potential environmental consequences on the Apache-Sitgreaves National Forest System Motorized Transportation System and Administrative Facilities that may result with the adoption of a revised land management plan. It examines four different alternatives for revising the 1987 Apache-Sitgreaves NFs land management plan (1987 forest plan).

Relevant Laws, Regulations, and Policy that Apply

Forests Highways Act of August 27, 1958

36 CFR 212 Forest Development Transportation System

EO 11644 (amended by EO 11989) Use of Off-Road Vehicles, 1972, 1977

Federal Noxious Weed Act, 1974, as amended

Forest Service Directives

- FSM 7300 Buildings and Other Structures
- FSM 7310 Buildings and Related Facilities
 - FSH 7309.11 Buildings and Related Facilities Handbook
- FSM 7700 Transportation System
- FSM 7710 Travel Planning
 - FSH 7709.55 Travel Analysis
 - FSH 7709.56 Chapter 2 – Road Location
- FSM 7720 Development (Policy on Transportation)
- FSM 7730 Operation and Maintenance
 - FSH 7709.59 Road Operations

Glossary

The following are various road and trail definitions and route descriptions for NFS roads and NFS trails (Travel Analysis Report 2008).

Best Management Practices (BMP's). Methods, measures, or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before,

during and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2(m)).

Critical Vehicle. The vehicle, normally the largest (by weight, size, or unique configuration), whose limited use on the road is necessary to complete the planned activity. (FSH 7709.56, Section 4.1)

Forest Highway. A forest road under the jurisdiction of, and maintained by, a public authority and open to public travel." (23 USC 101). The Forest Highway Program falls under 23 USC 202, 203, and 204.

Forest Road or Trail. A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources (23 U.S.C. 101, 36 CFR 212.1, 36 CFR 251.51, 36 CFR 261.2, FSM 7705).

Forest transportation atlas. A display of the system of roads, trails, and airfields of an administrative unit. (36 CFR 212.1)

National Forest System (NFS) Trail Open to Motorized Vehicles. NFS trails that are managed and signed as open to motor vehicles. These can be either routes managed with width restrictions for specific vehicle types or forest roads also managed as trails due to an identified recreational destination value.

National Forest System (NFS) Trail Not Open to Motorized Vehicles NFS trails that are managed and signed for non-motorized uses, such as hiking, equestrian, and/or bicycling activities.

Road Decommissioning. Activities that result in the stabilization and restoration of unneeded roads to a more natural state. (36 CFR 212.1) For administrative purposes, these roads are not considered as existing and are not available for motorized use.

Road Maintenance. The upkeep of the entire transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization (36 CFR 212.1) This work includes brushing of roadside vegetation, falling danger trees, road blading, cleaning ditches, cleaning culvert inlets and outlets, etc.

Road Maintenance Levels. Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. (FSH 7709.59, 62.32)

- **Maintenance Level 1** - These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources to an acceptable level and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate" all traffic. Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are

open for traffic. However, while being maintained at level 1, they are closed to vehicular/motorized traffic but may be available and suitable for nonmotorized uses.

NFS ROADS OPEN TO ALL MOTOR VEHICLES:

- **Maintenance Level 2** - Assigned to roads open for use by high-clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as “Warning No Traffic” signs may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to (a) discourage or prohibit passenger cars or (b) accept or discourage high-clearance vehicles.

NFS ROADS OPEN ONLY TO HIGHWAY LEGAL VEHICLES

- **Maintenance Level 3** - Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. The Manual on Uniform Traffic Control Devices (MUTCD) is applicable. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations. Roads in this maintenance level are typically low speed, with single lanes and turnouts. Appropriate traffic management strategies are either “encourage” or “accept.” “Discourage” or “prohibit” strategies may be employed for certain classes of vehicles or users.
- **Maintenance Level 4** - Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. Manual on Uniform Traffic Control Devices (MUTCD) is applicable. The most appropriate traffic management strategy is “encourage.” However, the “prohibit” strategy may apply to specific classes of vehicles or users at certain times.
- **Maintenance Level 5** – Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. Manual on Uniform Traffic Control Devices (MUTCD) is applicable. The appropriate traffic management strategy is “encourage.”

