Appendix A

Report
On
Peavine Mountain Roads Analysis

Carson Ranger District, Humboldt-Toiyabe National Forest
In cooperation with
The City of Reno and Washoe County
Nevada

December 2002

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Executive Summary

Introduction

Peavine Mountain is a popular destination for locals and tourists. Growing use on the mountain, road-related recreation demands, and road-related effects to ecosystem values require preparation and planning.

The Forest Service has implemented a road initiative that shifted its policy from ***developing*** its transportation system to ***managing*** its transportation system. The road initiative consists of two parts – a rule and a policy. The rule addresses the Code of Federal Regulations (36 CFR Parts 212, 261, and 295. Effective date: January 12, 2001) and the policy issues direction as amendments to Forest Service Manual Title 7700 - Transportation System. The road management policy addresses all existing and future roads that the Forest Service has jurisdiction over. The analytical tool that has been developed to achieve these objectives is the Roads Analysis Process.

Roads Analysis at the watershed scale is a six-step process that will display opportunities to adjust road systems to efficiently and effectively achieve transportation objectives in ways that protect ecological integrity and public safety. Roads analysis is a dynamic process that serves as a framework for periodic reevaluation of road systems and road management strategies.

The process has six steps:

- ⇨ Setting up the analysis
- ⇨ Identifying issues
- ⇨ Describing opportunities and setting priorities
- ⇨ Describing the situation
- ⇨ Assessing benefits, problems, and risks
- ⇨ Reporting

The road system on Peavine Mountain, which is mostly developed, needed to be examined to determine if the roads were responsive to public needs, environmentally sound, safe for public use, affordable, and efficiently managed. An Interdisciplinary Team (IDT) has completed this Roads Analysis Process for Peavine Mountain as one of the first steps in preparation and planning to address growing use, road-related recreation demands, and resource pressures generated by the road system.

The product of this analysis is a report for decision makers and the public that documents the information used to identify opportunities and set priorities for Peavine Mountain; maps displaying the existing and a recommended road system on the mountain, and the risks and opportunities for each road; and tables to display specific priorities for changes in the road system. This analysis will inform future management decisions on the merits and risks of building new roads in previously unroaded areas; relocating, upgrading, or decommissioning existing roads; managing traffic; and enhancing, reducing, or discontinuing road maintenance.

Key Findings

The public, especially local residents, have very strong feelings concerning road management on Peavine Mountain.

- Public opinion indicates a desire for a wide variety of road and trail related opportunities. For many the mountain has become Reno's backyard playground.

- Public opinion indicates a desire for establishing and protecting access to the mountain, especially as development around the mountain continues.

- Well-designed roads and trails that meet visitor needs are lacking.

    - The existing roads and trails are mostly user created and in many cases are redundant. The average road density on National Forest System Land on Peavine is nearly six miles of road per square mile. Users are continuing to create unauthorized roads and trails in an ongoing effort to meet their own needs. An opportunity exists to develop, sign and maintain a new road system comprised of existing roads and some new roads that better meets people's needs.

Many primary access routes are in need of spot re-alignment and/or reconstruction to meet road use objectives.

- Many roads were pioneered along ridgelines or drainage bottoms. Most are overly steep and without adequate drainage features. Typically the fine material that used to make up the road base has been eroded away leaving a rocky bedrock material that is difficult to maintain and difficult to navigate. While some of these road segments can be managed as challenge routes for OHV's, they can also be dangerous.

Better signing and improved trail guides are needed to help people find their way around Peavine.

- There are 322 miles of inventoried roads on Peavine (163 miles are on National Forest System Lands) yet only 95miles are classified (60 miles of which are on National Forest System Lands). The current signing on the system roads is inadequate. The unclassified roads aren't signed and maps and trail guides available quickly become out-dated. It's easy to become lost on Peavine.

There are resource concerns with some roads and trails on Peavine.

- A variety of noxious weeds exist on Peavine Mountain. Given the high density of existing roads and the possibility of continued proliferation of new unauthorized roads, there is an increased susceptibility to invasion by noxious weeds.

- The high density of the road network and the location of some roads are affecting the quality and quantity of wildlife habitat and sensitive plant populations. Wildlife habitat is being fragmented as unauthorized roads proliferate (e.g. Mule deer winter range). Sensitive plants and their habitat are being impacted by unauthorized roads.

