

Four Forest Restoration Initiative, Rim Country EIS

Transportation Report

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for:
Four Forest Restoration Initiative, Rim Country EIS

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Table of Contents

Introduction/Project Information.....	2
Relevant Law, Regulation, and Policy	2
Forest Plan Direction.....	3
Coconino Forest	3
Apache-Sitgreaves Forest.....	6
Tonto Forest	8
Affected Environment	9
Issues/Indicators/Analysis Topics	10
Assumptions and Methodology	10
Summary of Alternatives and Resource Protection Measures (Design Features, Best Management Practices, Mitigation and Conservation Measures)	12
Environmental Consequences	15
Alternative 1 – No Action	15
Direct and Indirect Effects.....	15
Use of Existing Roads	15
Temporary Roads	15
Cumulative Effects	16
Use of Existing Roads	16
Temporary Roads	16
Effects Common to All Action Alternatives	16
Use of Existing System Roads	16
Road Maintenance.....	17
Road Decommissioning.....	17
Road Relocation	18
Temporary Roads	19
Rock Pit Use and Expansion	19
Use of In-woods Processing and Storage Sites	19
Forest Plan Amendment(s).....	20
Effects Unique to Each Action Alternative and Differences Among Them	20
Alternative 2- Modified Proposed Action.....	20
Direct and Indirect Effects.....	20
Cumulative Effects	20
Alternative 3- Focused Restoration Alternative.....	21
Direct and Indirect Effects.....	21
Irreversible and Irretrievable Commitments of Resources.....	22
Unavoidable Adverse Effects	22
Short-term Uses and Long-term Productivity	22
Discussion of Literature	22
Other Agencies and Individuals Consulted.....	23
Glossary	23
References Cited	Error! Bookmark not defined.

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Introduction/Project Information

This report analyzes the transportation system within the Four Forest Restoration Initiative-Rim Country project area. The report describes the existing transportation system, new temporary roads that are needed to access the area, the relocation of existing roads and improvement of existing roads. It also addresses opportunities for road decommissioning of Forest Service system roads and non-system roads.

Relevant Law, Regulation, and Policy

Laws

National Forest Roads and Trails Act of October 13, 1964, as amended (16 U.S.C. 532-538). Authorizes road and trail systems for the national forests. Authorizes granting of easements across NFS lands, construction and financing of maximum economy roads (FSM 7705), and imposition of requirements on road users for maintaining and reconstructing roads, including cooperative deposits for that work

Highway Safety Act of 1966 (23 U.S.C. 402). Authorizes state and local governments and participating federal agencies to identify and survey accident locations; to design, construct, and maintain roads in accordance with safety standards; to apply sound traffic control principles and standards; and to promote pedestrian safety.

Organic Administration Act of 1897 (16 U.S.C. 551). This act authorizes the regulation of national forests.

Revegetation – Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1601, Pub. L. 93-378) as amended by the national Forest Management Act of 1976 (16 U.S.C. 1608, Pub. L. 94-588). Directs the designing of roads to standards appropriate for intended uses and prescribes the revegetation of roads within 10 years of the termination of temporary and undeveloped roads created under contract, permit, or lease.

Regulations

Title 36, Code of Federal Regulations, Part 212 (36 CFR Part 212). Establishes requirements for the administration of the Forest transportation system, including roads, trails, and airfields, and provisions for acquisition of rights-of-way. Describes a minimum road system and requires a science-based roads analysis to plan the road system and to set funding priorities.

Travel Management (36 CFR Part 212, Subpart A). Administration of the Forest Transportation System.

Prohibitions (36 CFR Part 261, Subpart A). General Prohibitions. Title 36, Code of Federal Regulations, sections 261.12 and 261.54 (36 CFR 261.12 and 261.54). Establishes prohibitions on Forest transportation system roads that are enforceable by the Forest Service and other Federal law enforcement officials.

Sale and Disposal of National Forest System Timber (36 CFR Part 223 Subpart B). 223.37
Revegetation of temporary roads.

Other Guidance

Forest Service Manual (FSM) 7700- Transportation System, Describes the authority, objectives, policy, responsibility, and definitions for planning, construction, reconstruction, operation and maintenance of the forest transportation system facilities.

Land and Resource Management Plan Coconino National Forest , Land Management Plan for the Apache-Sitgreaves National Forests , Tonto National Forest Plan. Provides forest level management direction for transportation systems.

Forest Plan Direction

The forest plans for the Coconino, Apache-Sitgreaves and Tonto National Forests provides management direction for roads resource as it applies to Rim Country as follows:

Coconino Forest

General Description and Background for Roads

The Coconino NF transportation system road network consists of thousands of miles of arterial, collector, local, and closed roads ranging from maintenance level 1 (closed to all motorized uses) to maintenance level 4 (smooth surface that provides a moderate degree of user comfort and convenience at moderate travel speeds). The road system provides access to areas on the Coconino NF including private land, recreational opportunities, research sites, facilities, and to support forest and resource management.

Desired Conditions for Roads

The transportation system (roads) provides reasonable motorized access to the public, city, county, state, and other federal entities for permissible uses such as recreation, fire management, wildlife management, and access to infrastructure or neighboring land. The transportation system expands and contracts commensurate with use and needs, and it balances the desire for access with management activities and ecological effects. An economical system of sustainable, well maintained, and marked roads provides diverse opportunities to explore the forest while protecting watershed conditions, recreation opportunities, scenery, heritage resources, rare plants, fisheries, and wildlife habitat and movement. However, the transportation system does not necessarily provide for user comfort or all-weather access on all roads.