Temporary Road or Trail. A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road, or trail and that is not included in the transportation atlas. (36 CFR 212.1)

Unauthorized Road or Trail. A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas (36 CFR 212.1, FSM 2353.05, FSM 7705).

Methodology and Analysis Process

Information related to the forest road system was obtained from the Infra Database (I-Web), database of record for the transportation system and facilities, and from the Apache –Sitgreaves Geographic Information System (GIS). GIS is a spatial tool and is linked to the Infra Database to ensure consistency of both. I-Web and GIS are continually updated to reflect the most current knowledge of the actual conditions in the field. The data includes but is not limited to miles of roads, maintenance levels of roads, features of the roads (culverts, grade dips, cattleguards, etc.)

road management objectives, maintenance items and costs This data reflects the current motorized transportation system and administrative facilities to the best of our available knowledge, how the forests have been managing the motorized transportation system and administrative facilities, and how the public has been using the motorized transportation system. The data used was obtained from GIS Data, current as of May 26, 2010.

Assumptions

In the analysis for this resource, the following assumptions have been made:

- All motorized route construction and maintenance would be done in accordance with applicable Forest Service Handbooks and Manuals, Standards and Guidelines, Best Management Practices (BMP's), laws, regulations, and policy.
- None of the alternatives have specific objectives during the life of the plan to construct new motorized routes and/or designate new motorized areas. Proposals would be considered through project-level planning. The environmental consequences of new motorized route construction or designation of new motorized areas would be identified and analyzed at the project-level.
- No new motorized routes would be constructed in designated wilderness areas, Blue Range Primitive Area, Inventoried Roadless Areas (IRA's), and other areas considered not suitable for new motorized route construction.
- The current Road Management Operational Maintenance Levels for Maintenance Level 3 through 5 are not proposed to change measurably over the life of the plan. (e.g., ML 3s to 4s or ML 3's to ML 2s.). The one exception is the portion of NFSR 300 from Highway 60 to Highway 260. It currently ranges in maintenance levels of 2 through 3. As funding allows the objective is to have it all at a ML 3 for consistency in maintenance activities, signing and encouraged type of vehicle use.
- Decommissioning would occur of identified unneeded NFS roads for current or future use by recontouring, ripping, and seeding as appropriate.
- The acres shown as suitable for future consideration of new motorized routes or motorized areas do not reflect site-specific resource concerns such as slope, soils, heritage resources, etc. that would be addressed in project-level analysis.

Revision Topics Addressed in this Analysis

This analysis best contributes to the revision topics "Managed Recreation" and "Community-Forest Intermix."

Indicator: The amount of Apache-Sitgreaves NFs lands suitable for future consideration of new road and/ or motorized trail construction.

Although this is the indicator used to compare the alternatives it is not anticipated, over the life of this plan, for any significant amount of new road construction. Motorized trails are addressed in the recreation specialist report.

The management of administrative facilities is addressed in this analysis. There is no identifiable indicator of differences among the alternatives.

Summary of Alternatives

A summary of alternatives, including the key differences among alternatives, is outlined in the Draft Environmental Impact Statement.

Description of Affected Environment (Existing Condition)

Transportation System

The transportation system within the planning area consists of roads and trails that provide people with access to public lands and to private in-holdings. Virtually every activity that takes place within the planning area uses the transportation system, including outdoor recreation, wildfire management, livestock and wildlife management, natural resource development, private in-holding access, and electronic communication sites and utility corridor maintenance, as well as the management and monitoring of forests lands.

Motorized travel on the forests has evolved over time. Historically the road system on the Apache-Sitgreaves NFs was constructed for commodity access, primarily timber, livestock production, mining, and administration. Some roads were alternate routes that connected small communities and some were used to access points of interest or areas used for specific activities, such as hunting and camping. While the transportation system continues to provide access for administration of the forests, the majority of use today comes from public recreation and forests products extraction.