- Some historic and prehistoric artifacts are vulnerable due to the ease of access on Peavine. Petraglyphs, grinding stones and other features have been damaged or stolen.

- Road surfaces and roadside features (such as ditches, culvert basins, cutbanks, and unvegetated surfaces) can generate erosion and contribute to degradation of water resources. Preventative maintenance measures such as stabilization and vegetation of roadside features can significantly reduce this concern.

As roads age and their use increases, travel surfaces, roadside features, and drainage structures deteriorate, requiring increased maintenance.

- Road maintenance funding is not adequate to fully maintain all inventoried roads on the Humboldt–Toiyabe National Forest. Available funding is targeted for the most heavily used roads on the forest. Future road maintenance plans and associated requests for funding should display the heavy use of roads on Peavine.

Section 1 -- Road System and Analysis Area
(Roads Analysis Process Step #1 & #2)

Objectives Statement
The objective of this roads analysis is to provide information for site-specific decisions, to set priorities for road management actions, and to identify special situations needing attention. At this scale, an inventory of all known classified, unclassified, and temporary roads is included in the analysis. This analysis will identify roads and trails desired to meet public needs; identify road associated environmental and public safety risks; identify site-specific priorities and opportunities for road improvements and decommissioning; identify areas of special sensitivity, unique resource values, or both; and other specific information that may be needed to support project-level decisions.

Location of the Roads Analysis Area
Peavine Mountain is situated along the northwest flanks of the City of Reno; tucked within a triangle bordered between the California-Nevada State line to the west, Highway 80 to the south and Highway 395 to the northeast. The analysis area comprises 46,648 acres, of which 18,215 acres or 44% are National Forest System lands managed by the Humboldt-Toiyabe National Forest, Carson Ranger District. The remaining area includes other public lands and private lands managed by the City of Reno and Washoe County. Elevations range from 4,960 feet to 8,300 feet at Peavine Mountain summit. See Map 1.

Physical Characteristics
The oldest rocks on Peavine Mountain form the upper slopes and consist of the Peavine Sequence of metamorphosed volcanic and sedimentary rock of Triassic and Jurassic age (Bonham, 1969). Granitic intrusions of Cretaceous age occur on the western slopes and metamorphosed the older volcanic and sedimentary strata.

Volcanic flows of andesite, breccia and tuff of the Tertiary Alta Formation are present on lower slopes of Peavine Mountain. The foothills of Peavine Mountain near I-80 consist of Tertiary sedimentary rock of volcanic origin including volcanic sandstone, vitric tuff, and diatomite. Quaternary gravels and alluvium occur on the lower slopes and along drainages.

Soils on Peavine fall into five general soil types. They range from partially moist soils on foothills and low hills to areas dominated by soils on high mountains. The soils on the eastern part of Peavine tend to be very shallow to moderately deep and well drained. The soils on Peavine Peak and the area to the west are well drained, shallow to very deep, and moderately sloping to very steep (USDA 1983).

Biological Characteristics
Peavine Mountain has variety of habitats that attract over 150 species of birds. The highest abundances of birds will be found in the riparian areas that have willow and aspen, but birds also inhabit the forests and brush areas. The types of birds found on Peavine Mountain include a variety of waterfowl, birds of prey, hummingbirds,

woodpeckers, flycatchers, corvids, nuthatches, wrens, thrushes, warblers, towhees, sparrows, and finches. The threatened bald eagle is a winter visitor, and the forest sensitive species – northern goshawk and white-headed woodpecker have been seen on the lower wooded slopes near Verdi.

Peavine has a variety of mammals that include species found in the Great Basin and Sierra Nevada Mountains. The lower dryer slopes have coyotes, black-tailed jackrabbits, deer mice, desert woodrats, long-tailed weasels, badgers, and mule deer. On the higher slopes, golden-mantled ground squirrels, bush-tailed woodrats, and yellow-bellied marmots are found. On the western side near Verdi and Dog Valley, the Sierran species are found. These include yellow-pine, long-eared and Townsend's chipmunks. Voles and moles inhabit the meadows and spring areas, and skunks, raccoon, beaver and muskrat are found near streams and as you near the Truckee River. Only one mammal Forest Service sensitive species has been found on Peavine – the pale Townsend's big-eared bat. The mule deer are common on Peavine, but as urban encroachment has occurred from Reno and Verdi, their winter habitat is growing smaller on the lower slopes.