Road corridors and associated infrastructure (including those under easement or permit) are designed, constructed, and maintained to provide safe access while maintaining and meeting other desired conditions applicable to the area.

Temporary increases in roads are appropriate for projects associated with watershed protection and restoration. Temporary roads that support ecosystem restoration activities, fuels management, or other short-term projects are rehabilitated promptly after project completion. The minimum road system necessary for public, administrative, and private access within areas that affect water supplies, such as the Inner Basin, C.C. Cragin Reservoir, and Upper and Lower Lake Mary, protects water quality and quantity.

Motor vehicle use occurs at sustainable levels on the Coconino NF to provide opportunities for a variety of motorized use types and levels of challenge for a diversity of users. Travel restrictions are clearly understood by forest visitors.

Objectives for Roads

Decommission 200 to 800 miles of a combination of unauthorized roads and system roads not identified on the motor vehicle use map during the 10 years following plan approval. The motor vehicle use map is developed through a separate process established under the Travel Management Rule. Road decommissioning may be done in coordination with other management activities, such as the Four Forest Restoration Initiative.

Standards for Roads

Motorized vehicle use shall occur as identified on a designated system of roads, trails, and areas (including locations designated for motorized big game retrieval), as defined on motor vehicle use maps, except for those uses authorized by law, permits, and orders in connection with resource management and public safety.

Guidelines for Roads

Roads should be located, designed, and maintained to move toward or maintain desired conditions for other uses and resources.

Roads should have adequate drainage to avoid accelerated soil erosion, loss of vegetation, and long-term effects on soil productivity.

Roads should be signed to facilitate navigation of designated motorized routes and to prevent motorized use outside of designated areas and routes. Boundaries and routes should be clearly and uniformly identified through appropriate tools and management techniques.

Road maintenance and improvements should be consistent with Recreation Opportunity Spectrum, ROS objectives to maintain recreation opportunities and settings.

Soil and water BMPs should be implemented to protect water quality while designing, constructing, reconstructing, or relocating new and existing roads, parking areas and pullouts. For example, permanent and temporary road construction and relocation should:

- Occur outside of streamcourses and aquatic management zones, except where crossing is required.
- Avoid wetlands, springs, seasonally wet meadows, and montane meadows.
- Avoid soils that are unstable and highly erodible where connected to streamcourses.

Unneeded roads should be decommissioned to maintain an efficient and sustainable road system that maintains or moves toward other resource desired conditions.

Existing roads should be used or realigned before new roads are constructed to avoid areas where disturbance-sensitive threatened and endangered species are present.

For projects where long-term access is not needed, temporary roads should be used and naturalized in a timely manner. The intention is to have the road footprint, and potential effects from road use, such as possible introduction of invasive species, modification of scenic integrity objectives, or increased sedimentation into connected waters, on the landscape for as short a time as possible.

Bridges, culverts, stream crossings on permanent roads, and diversion structures should be designed to allow safe passage for aquatic organisms. Passage barriers are acceptable when needed to physically separate native and non-native species.

Management Approaches for Roads

Work closely with the State, counties, and other Federal agencies to resolve right-of-way issues and to ensure that public access to the various parts of the Coconino NF on State, county, or permanent National Forest System roads meets management objectives for all ownerships.

Work closely with utilities to ensure access to rights-of-way and infrastructure.

Cooperate with the National Park Service to identify Forest Service roads near boundaries with national monuments that should be closed or decommissioned from the system to prevent trespass onto National Park Service land.

Consider wildlife and plant habitat needs early in the transportation and development planning process.

Work closely with the Arizona Game and Fish Department, Arizona Wildlife Linkages Working Group, Arizona Department of Transportation, and others to identify linkages and potential barriers to wildlife movement and to mitigate such threats during project design.

Take advantage of opportunities to work with the Federal Highway Administration, Arizona Department of Transportation, and other road management agencies to improve safe wildlife movement across interstate highways.

Encourage private landowners who use forest roads to take maintenance responsibility for roads that serve primarily private uses.

Cooperate with local and regional governments, Federal Highway Administration and Arizona Department of Transportation on the planning, design, construction, and maintenance of highway corridors.

The application of seasonal timing restrictions is site-specific and may vary depending on variables such as species; weather; timing of activity relative to species life cycle; or duration, frequency, and type of activities that are occurring in the species' habitat. Other variables to be considered could include the duration, extent, and intensity of the proposed activity, or the type of activity itself, such as emergency or safety-related actions versus non-emergency activities. The best available information and science is utilized to develop seasonal restrictions to reduce effects on disturbance-sensitive species.