The primary forest road system for the Apache-Sitgreaves NFs is already in place. The motorized transportation system is comprised of 765 miles of roads open only to highway legal vehicles (maintenance level 3 through 5), 2,067 miles of roads open to all motorized vehicles (maintenance level 2), 3,372 miles of roads closed to all motorized vehicles (maintenance level 1) and 156 miles of trails open to motorized vehicles less than 50" wide. The miles of open motorized transportation system includes roads with access restricted on a seasonal basis. Roads may be closed during extreme weather conditions for public safety and to minimize resource damage.

Additional travel ways exist that are not part of the National Forest System (NFS) road network and are considered unauthorized routes. An inventory has not been completed but it is estimated that there are hundreds of miles of unauthorized routes on the Apache-Sitgreaves NFs. These unauthorized routes include unplanned, abandoned travel ways, user created routes and roads that were once under permit or other authorization and were never decommissioned upon termination of the authorization. Travel ways in this category are awaiting management evaluation as to whether or not to include them as part of the transportation system or decommission. Over the last few decades, funding has not been sufficient to maintain all NFS roads and NFS motorized trails to appropriate standards to meet the road and trail management objective levels. Generally, the funding received has been focused on maintenance of higher standard roads that serve multiple-access needs. There is currently a backlog of road maintenance referred to as deferred maintenance, tasks that are the cumulative total of all annual maintenance tasks that are not accomplished as needed or scheduled. These maintenance items include but are not limited to surfacing, drainage and drainage structures, and closure structures. Deferred maintenance on the Apache-Sitgreaves NFs road system has accumulated to over 50 Million dollars (I-Web)

Generally, new road construction may occur when access to a particular resource or private in-holding is needed. These roads may be permanent, if intended for long-term use, or they may be temporary for a one time use and then decommissioned. Any adjustments to the road network would be made as necessary at the project planning level.

Less than 10 miles of new NFS road construction has occurred over the past 5 years. It has been limited to relocation of poorly located roads (routes located in or near riparian areas, wet meadows, etc) and developed campground construction. The use of temporary roads has been used for forests products extraction where a permanent road is not needed for future access.

The use of motorized vehicles for recreational activities has increased dramatically in recent years (Arizona State Parks 2007). Advances in the performance and the technology of OHVs (Off-Highway Vehicles), ATVs (All Terrain Vehicles), and UTVs (Utility Terrain Vehicles), have increased the demand for additional motorized recreational trails (motorized routes less than 50" wide), specifically connectors between routes to create loops. Refer to the recreation specialist report for additional information on motorized trail development.

Approximately 1,480,000 acres (approximately 70 percent) of the forests are currently open to cross-country motorized travel.. The designated Wilderness and the Blue Range Primitive Area are closed to cross-country motorized travel.

Administrative Facilities

The Apache-Sitgreaves NFs owned administrative facilities within the planning area consists of one air tanker base to support wildfire suppression, 5 ranger district offices, quarters for seasonal employees and crews, warehouses, barns, residential housing, engine bays, storage facilities, and associated water and wastewater systems. The emphasis in the past years has been to reduce the square footage of administrative facilities and still meet the needs of the forests. A facility master plan was completed on the forests in 1994 with subsequent annual updates. The facility master plan guides acquisition, maintenance, and disposal of facilities. It identifies facility needs and guides decisions regarding proposed and existing facilities.

Environmental Consequences

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or carryout any project or activity. Because the land management plan does not authorize or mandate any site-specific projects or activities (including ground-disturbing actions) there can be no direct effects. However, there may be implications, or longer term environmental consequences, of managing the forests under this programmatic framework.

Motorized Transportation

Alternative A, (No Action) Current management of motorized transportation would continue under management area specific goals, objectives, standards, and guidelines in the 1987 Forest Plan (as amended), which were driven primarily by timber harvesting. For example, guidelines include: *“Road densities should be planned to economically balance road costs and skidding costs. Permanent road densities should average 3.5 miles/ square mile or less, unless topography dictates higher densities to economically remove the timber. Also, open road densities after Timbersale activities cease should average 2.0 miles/ square miles or less.”* There are no specific