There are some important plants that occur on Peavine Mountain. The Webber ivesia (*Ivesia webberi*) is a candidate species under the Endangered Species Act, and has known locations on Peavine Mountain. The Sierra Valley ivesia (*Ivesia aperta* var. *aperta*), a Forest Service sensitive species, also occurs on Peavine, as do the altered andesite buckwheat (*Eriogonum robustum*) and altered andesite popcorn flower (*Plagiobothrys glomeratus*), which are found in Nevada Rare Plant Atlas, produced by the Nevada Natural Heritage Program.

The plant communities found on Peavine Mountain occupy a transition zone between the hills on the east side of the Sierra and the dry desert of the Great Basin to the east. A growing population of aggressive *invasive weed species* threatens these communities. The mountain is located between two major highway and utility corridors. Invasive weeds include: Canada thistle, diffuse knapweed, medusa head, musk thistle, scotch thistle, and barbed goat grass. Other invasive plants may exist that have not been identified. Most of the invasive plant populations are located along roads, areas where vehicles travel off roads, burned areas, and areas where other land disturbing activities occur.

Riparian areas on Peavine Mountain are special areas because the combination of water and riparian vegetation creates a unique plant community that is not found extensively across all quadrants of the mountain. These riparian areas are typically spring fed or benefit from snowmelt that maintains water flow generally into the month of June. Many of these areas do dry up during the summer and fall months. Cattails, rose, current, bitter cherry, willow, sedges, aspen, cottonwood, and conifers are common in these areas. Peavine Mountain and Black Springs grazing allotments are currently vacant. Recreation use is moderate around most of the accessible riparian areas and high in others. These areas located along the roads on the mountain are a popular destination for many recreations. Small amounts of fuelwood are harvested primarily on the west side of the mountain near the Sierra/Washoe county line.

Plantings of conifer, rose, bitterbrush, willows, mountain mahogany, serviceberry, Jeffrey pine and Sugar pine have been done with the cooperation of local volunteers and the Nevada Division of Forestry.

The Mitchell Canyon Fire in 1984 burned 25,000 acres of brush and forest including much of the northwest portion of Peavine Mountain. The fire was intense and killed many acres of ponderosa and Jeffrey pine. Mature mountain mahogany communities were also victims of the hot fire. Conifer cover is mainly limited to the northwest and west portion of the mountain. The dominant species is Jeffrey pine. There is also ponderosa pine, white fir, sugar pine and single leaf pinyon pine. The northeast, east and south quadrants of the mountain do not have continuous conifer cover like the rest of the mountain. Conifers occupy isolated habitats on altered andesite. These sites typically have little or no ground vegetation and can be described as harsh sites. Once the conifer is removed, it may be very difficult to reestablish. Cottonwood is the main hardwood species along drainage bottoms. Aspen stands are common in those portions of the mountain that have the water to support them. There are large, well developed clones on top of the mountain west and north of Peavine peak. They are also common throughout the drainages on the north and west sides of the mountain.

The west side of the mountain still contains some old stands of mountain mahogany. These are well scattered and located along rocky ridges that tend to reduce the fire intensity. There is a well-established band of mature mountain mahogany on the north side of the mountain that extends from just north and east of Peavine Peak northwest towards Copperfield. The mahogany is growing in rugged, highly dissected, steep terrain that is on a north aspect facing Highway 395 north.

During the last twenty years many acres of mature sage and bitterbrush have been consumed by fire on Peavine Mountain. There are still patches of mature brush in locations mainly on the north and west side of the mountain however, the acreage is significantly less than it was in the recent past.

Road access on the west end of Peavine is via the FS#010 road to the #124 and #192 roads. Woodcutters use these roads to harvest Jeffrey pine and mountain mahogany fuelwood. The road that accesses the mountain from Dry Lake Summit adjacent to Highway 395 is used frequently along with the radio tower road.