Factors in prioritizing the naturalization of decommissioned and unauthorized roads include the following:

- Watershed Condition

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- Soils that are receiving, or are expected to receive, damage to the extent that soil productivity is or will be significantly impaired outside of the road prism.
 - Riparian areas (springs, wetlands, or stream reaches) that are impaired or non-attaining due to sedimentation or alterations to hydrology related to the road.
 - Meadows at the TEUI montane meadows polygon map unit scale that are likely to be or are being damaged.
 - Poorly located, designed, or maintained roads connected to downstream impaired or non-attaining waters, where potential for increased runoff and sedimentation is high.
 - Wildlife, Fish, and Plants
 - Habitats for threatened, endangered, or sensitive species that are susceptible to roads as barriers or roads as mortality hazards.
 - Social and Cultural Values
 - Areas of high or very high scenic integrity.
 - Roads that provide undesirable access to archaeological sites and areas of traditional cultural use by consulting tribes.
 - Areas where user conflict must be resolved or to ensure public safety.
 - Areas with Semiprimitive non-motorized ROS objectives.
 - Roads where use levels or road maintenance causes adverse noise effects on recreational experiences.
 - Redundant roads.
 - Roads that are not identified on the motor vehicle use map, which are not needed for administrative purposes.
 - Roads that continue to be used for public access despite motorized restrictions.

Apache-Sitgreaves Forest

Desired Conditions for Motorized Opportunities

A maintained road and motorized trail system is in place and provides for safety and access for the use (e.g., recreation, minerals, vegetation treatment, fire protection) of the Apache-Sitgreaves NFs.

Users have opportunities for motorized access and travel on a system of designated NFS roads, NFS motorized trails, and motorized areas.

The transportation system provides a variety of recreation opportunities including varying degrees of difficulty, from OHV trails to paved scenic byways, while limiting resource and/or user conflicts.

NFS roads, motorized trails, and motorized areas are easily identified on the ground (e.g., well marked).

The road and trail system is accessible from local communities, State, county, and local public roads and trails.

Loop trails exist for motorized trail users. Tread Lightly!® principles are commonly practiced.

The location and design of roads and trails does not impede wildlife and fish movement.

Objectives for Motorized Opportunities

Annually, maintain at least 20 percent of the passenger vehicle and 10 percent of the high-clearance vehicle NFS roads.

Annually, maintain at least 20 percent of NFS motorized trails.

Standards for Motorized Opportunities

Motorized vehicle travel shall be managed to occur only on the designated system of NFS roads and motorized trails and designated motorized areas.

Unless specifically authorized, motorized cross-country travel shall be managed to occur only in designated motorized areas.

Temporary road construction shall minimize the effects on resource values and facilitate road rehabilitation. Temporary roads shall be rehabilitated following completion of the activities for which they were constructed.

Road maintenance and construction activities shall be designed to reduce sediment (e.g., water bars, sediment traps, grade dips) while first providing for user safety.

Guidelines for Motorized Opportunities

New motorized trails or additions to designated trails should include destinations and loops to provide for a variety of opportunities.

New roads or motorized trails should be located to avoid Mexican spotted owl protected activity centers, northern goshawk post-fledging family areas, and other wildlife areas as identified; seasonal restrictions may be an option.

New roads, motorized trails, or designated motorized areas should be located to avoid meadows, wetlands, seeps, springs, riparian areas, stream bottoms, sacred sites, and areas with high concentrations of significant archaeological sites. The number of stream crossings should be minimized or mitigated to reduce effects on aquatic species.

As projects occur in riparian or wet meadow areas, unneeded roads or motorized trails should be closed or relocated, drainage restored, and native vegetation reestablished to move these areas toward their desired condition.

As projects occur, roads or motorized trails that contribute to negative effects on cultural resources should be closed or relocated.

As projects occur, redundant roads or motorized trails should be removed to reduce degradation of natural resources.

Roads and motorized trails removed from the transportation network should be treated in order to avoid future risk to hydrologic function and aquatic habitat.

Trail markings (e.g., signs) should be designed to complement the character of the surrounding lands.

Roads and motorized trails should be designed and located so as to not impede terrestrial and aquatic species movement and connectivity.

As projects occur, existing meadow crossings should be relocated or redesigned, as needed, to maintain or restore hydrologic function using appropriate tools such as French drains and elevated culverts.

After management activities occur in areas with high potential for cross-country motorized vehicle use, methods (e.g., barriers, signing) should be used to control unauthorized motorized use.

Tonto Forest

Standards and Guidelines

Where possible, locate roads on natural benches, ridges, flat slopes near ridges or valley bottoms, and away from stream channels.

Roads should be located on well-drained and stable ground, avoiding seeps and other unstable areas.

Stream crossing approaches should avoid steep pitches and grades in order to prevent sedimentation.

Where channel crossings are necessary, select an area where the channel is straight and cross the channel at right angles.

In streams inhabited by fish, structures need to provide for fish passage. In addition, structures containing natural stream bottoms are preferred over culverts.

Reduce road dimensions to that which will adequately fulfill anticipated needs and avoid large road cuts and fills.

An interdisciplinary (I.D.) team will evaluate the need for buffer strips between proposed roads and adjacent water bodies. Where a buffer strip is deemed necessary, the I.D. team will recommend the width of strip needed to achieve adequate protection of aquatic and riparian resources.

Avoid channel changes or disturbance of stream channels and minimize effects on riparian vegetation.

Provide necessary water drainage structures as road construction proceeds.

Road runoff should not be discharged directly into streams, but should be diverted over stable vegetated areas or riprap.

Minimize excavation with a balanced earthwork design; the area of cut slopes should be minimized in order to reduce erosion and slope instability.