objectives to identify miles of unauthorized routes to be decommissioned (e.g., recontoured, and/or revegetated in riparian areas) and no specific objectives to improve, decommission, recontour, and/or revegetate system roads in riparian areas. Cross country motorized travel is allowed in most areas and there is no clear direction on new motorized trail or motorized travel area development. It would be expected that with increasing populations, motorized cross-country travel would increase creating an increase in mixed user conflicts, and creation of even more miles of unauthorized routes. The maintenance and deferred maintenance costs would increase with additional miles of unauthorized routes to be decommissioned, or reconstructed to meet BMP's to reduce resource damage and design standards for user safety. The no action alternative, alternative A, has less acreage suitable for new motorized areas, new road construction, new motorized trails and temporary road construction than action alternative C and more available than action alternatives B and D. See Table 1 for actual acreages and percentages for each alternative.

All action alternatives (B,C and D) contain direction for roads and motorized trails that include specific objectives within the planning period to decommission unauthorized routes and close maintenance level 1 roads in riparian areas. These alternatives also include specific objectives within the planning period to close, recontour, and/or revegetate unauthorized routes and maintenance level 1 roads that directly add sediment to streams or cause damage to riparian systems. Motorized cross country travel, except where authorized, would be prohibited. Exceptions include emergency vehicles, snowmobiles, and permitted uses (e.g., grazing, firewood permits). Eliminating motorized cross country travel, except where authorized, would result in funding used to mitigate resource damage from unauthorized routes created from cross country travel by decommissioning and/ or reconstruction available for existing NFS road maintenance instead. Motorized vehicle use would only be allowed on roads, trails and areas designated for motorized use making it less complicated for forest users to understand where they can travel with motorized vehicles and lessening the conflicts between motorized use and non motorized use.

The action alternative, Alternative C provides the greatest amount of acreage suitable for the future consideration of new motorized areas, NFS roads, NFS motorized trails, and temporary roads. Alternative D provides the least amount of acreage suitable for the future consideration of new motorized areas, NFS roads and NFS motorized trails and Alternative B falls in between Alternatives C and D for available acreage suitable for the future consideration of new motorized areas, NFS roads and NFS motorized trails acreage for motorized use. Alternatives with higher suitable acres could provide additional forest access for motorized users which, in turn, could discourage non-motorized use in those areas.

The following table summarizes the acres suitable for the future consideration of new motorized areas, NFS roads, NFS motorized trails, and temporary roads. This table is based on the acres for each management area under each alternative and the management areas suitable for these activities. This does not imply or propose these activities or level of development would occur but is a measurable way of showing the differences in the alternatives.

Table 1. Acres and Percent of the Apache-Sitgreaves NFs Suitable for Future Consideration of New Motorized Areas, NFS Roads, NFS Motorized Trails, and Temporary Roads

Category	Alternative A*	Alternative B	Alternative C	Alternative D
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Category	Alternative A*	Alternative B	Alternative C	Alternative D
New Motorized areas	1,423,242 (71%)	1,243,316 (62%)	1,572,507 (78%)	1,095,135 (54%)
NFS Road Construction	1,444,430 (72%)	1,276,291 (63%)	1,621,771 (80%)	1,125,553 (56%)
NFS Motorized Trails <50” Construction	1,444,430 (72%)	1,273,822 (63%)	1,619,298 (80%)	1,123,081 (56%)
Temporary Roads Construction	1,448,434 (72%)	1,405,288 (70%)	1,696,497 (84%)	1,233,645 (61%)

*Alternative A, no action, uses a different set of management areas compared to the action alternatives. Suitability was not specifically addressed for new motorized areas or motorized trails less than 50” wide. The no action alternative is focused on timber harvesting of which most new road construction would have consisted of local roads for access to the timber and would have been put into storage (closed to motorized use) at the completion of the project.

Both mechanical and fire treatments are planned in all alternatives. Alternatives A and C rely on more mechanical treatments to move towards desired condition. Alternative B uses a mix of mechanical and fire, and Alternative D uses more fire than mechanical treatments. Mechanical treatments may require more reconstruction (e.g., curve widening, hardened drainage crossings) of roads to accommodate the design needs of the critical vehicle to perform mechanical treatment than fire treatments would require. Mechanical treatment may also require more construction of temporary roads during the treatment period to access the treatment areas than treatment by fire. This may result in mechanical treatment having a higher cost per acre due to motorized access costs. Effects of roads, including temporary roads, on the resources are included in the air, soil, water, and riparian specialist reports.