Social Characteristics

Prehistoric Native American use of Peavine Mountain dates back several thousand years. A number of archaeological sites scattered across the mountain document this presence. Historical Washoe and Northern Paiute peoples used portions of the mountain year round. Big game such as deer and mountain sheep were hunted, and a wide variety of plants were collected for medicines and food. The Washoe word for Peavine, “at its rump fat or deer’s flank”, refers to the overall shape of the mountain and perhaps to the

deer herd that once inhabited the area. The Northern Paiute called Peavine "Sunflower Mountain".

The discovery of gold in California in the 1840's brought Euro-Americans to the Truckee Meadows and Peavine Mountain. The Peavine Mining District was organized in 1865 and the town of Poeville became the center for a mining boom on the mountain that lasted until 1876. At its zenith Poeville boasted a hotel, post office, a city band and regular stage service to Reno. By the turn of the century mining activity slowed but continued sporadically through the 1950's. Production numbers from 1872 to 1966 are as follows: Copper...186,612 pounds, lead…42,623 pounds, silver…76,630 ounces, and gold…1,253 ounces. The remains of many of the historic mines are still visible today. The Bureau of Land Management administered federal lands on Peavine Mountain until the Enhancement Act of the 1980s, which granted management oversight to the US Forest Service.

Peavine Mountain has played an important recreation role in Washoe County for a number of years. Historically, there was easy access from the City of Reno and neighboring communities. The area has provided a wide variety of motorized and non-motorized opportunities. While popular, it was a relatively uncrowded place to explore by four wheel drive and motorcycles and on foot. It was most popular for hiking, target shooting, hunting and wildlife viewing. As technology advanced and the population of Reno and Washoe County has grown, so has the popularity of Peavine Mountain. Traditional uses and new types of recreation use have increased many folds, especially over the last ten years. On a nice day there are hundreds of walkers, hikers, runners, mountain bikers, four wheelers, motorcyclists, ATV riders and equestrians utilizing the mountain. This trend is likely to continue. The population of Washoe County grew by 33.3% from 1990 to 2000 (www.naco.org). The areas around Peavine are rapidly being developed. Large housing tracts adjacent to the forest boundary continue to be built. Several thousand additional homes will be developed around Peavine Mountain within the next 10 years.

Economic Characteristics

Economic pressures affect roads and road use. Both benefits and costs are associated with building, maintaining and continued use of forest roads. The network of roads on the mountain have both a positive and negative affect on most land management programs.

Building and maintaining roads support some economic activity: decommissioning roads also supports some economic activity. Analyses for the 1995 RPA Program shows that about 33 jobs economy wide are supported per $1 million expenditure on building and maintaining roads. Removing existing roads and restoring the land underneath them would support roughly the same rate of employment. The difference is that road building and removal are one-time stimuli to the economy whereas road maintenance is a recurring stimulus (USDA 2000).

Resource extraction for commercial use is not significant on National Forest System lands on Peavine. Extensive exploration for mineral deposits such as gold and silver

have taken place over the years as described above. The Mountain does not have significant available timber resources although some commercial and personal fuelwood gathering does take place.

Peavine Special Use permits annually generate more than $40,700 in receipts, of which 25% is returned to the State of Nevada for distribution to counties for roads and schools. There were 63 permits in effect in 2002. The bulk of the money (approximately $38,000), was collected from the rental fees billed to the commercial communication uses that were occurring on National Forest System land. This does not include the three commercial communications sites that are being used on private land in Section 23. Most of the Special Use Permit receipts are for land rent and include uses such as eleven powerlines, two gas pipelines, ten telephone lines, etc. There were nine recreation permits issued last year, including six recreation events that generated $270 in receipts.

Presently there are no developed campgrounds, permitted outfitters or guides in the area. Potential exists for outfitters and guides to lead hunters, hikers, mountain bike riders, ATV riders an other recreationists into Peavine or through Peavine to Dog Valley, California and beyond.

Road System Characteristics

Interstate 80 is the major transportation route that provides an east-west link across northern Nevada. In addition to the Reno-Sparks area, Major population centers on I-80 include San Francisco, Sacramento, and Salt Lake City. I-80 passes within two miles to the south of the Peavine analysis area. Highway 395 is the major route passing north-south through Nevada. Population centers on 395 include Minden-Gardnerville, Carson City, and Susanville in California. Highway 395 largely skirts the northwestern boundaries of the Peavine analysis area. North McCarran and north Virginia Street are major streets that provide access to Peavine. From the freeway, highway or major streets, essentially all access onto the mountain is gained by traveling through developed neighborhoods. The primary exception being the northwest portion of the analysis area where some access is gained directly via North Virginia Street or through ranch country.