Construction should take place only when soil conditions are not too wet. Large cut and fill slopes should be stabilized.

Bridges and culverts should be installed in a way that prevents stream sedimentation and channel changes and provides for fish migration.

Affected Environment

Forest system roads within the analysis area are managed in accordance with current management objectives that are based on a variety of needs for access and use of forest resources. The system of roads range from primitive, unsurfaced roads, (maintained for resource protection and not user comfort), aggregate surfaced roads, (maintained for varying degrees of user comfort) and double lane asphalt surfaced state highways. These roads form a transportation system that provides access to the area for a variety of uses, including vegetation treatments, fuel treatments, fire suppression and recreation. The majority of these system roads were planned and constructed during past commercial harvest activities and are not accessible year round by all types of vehicles. These roads were designed for primary use by a standard log truck. In addition to passenger vehicles and high clearance vehicles many of these roads are used by off highway vehicles, hikers, mountain bikers and horseback riders.

Some roads within the project area are poorly located. They may be overly steep and difficult to drain, located in drainages, too close to streams or a number of other situations. Many of these roads are difficult to maintain and are causing soil and water resource damage.

The number of miles of county, state and federal highways within and outside of the project area that provide access to the project area and link it with potential wood processing facilities is not estimated. Since the location of potential future processing facilities is unknown it is not possible to identify all public roads which may or may not be used for accessing the area.

Current National Forest System Roads within Rim Country

Currently there are approximately 5,682 miles of NFS roads within the project area on Forest Service lands. Table 1 displays the miles of road by operational maintenance level.

Table 1: Rim Country Project Area Existing Road Mileage Summary

Maintenance Level	A-S	Coconino	Tonto	Total
1- Basic Custodial Care (closed)	1,747	189	140	2,076
2 - High Clearance	856	1,417	591	2,864
3 - Suitable for Passenger Vehicles	347	240	82	669
4 - Moderate Degree of User Comfort	22	11	38	71
5 - High Degree of User Comfort	0	0	2	2
Total System Roads	2,972	1,857	853	5,682

Issues/Indicators/Analysis Topics

The following significant issue was identified for the Rim Country Project:

Roads

The miles of temporary roads needed in the proposed action may negatively affect watershed and stream conditions, and wildlife habitat and connectivity. Commenters asked that the Forest Service to limit road networks to those roads needed for access and management. Commenters requested an alternative that dramatically reduces temporary road mileage.

How Issue is addressed:

Alternative 3 was partially developed to respond to this issue. It includes the least number of miles of temporary roads. Design features and/or mitigation measures will be developed to reduce effects on watersheds, streams, and wildlife habitat. This issue will be addressed in the effects analysis for all alternatives.

Indicators/Measures:

Indicators will include the range of temporary roads that may be needed in each of the alternatives, measured by the approximate number of miles of temporary roads proposed in each alternative.

Assumptions and Methodology

The Rim Country project area consists of 1.24 million acres on the Apache-Sitgreaves, Coconino, and Tonto National Forests. However within this area, several other environmental analyses have been conducted in recent years. These previous analyses affect the type of transportation analysis conducted in this document.

Two environmental assessments totaling 61,101 acres, recently analyzed for transportation needs for mechanical thinning and also for road decommissioning. No additional transportation analysis was conducted in these areas within the Rim Country EIS project area. These projects are:

Larson- 29,921 acres- Apache-Sitgreaves National Forest
Upper Rocky Arroyo- 31,180 acres- Apache-Sitgreaves National Forest

Six other environmental assessments totaling 192,187 acres, analyzed only for transportation needs for mechanical thinning and did not analyze for any road decommissioning. These projects are:

- Upper Beaver Creek- 48,245 acres- Coconino National Forest
- Clints Well- 16,825 acres- Coconino National Forest
- CC Cragin- 63,867 acres- Coconino National Forest
- Rim Lakes- 33,746 acres- Apache-Sitgreaves National Forest
- Show Low South- 4,624 acres- Apache-Sitgreaves National Forest
- Timber Mesa-Vernon- 24,880 acres- Apache-Sitgreaves National Forest

On the Coconino Forest 212,720 acres are identified for mechanical treatment as part of the Rim Country EIS. On the Apache-Sitgreaves Forest 243,995 acres are identified for mechanical treatment. On these two forests, all mechanical treatment acres are assumed to require adequate road access to facilitate the removal of forest product resulting from forest restoration work.

On the Tonto forest 210,251 acres have been identified for mechanical treatment as part of Rim Country, however, many of these acres are dominated by chaparral, juniper or other vegetation with less ponderosa pine present. While these areas may be mechanically treated, it is unlikely that mechanical thinning would be carried out on all of these acres due to the small amount of merchantable material present.

Areas not proposed for mechanical treatments with wood products removal would not need the same level of access as those areas where forest products would be utilized. A minimum cutoff of 100 square feet of basal area/acre of ponderosa pine was used to determine which acres would likely need adequate road access to remove forest products. Based on this cutoff point of 100 square feet of basal area/acre of ponderosa pine, 80,561 acres on the Tonto were analyzed for temporary road construction needs. The remaining 129,690 acres on the Tonto were not analyzed for temporary road construction needs as removal of forest products is considered to be unlikely.