Relationship of Short-Term Uses and Long-Term Productivity

Activities, such as NFS road maintenance, relocation, construction of new motorized use areas, NFS motorized trails and NFS roads that occur during the implementation of the proposed plan should not have an impact on long-term productivity. these activities would be accomplished using BMP’s and should result in conditions that meet standards to minimize resource impacts while providing needed access to the forests.

Administrative Facilities

The management of the administrative facilities on the Apache-Sitgreaves NFs will not change under any alternative. The facility master plan will be reviewed and updated annually as

necessary to reflect management needs. Funding will be prioritized to accomplish critical health and safety maintenance and deferred maintenance items.

Cumulative Environmental Consequences

Transportation

The bounds of analysis are the adjoining national forests, Arizona state highways that access and traverse the Apache-Sitgreaves NFs, counties encompassing the Apache-Sitgreaves NFs and the designated Forest Highways on the Apache-Sitgreaves NFs.

The Four Forest Restoration Initiative (4-FRI), landscape-scale restoration activity to reduce the threat of high-intensity, potentially destructive fires on a significant number of acres on the Apache-Sitgreaves, Coconino, Kaibab, and Tonto National Forests could impact the forest transportation system to access the eastern side of the Coconino National Forest for treatments and/or removal of biomass. Use of these roads for access to the treatment areas and biomass removal on the east side of the Coconino National Forest would result in increased traffic and a need for more frequent road maintenance. The increase in traffic and the different types of vehicles could require improvement of the road to accommodate these activities safely.

The Arizona Department of Transportation (ADOT) 2012 – 2016 Tentative Five-Year Transportation Facilities Construction Program shows plans to continue providing additional passing lanes on Arizona State Highway 260 from Heber to Show Low, Arizona. This section of Highway 260 is located predominantly on the Black Mesa and Lakeside Ranger Districts. Other ADOT projects in the vicinity or on the Apache-Sitgreaves NFs consist of pavement rehabilitation, construction of passing lanes and other heavy maintenance activities. None of these projects are expected to increase or decrease the amount of access onto the Apache-Sitgreaves NFs. These road improvements could facilitate the increases in forest visitors as the driving time to the forests from the urban areas of Phoenix and Tucson decreases as a result of these improvements. This potential increase of forest visitors using the forest motorized transportation system could result in more frequent road maintenance needs.

There are seven NFS roads designated as Forest Highways in the Apache-Sitgreaves NFs. In the fall of 2011 the forests submitted two of these roads for funding from Federal Highways to reconstruct. The reconstruction work would include new drainage structures, road widening, possible realignment of small segments and paving. The reconstruction of these roads would not increase or decrease access to the forests lands. If these projects are funded the deferred maintenance on these routes would be eliminated and at the completion of the project(s) ADOT would maintain these roads instead of the Forest Service, allowing the funds used currently to maintain those NFS roads to be used on other NFS roads. If either of these projects are funded the construction may or may not occur within the planning period.

Adaptive Management

Construction, reconstruction and maintenance designs and specifications will continue to be updated and revised as necessary for the motorized transportation system to meet the needs of the users, including outdoor recreation, wildfire management, livestock and wildlife management, natural resource development, private in-holdings access, electronic communication sites, utility

corridor maintenance, and the management and monitoring of NFS lands. These updates and revisions will ensure our ability to continue to adapt our activities as necessary for changing conditions.

Other Planning Efforts

Arizona Department of Transportation *State Transportation Improvement Program (STIP) for Fiscal Years 2010-2013, 2011-2015 Five-year Transportation Facilities Construction Program, and 2012 – 2016 Tentative Five –year Transportation Facilities Construction Program.*

Federal Highway Administration’s Central Federal Lands Highway division, of which Arizona is a part, is in the process of developing its long-range transportation plan.

References

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