Of the 322 miles of inventoried roads in the analysis area, 93 miles or 28% are classified roads under the jurisdiction of the Forest Service, County or are privately owned. One hundred sixty three of those miles are on National Forest Systems lands of which 60 miles or 36% are classified roads. The vast majority of the roads and trails network on Peavine are pioneered or non-engineered stemming from mineral exploration, past grazing operations or recreation activities. However there are several constructed roads that are important pieces of the transportation system. For example, Forest System Road # 41641 provides access to the communication sites at the top of the mountain. It is the only maintenance level three road currently on the mountain. Most of the communication sites are located on private land. This road also provides access to owners of private in holdings located further down the mountain. Communication site operators periodically maintain the road to various standards. Currently there is no maintenance agreement between the Forest Service and the communication site users or other private landowners.

The pioneered roads usually follow steep ridge tops and drainage bottoms and frequently cross one another. It is not uncommon to find numerous roads leading to the same place. Many roads are eroded and readily visible from many miles away; especially those in the low sage and grass communities.

The following is a summary of the existing inventoried road network and their attributes on Peavine Mountain.

TABLE 1.1a Summary of Existing Roads			
	National Forest Roads	**Other Ownership**	**Total Roads on Peavine**
Classified Roads	**60 miles**	**33 miles**	**93 miles**
Unclassified Roads	**103 miles**	**126 miles**	**229 miles**
Total	**163 miles**	**159 miles**	**322 miles**
Density (mi./sq. mi.)	**5.60**		**4.82**

TABLE 1.2a Summary of Recommended Roads			
	National Forest Roads	**Other Ownership**	**Total Roads on Peavine**
Roads	**71 miles**	**30 miles**	**101 miles**
Density (mi./sq. mi.)	**2.20**		**1.42**

Section 2 – Key Questions and Issues
(RAP Step #3)

Identifying the most important road-related issues and information needed to resolve these concerns is the expected product at this step in the analysis. The issues include environmental, social, and economic components.

Recent public involvement in the Northern Sierra Amendment (NOSA) and public scoping for the Peavine Mountain Roads and Recreation Strategy helped produce a list of issues and concerns that are relevant to this roads analysis. Included in the public involvement was consultation with other agencies including Tribal members, Nevada Department of Wildlife, and State and local governments. The key road related issues are listed below:

Environmental Issues

Issue #1: What are the short and long term effects on the road system on watershed health and safety?

Economic Issues

Issue #2: What are the economic implications associated with the road system?

Access and Safety Issues

Issue #3: ***How does the road system accommodate use and safety in a manner that is consistent with established standards?***

Social Issues

Issue #4: ***How does the road system respond to people's perceptions of which roads are important to them and people's perceived needs and values for access?***

Issue #5: ***What are the effects of the road system on people's recreation experience?***

Section 3 – Benefits, Problems, and Risks

(RAP Step #4)

In this section the interdisciplinary team examines the major uses and effects of the road system to generate the information baseline against which the existing and future road systems can be compared. The main element in this step is to assess the various benefits, problems and risks of the current road system.

Environmental Issue:

Issue #1: What are the short and long term effects of the road system on watershed health and integrity?

Ecosystem Functions and Processes (EF)

Question EF (2): *To what degree do the presence, type, and location of roads increase the introduction and spread of exotic plant and animal species, insects, diseases, and parasites? What are the potential effects of such introductions to plant and animal species and ecosystem function in the area?*

Existing roads and trails significantly increase the introduction and spread of exotic plant species. Areas currently infested are bisected by roads and trials. Motorized and non-

motorized traffic traveling through these areas transport seed to non-infested sites. Areas adjacent to roads and trails are generally disturbed and provide excellent habitat for exotic plants to establish and thrive. The introduction and spread of exotic animals, insects, diseases, and parasites is of limited concern.