As a result of these previous analyses and the basal area threshold of 100 sq. ft./ac. on the Tonto Forest, temporary road needs will only be analyzed for on 243,995 acres of the Apache-Sitgreaves, 212,720 of the Coconino and 80,561 acres of the Tonto for a total of 537,276 acres within the Rim Country project area.

Road decommissioning will be analyzed for on 1,080,341 acres within the Rim Country EIS project area. This represents the entire project area outside of the Larson and Upper Rocky Arroyo analysis areas, which have already been analyzed for road decommissioning in previous analyses.

Summary of Alternatives and Resource Protection Measures (Design Features, Best Management Practices, Mitigation and Conservation Measures)

The design features relating to transportation and shown in Table 2 below, would be implemented under the Rim Country EIS

Table 2: Transportation Design Features

Design Feature	Description	Forest Plan Compliance	Specialist Recommendations	Primary Purpose
T 1	Avoid locating temporary roads on soils with severe erosion hazard.		X	The completion of a total maximum daily load assessment may result in developing additional water quality improvement strategies and mitigation of effects within associated watersheds
T 2	On areas to be prescribed burned, if decommissioned roads are used as fire lines, return decommissioned roads to their pre-burn condition. Rehabilitation of the surface should refer to the soil and water BMPs for rehabilitation of fire lines and disturbed areas.		X	Discourage use on previously decommissioned roads and maintain a safe and economic road system.
T 3	Where temporary road construction is unavoidable, provide soil protection through implementation of any of the following methods to control sediment and protect water quality. Methods may include, but are not limited to: wattling, hydro-mulching, straw or wood-shred mulching, spread slash, erosion mats, terraces, blankets, mats, silt fences, riprapping, tackifiers, soil seals, seeding and side drains, and appropriately spaced water bars or water spreading drainage features.		X	To protect long-term soil productivity and water quality.

T 4	Utilize road safety signage with any project road activities that are related to project implementation.		X	Provide for user safety.
T 5	Utilize the closest material source that has the specified material type for all road maintenance/reconstruction/relocation projects.		X	Minimize energy use for road maintenance/reconstruction/relocation activities.
T 6	Existing and newly constructed roads are maintained throughout the life of the project. Drainage control structures will receive maintenance prior to monsoon season and winter shutdown of project operations. Drainage should be maintained and improved as needed. Consider wildlife in the design, installation, and maintenance of these structures.		X	Proper maintenance of roads throughout the life of the project will ensure that drainage structures are functioning correctly and that concentrated surface run-off does not occur.
T 7	Road maintenance through the timber sale contract or stewardship contract should require pre-haul, concurrent with use and post-haul maintenance on all roads to be used for haul.		X	Provide for a safe travel surface and provide for access to the project area.
T 8	Decommissioned roads should have the roadbed removed and natural contours and gradients restored as much as possible. Slash or other suitable erosion material (mats, wattles, jute, silt fence, etc.) should be used where necessary and disturbed areas should be seeded with a suitable erosion control seed mix consisting primarily of native grass species. Roads that are in closed status should be either lightly scarified and seeded or stabilized with erosion control features (e.g., rolling the grade, waterbars, etc.). Road entrances should be blocked to prevent access and signed as closed. Camouflaging of road entrances with large rocks and woody debris may prevent unauthorized access and improve stability. Road drainage features such as lead-out ditches or waterbars should not be hydrologically connected to stream channels on active or closed roads.		X	To protect long-term soil stability/productivity and water quality by reducing overland flow and sediment delivery originating from these locations.
T 9	As a condition of approval for use of a temporary road under any contract involving mechanical thinning, temporary roads will be		X	To protect long-term soil productivity and

	decommissioned, using any one or combination of appropriate methods, by the purchaser/contractor when mechanical treatments are finished.			water quality and ensure that temp roads do not become de facto new roads.
T 10	Temporary roads should be located outside of Aquatic Management Zones (AMZs). If trees need to be removed, avoid old and large trees, as well as oaks and aspens where feasible.		X	To minimize adverse effects on tree structure, filter strips and minimize road disturbance from temporary roads and need for fills in stump holes.
T 11	Roads causing damage to hydrological resources, cultural resources or threatened endangered, and sensitive species habitat are a priority for decommissioning.		X	To reduce effects on aquatic habitats from roads.
T 12	Do not borrow road fill or embankment materials from the stream channel or meadow surface on road maintenance or stream crossing projects. Compact (compress) the fill dirt.		X	To minimize disturbance in drainage systems, sediment production within channels, and changes to channel morphology that will alter aquatic habitats.
T 13	Where feasible, relocate roads out of drainage bottoms to an upland location. If this is not feasible, rock armor outfall of drainage features as an energy dissipater.		X	To minimize sediment delivery into and disturbance to drainage systems, and minimize sediment production within channels.
T 14	Avoid road rehabilitation and maintenance during periods of sustained or heavy rainfall.		X	To minimize erosion and negative effects from sediment and other contaminants on water bodies and

				aquatic and associated habitats and cave/karst systems
T 15	When deemed necessary in order to prevent potential damage to water pipelines, the Forest Service shall coordinate any hauling activity which will cross water pipelines with the owner of the line. Care shall be taken to prevent damage to pipelines which may include mitigation measures such as gravel padding or other suitable measures.		X	Prevent damage to water pipelines
T 16	While in operation, appropriate dust abatement measures will be taken on roads and pit areas where trucks are operating if necessary		X	Reduce dust and minimize visibility issues on roads.