The effects of exotic species on native plants, animals, and ecosystem function are numerous. Native plants and animals have to compete with exotics for available resources (light, water, nutrients, and habitat). Frequently exotics out compete and eventually displace natives. Ecosystem processes negatively affected, include nutrient cycling, hydrologic function/cycling, erosion, and fire frequency and intensity.

Question EF (4): *How does the road system affect ecological disturbance regimes in the area?*

Roads and trails potentially change the frequency, intensity, and behavior of fire in the area. Human started fires are more common in roaded versus non-roaded areas. Roads and trails increase flooding frequency and severity.

Question EF (5): *What are the adverse effects of noise caused by developing, using, and maintaining roads?*

Noise from OHV/OSV use on roads can potentially disturb wildlife by disrupting normal behavior patterns and/or minimizing their ability to hear and detect predators. Wildlife may be more susceptible to noise disturbance during certain times of the year, such as the nesting season when birds may be flushed from a nest site from traffic noise, leaving eggs or chicks exposed and vulnerable to predation. Disturbance from traffic noise may have more of an effect on wildlife when the disturbance is not consistent. For example, wildlife may be able to habituate to traffic traveling in a consistent pattern along a designated road system and conversely may be more stressed by erratic traffic such as snowmobiles traveling cross-country.

Aquatic, Riparian Zone, and Water Quality (AQ)

Question AQ (1): *How and where does the road system modify the surface and subsurface hydrology of the area?*

Roads can affect the routing of water through a watershed by intercepting, concentrating, and diverting flows from their natural flow paths. The streams on Peavine have not been field inventoried, but the stream/road map shows where the stream channels are in proximity to the road system. These areas are most likely to have altered surface hydrology from intercepting flow. On the upper part of the mountain are meadows and aspen groves, some which have perennial water from springs. Roads through these wet areas tend to become rutted and can locally lower the water table and concentrate flows.

Question AQ (2): *How and where does the road system generate surface erosion?*

The roads on Peavine Mountain have not been surveyed for erosion problems. However, it is likely that many of them are eroded and continue to erode from wind, water and OHV use. District staff reports that there are many rutted roads and areas with gullies. Many of the soils in this area are sandy and susceptible to erosion. Surface erosion is also sensitive to road maintenance practices. Most of these roads are not maintained and have no erosion control or drainage features on them, thereby increasing the possibility of erosion.

Question AQ (5): *How and where does the road system create potential for pollutants, such as chemical spills, oils, de-icing salts, or herbicides, to enter surface waters?*

The OHV play areas, such as the 7th Street pit, would be the most likely source of water contamination from spills of oil, hydraulic fluids, etc. The impact from this is probably small. Chemicals are not applied to the road surfaces for maintenance or safety.

Question AQ (6): *How and where is the road system "hydrologically connected" to the stream system? How do the connections affect water quality and quantity (such as, the delivery of sediments and chemicals, thermal increases, elevated peak flows)?*

The Peavine road/stream map highlights the road/stream intersections and those segments of road within the riparian conservation areas (RCA) as defined in the Sierra NV Framework. These are the areas most likely to be hydrologically connected to the stream system. There are 94 road/stream crossings on the mountain and 45 miles of roads with the RCAs. (This information was pulled from GIS so the number is not exact). Very few of these crossings have culverts. Most of the crossings and RCAs are on ephemeral channels and draws. Water quality would be impacted during high-intensity events such as summer thunderstorms or rain-on-snow. The primary impact would be the delivery of sediments downstream. There may be some run-off to the Truckee River during these types of storm events.

Question AQ (7): *What downstream beneficial uses of water exist in the area? What changes in uses and demand are expected over time? How are they affected or put at risk by road-derived pollutants?*

There are no beneficial uses assigned to these waters. The State of Nevada has not classified these streams.

Question AQ (8): How and where does the road system affect wetlands?

There are a series of meadows on the upper part of the mountain that have been impacted by roads. Impacts include rutting, surface erosion and compaction.

Question AQ (11): *How does the road system affect shading, litterfall, and riparian plant communities?*

The road system has little to no affect on shading and litterfall due to the limited amount of roads that are within or along stream corridors. However, riparian plant communities are greatly impacted by roads in the area. Roads located in meadows and in aspen stands reduce the amount and health of riparian plant communities through soil compaction, changing the hydrologic function in meadows, and through the actual displacement of plants.

Question AQ (12): *How and where does the road system contribute to fishing, poaching, or direct habitat loss for at-risk aquatic species?*

There are no at-risk aquatic species in this area. Some people fish in the small reservoir on the east side of the mountain, but it's a minor use of the area.

Water Production (WP)

Question WP (1): *How does the road system affect access, constructing, maintaining, monitoring, and operating water diversions, impoundments, and distribution canals or pipes?*

One resident that lives on North Virginia Street west of Anderson Acres, accesses her water supply via the Poeville Road, and a route that travels through Section 13. The Forest Service manages an impoundment at the Cottonwood Dam (also known as Upper Kiowa Pond). Other water systems in the area may occur.

Terrestrial Wildlife (TW)

Question TW (1): *What are the direct effects of the road system on terrestrial species habitat?*

The impacts on terrestrial ecosystems include direct habitat loss, habitat fragmentation and habitat alteration. Habitat loss from road development may have serious impacts on wildlife if the amount of available habitat is limited and the road development is extensive. Many species have the ability to move and adjust to a new area following disturbance, depending on the availability and proximity of unoccupied habitat. A successful adjustment also depends on the level of ongoing disturbance that may be associated with the creation of new roads. For example, the development of new roads may lead to an increase in off-road excursions, both on foot and vehicle, extending the disturbance impacts much father than the road corridor. Habitat fragmentation due to roads limits some species ability to effectively migrate, thus influencing distribution and abundance of wildlife populations. Depending on the design of the road, it may act as a physical barrier to large animals such as carnivores and ungulates. Roads can also act as psychological barriers to smaller species such as mice and ground squirrels, where even though the rodents are physically able to cross, the alteration of the landscape confuses their perception of normally used travel routes. Roads alter landscapes by breaking up vegetation patterns and possibly changing species composition by the introduction of exotic species.

Question TW (2): *How does the road system facilitate human activities that affect habitat?*

Roads allow easier access for a variety of recreationists wanting to explore new on and off-road terrain. The impacts from such excursions may include soil compaction from motorized and non-motorized user created trails, increased noise pollution, and increased likelihood of illegal wood harvesting. Maintenance associated with road development also may affect habitat by the removal of large diameter trees for road clearing and road maintenance (hazard tree removal).

Question TW (3): *How does the road system affect legal and illegal human activities (including trapping, hunting, poaching, harassment, road kill, or illegal kill levels)? What are the effects on wildlife species?*

Road systems may encourage illegal activities such as overnight camping and off-road travel in restricted areas. User created trails fragment and alter habitat and increase the likelihood of disturbing nesting or denning wildlife. Another consequence from roads includes the threat of wildfire. Studies have shown that 78% of all human caused wildfires were within 265 feet of a road. Although wildfire is a natural process benefiting many ecosystems, human caused fires can occur in areas with a limited natural fire-regime, thereby altering the habitat significantly and differently than a naturally caused fire. Roads may also encourage over collecting of rare plants and illegal hunting in non-designated hunting zones. Easy access from roads may also increase legal hunting activities in areas that were previously little used. This increased concentration of hunting could apply significant pressure to big game populations.

Question TW (4): *How does the road system directly affect unique communities or special features in the area?*

Within the Peavine road system, roads may affect critical deer winter range by disrupting migratory patterns and fragmenting unique foraging areas. Travel on these roads (and presumably off the roads,) may cause deer to move more frequently and urgently, reducing energy reserves and possibly decreasing reproductive capability.

The US Fish and Wildlife Service is currently being petitioned to list the Sage grouse as endangered under the Endangered Species Act. Although breeding habitat for the sage grouse historically occurred throughout Nevada, suitable habitat has greatly diminished in the past 50 years with significant population declines as a result. Local task groups and government agencies are working to protect remaining habitat and possibly enhance other habitat for reintroduction efforts. Portions of the Peavine recreation area contain habitat features similar to those required by sage grouse and therefore may be considered as an area for enhancement opportunity.

Migratory birds may also be affected from the presence of roads due to the increase in "edge" habitat created along roadsides. Parasitic birds such as the brown-headed cowbird are opportunistic nest predators who thrive in edge environments. Many migratory birds

did not evolve with the cowbird and are not well adapted to its parasitism. Significant declines in migratory bird populations have occurred over the last ten years as a result of increased brown-headed cowbird populations.