Environmental Consequences

Alternative 1 – No Action

Direct and Indirect Effects

Use of Existing Roads

Under Alternative 1-No action, no new restoration activities would take place and no additional use of existing roads would occur. Current rates of public and administrative use would continue.

Road Maintenance

Under Alternative 1-No action, maintenance to provide public and administrative access would continue, contingent upon funding. No increase in road maintenance to accommodate restoration activities would occur.

Road Decommissioning

Under Alternative 1-No action, no road decommissioning would occur within the project area unless it is analyzed under separate NEPA analysis

Temporary Roads

Under Alternative 1-No action, no new temporary roads would be constructed, unless constructed under separate NEPA analysis

Rock Pit Use and Expansion

Under Alternative 1-No action, there would be no expansion of existing pits. Current use of existing and new pits analyzed under separate NEPA would continue.

Use of In-woods Processing and Storage Sites-

Under Alternative 1-No action, no in-woods processing and storage sites be created or used; therefore there would be no effects resulting from them.

Forest Plan Amendment(s)

Under Alternative 1-No action, there would be forest plan amendments and therefore no effects

Cumulative Effects

Use of Existing Roads

Under Alternative 1-No action, there would be no cumulative effects

Road Maintenance

Under Alternative 1-No action, there would be no cumulative effects

Road Decommissioning

Under Alternative 1-No action, there would be no cumulative effects

Temporary Roads

Under Alternative 1-No action, there would be no cumulative effects

Rock Pit Use and Expansion

Under Alternative 1-No action, there would be no cumulative effects

Use of In-woods Processing and Storage Sites-

Under Alternative 1-No action, there would be no cumulative effects

Forest Plan Amendment(s)

Under Alternative 1-No action, there would be no cumulative effects

Effects Common to All Action Alternatives

An adequate transportation system to provide access for restoration work and for removal of forest products generated from restoration activities is critical for accessing stands identified for mechanical treatment. Listed in the following paragraphs are practices that are common to all action alternatives.

Use of Existing System Roads

It is assumed that nearly all of the existing roads within the Rim Country analysis area may at some point in time be used to provide access for a variety of restoration activities, including hauling of forest products resulting from mechanical treatments. Mileage of existing system roads by maintenance level (ML) is shown in table 1. Nearly all of the Forest System roads

within the project area are ML 1, 2 or 3 roads. This analysis addresses temporarily opening, existing closed roads (ML-1) to utilize them for the time period that they are needed to provide access for restoration work. These roads shall be closed upon completion of work in the area they access and returned to a closed status (ML-1).

It is proposed in the preferred alternative in the Tonto Travel Management EIS that 354 miles of ML 2 roads be converted to motorized trails. These have received minimal maintenance over the years and their current condition is not anticipated to improve (narrowing, roughening up or otherwise modifying the road as it's redefined to a motorized trail). Full size vehicles would be authorized to use these routes under Tonto Travel Management and they would be managed as motorized trails. A motorized trail is defined as: "A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail." It's anticipated that pre-haul maintenance is all that would be needed in the future to prepare the motorized trails for use to access mechanical treatment areas.

Roads used for hauling of forest products under this analysis would be maintained or improved in order to meet road management standards under National Best Management Practices for Water Quality Management on National Forest System Lands.

Road Maintenance

Road maintenance is defined as, "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. This work includes brushing of roadside vegetation, falling danger trees, road blading, cleaning ditches, cleaning culvert inlets and outlets, etc." (36 CFR 212.1)

Road maintenance on roads that receive substantial use by the public are often maintained by the Forest Service on a regular basis as funding allows. When there is a substantial increase in use of a road by a Forest Service contractor for uses such as hauling this contractor is usually required to perform maintenance both during and after their use of the road commensurate with their use. This maintenance is often blading and reshaping of the road surface. Road maintenance on roads that are closed to the public would be performed by the logging contractor.

Roads used for hauling of forest products under Rim Country would generally be maintained by contractors. This maintenance would likely be done while the road is being used and at the completion of hauling. All maintenance performed by contractors would be in accordance with Forest Service maintenance standards.

Road Decommissioning

Road decommissioning is defined as: "Activities that result in the stabilization and restoration of unneeded roads to a more natural state." (36 CFR 212.1, FSM 7705 – Transportation System)

The Forest Service Manual (7712.11- Exhibit 01) identifies five levels of treatments for road decommissioning which can achieve the intent of the definition. These include the following:

- Block entrance
- Revegetation and water barring
- Remove fills and culverts
- Establish drainageways and remove unstable road shoulders
- Full obliteration recontouring and restoring natural slopes

These five treatment levels provide a wide range of options to stabilize and restore unneeded roads. In some cases restoration may be achieved by blocking the entrance. In other situations, more extensive actions may be called for.

This analysis will not identify specific road segments for decommissioning. Rather it shall provide the NEPA decision to decommission roads and road segments at the time that task orders or other projects are implemented. Roads would be evaluated for decommissioning at that time. Roads may be decommissioned for a variety of reasons including but not limited to roads that are:

- No longer needed for future management
- To protect cultural resources
- Causing soil or water resource damage
- Not useable without significant investment beyond current and future funding levels
- An ongoing road maintenance challenge
- An unauthorized road (an unauthorized roads is defined as road that is not a forest road or a temporary road and that is not included in a forest transportation atlas).
- Other unique situations

Under these alternative both National Forest Systems roads and unauthorized roads could be decommissioned. When a system road is decommissioned it is also removed from the National Forest Road System.

Road decommissioning recommendations contained in the Transportation Analysis Process (TAP) reports and Travel Management Decisions for the Coconino, Apache-Sitgreaves and Tonto forests and site specific on the ground evaluations would be considered in selecting roads for decommissioning.

On the Tonto Forest, decommissioning of system roads is being analyzed as part of the Tonto Travel Management EIS and roads for decommissioning are identified. Roads identified for decommissioning under the Tonto Travel management EIS could be physically decommissioned as part of restoration work undertaken as part of the Rim Country EIS. Additional roads on the Tonto could also be identified for decommissioning as needed under the Rim Country EIS.

Unless already identified for decommissioning under the Tonto Travel Management, roads on all 3 forests in Rim Country that are needed to provide reasonable skidding distances for future harvesting would not be decommissioned. Also roads that are needed to provide access for leases and other special uses on National Forest lands would not be decommissioned, unless other suitable access is provided. If these roads are needed for future management but are a problem for soil and water resources they would instead be relocated.

Unauthorized roads within the project area could be decommissioned under this decision on all forests. Roads currently designated as open under a forest's Motor Vehicle Use Map would not be decommissioned or closed under this alternative.

Road Relocation

Road relocation is defined as moving an existing road from its current location and re-locating it to a new location. Unfortunately many roads within the project area are poorly located and were

never properly designed. As a result these roads are in need of relocation. Roads that could be considered for relocation include those that are:

- Too steep resulting in significant erosion
- Below the level of the surrounding land and are difficult to drain.
- Are too close to a seasonal or perennial waterbody and contributing sediment to the waterbody
- Other unique situations
- Any combination of the reasons listed above

When roads are relocated, their former location would be decommissioned. This would result in little if any net gain or loss in road mileage in most cases. Road relocation of a system road is not considered construction of a new permanent road. It is considered a relocation of an existing road.

This analysis will not identify specific road segments for relocation. Rather it shall provide the basis to relocate roads and road segments at the time that task orders or other projects are implemented. Roads would be evaluated for relocation at that time.

Temporary Roads

The Collaborative Forest Landscape Restoration Act (CFLRA), does not allow for the construction of new permanent road in CFLR projects. Any new road constructed under CFLRA must be a temporary road and cannot be added to the National Forest road system. All new road construction in this project will be considered temporary.

A temporary road is defined as: “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)

In order to provide adequate access to the project area for wood product removal, some temporary roads would need to be constructed in some locations. Temporary roads for this project are intended to provide as short term access to a specific area for wood product removal and/or follow up treatments, such as prescribed burning. Temporary roads are often used to provide economically feasible skidding distances in harvest operations. Following completion of work in the area they serve, temporary roads would be decommissioned and made impassable to vehicles. Decommissioning will be accomplished with one or more of the five levels of treatments described above, under Decommissioning.

Temporary roads may be either new construction or may utilize existing road prisms of unauthorized roads.

Rock Pit Use and Expansion

Rock pit use and expansion could require a limited amount of temporary road. This mileage is included in the estimated temporary road mileage under each action alternative.

Use of In-woods Processing and Storage Sites

In-woods processing and storage sites could require a limited amount of temporary road. This mileage is included in the estimated temporary road mileage under each action alternative.

Forest Plan Amendment(s)

There would be no effects on roads as a result of forest plan amendments

Effects Unique to Each Action Alternative and Differences Among Them

Alternative 2- Modified Proposed Action

Direct and Indirect Effects

Use of Existing Roads

It is assumed that nearly all, if not all system roads within the project area could be utilized at some point in time to carry out restoration activities.

Road Maintenance

Roads that would be utilized for restoration work and hauling of forest products would likely see pre-haul maintenance if needed to make the roads passable to truck traffic, as well as maintenance during hauling and post haul maintenance. This maintenance would be in addition to a forest's regular schedule of maintenance.

Road Decommissioning

Under this alternative up to 200 miles of system road on the Coconino and Apache-Sitgreaves National Forests could be decommissioned. The Tonto National Forest Travel Management EIS has identified approximately 290 miles of road within the Rim Country project area for decommissioning. In addition to system road decommissioning, up to 800 miles of unauthorized roads on all 3 forests may be decommissioned under this alternative.

Road Relocation

Roads may be relocated as needed under this alternative in order to reduce adverse resource effects, to facilitate use for restoration activities and improve public safety.

Temporary Roads

Under this alternative up to 330 miles of temporary road could be utilized to facilitate mechanical treatments. These temporary roads may be new construction or also utilize existing unauthorized roads. Temporary roads would be decommissioned when thinning and related restoration work is completed in the areas that they access.

Cumulative Effects

Use of Existing Roads

Use of existing roads under this alternative would be in addition to current use by both the public and contractors and permittees of other authorized projects on national forest lands

Road Maintenance

Road maintenance performed under this alternative would be in addition to road maintenance performed currently under a forest regular program of road maintenance

Road Decommissioning

Road decommissioning performed under this alternative would be in addition decommissioning of national forest system roads and unauthorized roads that has been performed in the past.

Road Relocation

Any roads relocated under this alternative would be in addition to roads relocated on other projects within the Rim Country project area.

Temporary Roads

Temporary roads that are constructed and then decommissioned would be in addition to temporary roads that have been constructed and utilized on vegetation and fuels reduction projects in the past.

Alternative 3- Focused Restoration Alternative

Direct and Indirect Effects

Use of Existing Roads

It is assumed that nearly all, if not all roads within the project area could be utilized at some point in time to carry out restoration activities.

Road Maintenance

Roads that would be utilized for restoration work and hauling of forest products would likely see pre-haul maintenance if needed to make the roads passable to truck traffic, as well as maintenance during hauling and post haul maintenance. This maintenance would be in addition to a forest's regular schedule of maintenance.

Road Decommissioning

Under this alternative up to 200 miles of system road on the Coconino and Apache-Sitgreaves National Forests could be decommissioned. The Tonto National Forest Travel Management EIS has identified approximately 290 miles of road within the Rim Country project area for decommissioning. In addition to system road decommissioning, up to 800 miles of unauthorized roads on all 3 forests could be decommissioned under this alternative.

Road Relocation

Roads may be relocated as needed under this alternative in order to reduce adverse resource effects, to facilitate use for restoration activities and improve public safety.

Temporary Roads

Under this alternative up to 170 miles of temporary road could be created and utilized to facilitate mechanical treatments. These temporary roads may be new construction or also utilize

existing road prisms of non-systems roads already present. Temporary roads would be decommissioned when thinning and related restoration work is completed in the areas that they access.

Cumulative Effects

*****Use of Existing Roads**

Use of existing roads under this alternative would be in addition to current use by both the public and contractors and permittees of other authorized projects on national forest lands.

Road Maintenance

Road maintenance performed under this analysis would be in addition to road maintenance performed currently under a forest regular program of road maintenance.

Road Decommissioning

Road decommissioning performed under this alternative would be in addition decommissioning of national forest system roads and unauthorized roads that has been performed in the past.

Road Relocation

Any roads relocated under this alternative would be in addition to roads relocated on other projects within the Rim Country project area.

Temporary Roads

Temporary roads that are constructed and then decommissioned would be in addition to temporary roads that have been constructed and utilized on harvesting and fuels reduction projects in the past.

Irreversible and Irretrievable Commitments of Resources

Irreversible and irretrievable commitments of resources related to transportation are analyzed under individual resource areas in this document

Unavoidable Adverse Effects

Unavoidable adverse effects related to transportation are analyzed under individual resource areas in this document

Short-term Uses and Long-term Productivity

Effects from short-term uses and long-term productivity related to transportation are analyzed under individual resource areas in this document

Discussion of Literature

None

Other Agencies and Individuals Consulted

Chris Miller- Forest Engineer, Apache-Sitgreaves National Forest- Road decommissioning and temporary road construction mileages and information on gravel pit locations

Debbie MacIvor- Forest Engineer, Apache-Sitgreaves National Forest Road decommissioning and temporary road construction mileages and information on gravel pit locations

Christine Crawford- Forest Engineer. Tonto National Forest- Gravel sources

Nick Warnke- Assistant Forest Engineer, Coconino-Kaibab National Forest, Zone Engineering- Gravel sources and pit locations

Glossary

Administrative NFS Road: Administrative National Forest System Roads are maintenance level (ML) 2-5 roads with motorized access restricted to administrative use only. Traffic may be managed with gates.

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))

Closed Road: An existing system road closed to vehicular traffic, including administrative traffic. Closed roads are coded Maintenance Level (ML) 1 in the Forest Transportation Atlas data base.

Decommissioned Road. Decommissioned roads have been permanently removed from the NFS. They continue to be tracked in the transportation atlas for future reference. These roads should have received a level of physical maintenance, ranging from a Maintenance Level type closure to a complete obliteration.

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).

Motorized trails are defined as a trail that is designated for motorized travel that is 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 National Forest System lands (FSM 2353.05).

National Forest System Road. A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county or other local public road authority. (36 CFR 212.1, 36 CFR 251.51, 36 CFR 261.2, FSM 7705)

Objective Maintenance Level. The maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The objective maintenance level may be the same as, higher than, or lower than the operational maintenance level. The transition from operational maintenance level to objective maintenance level may depend on reconstruction or disinvestment. (FSH 7709.59, 62.3)

Opening a Road The act of allowing motorized use on an existing Maintenance Level 1 (ML1) National Forest system Road (NFSR). Activities to accommodate motorized use include removing physical barricades such as berms, boulders, vegetation, and re-establishing and maintaining drainages and runoff patterns along the roadway.

Recreation Opportunity Spectrum (ROS) – A framework for defining the types of outdoor recreation opportunities the public might desire, and identifies that portion of the spectrum a given national forest area might be able to provide

Road Decommissioning Activities that result in the stabilization and restoration of unneeded roads to a more natural state. (36 CFR 212.1)

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)

- **NFS ROADS CLOSED TO ALL MOTOR VEHICLES**

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 non-motorized 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).

References Cited

None