Timber Management (TM)
Question TM (1): *How does road spacing and location affect logging system feasibility?*

Road spacing and location on Peavine were not established with logging system feasibility as a consideration. Roads on the top of the mountain do access relatively flat ground that would be suitable for log landings but there are no commercial timber stands on top of the mountain. Ninety-five percent of the commercial timber on Peavine is located on the northwest side of the mountain. Most of these trees are growing on fairly steep slopes that dictate the use of aerial systems to extract the timber. Road location and spacing is not suited to either cable or helicopter logging. There are a few places where ground based systems could be used to skid timber downhill to designated landings. However, roads would still need to be built to access these landing locations.

Question TM (2): *How does the road system affect managing the suitable timber base and other lands?*

The road system does not facilitate managing the suitable timber base and other lands. The suitable timber base is confined to areas less than 25 percent slope. Nearly all of the commercial timber stands on Peavine are on the unsuited or "other lands". Design standards are virtually non-existent for these roads. Common problems are: steep grades, tight turns, no drainage, narrow travel ways, native surface is clay or sharp rock, indirect routes, no turnouts or turnarounds. Without improvements to the roads, they are inaccessible to most commercial vehicles.

Question TM (3): *How does the road system affect access to timber stands needing silvicultural treatment?*

Cultural treatments like thinning and planting would have additional expense associated with difficult access.

Economic Issues

Issue #2: What are the economic implications associated with the road system?

Minerals Management (MM)
Question MM (1): *How does the road system affect access to locatable, leasable, and salable minerals?*

The community of Poeville was established as a mining community but now sees little production. Other parts of the mountain and road system have exploration results present in the form of adits and some are in need of mitigation for safety. The area does not seem to present a capability of future mining activity except for common variety mineral materials including sand and gravel as was removed at the Seventh Street Pit. The access road to Poeville is a public road used by the four or so residents of Poeville. The Poeville Road also receives use by communication site traffic and recreationists. The Poeville Road appears to have been designed and constructed at one time. The remaining roads in the system lack the appearance of having been designed for commercial use.

Special Forest Products (SP)
Question SP (1): *How does the road system affect access for collecting special forest products?*

The current road system is more than sufficient for the collection of special forest products, and generally, actions taken to close or decommission roads on Peavine would not affect access for this purpose.

Special Use Permits (SU)
Question SU (1): *How does the road system affect managing special-use permit sites (concessionaires, communication sites, utility corridors, and so on)?*

There are no known legal concessionaires currently using the Peavine transportation system. There are five communication sites on National Forest System (NFS) land on Peavine and two private communications sites (Section 23). All of the communication sites have power. In addition there are several power, communication and telephone line corridors and one natural gas line in the area.

Access and Safety Issues

Issue #3: ***How does the road system accommodate use and safety in a manner that is consistent with established standards?***

General Public Transportation (GT)
Question GT (1): *How does the road system connect to public roads and provide primary access to communities?*

Planned subdivisions in the vicinity of Robb Drive will provide for emergency and public access to the Peavine Road System. There may be undeveloped private land between the planned subdivisions and NFS lands. Kings Row access is limited due to the size of the access width. Keystone Community Corporation access via Leadership Parkway should be sufficient access to the southeast portion of the mountain. Hoge Road access needs to be investigated further. City Snowplows are physically limited on this street. Access from Raleigh Heights is adequate. Horizon hills is similar to Robb Drive. Poeville Road is a public Road, but no one claims maintenance between Poeville and the County Road system. Anderson Acres and Dry Lake Summit have inadequate railroad crossings.

Question GT (2): *How does the road system connect large blocks of land in other ownership to public roads (ad hoc communities, subdivisions, inholdings, and so on)?*

The Poeville Road connects the private land at Poeville and the private land at Peavine Peak where the private communication sites are located. There is also private land in Nevada on the northwest side of Peavine that is accessed from Rd 192 via Sierra Country Long Valley Road in California.

Question GT (3): *How does the road system affect managing roads with shared ownership or with limited jurisdiction (RS 2477, cost-share, prescriptive rights, FLPMA easements, FRTA easements, DOT easements)?*

A shared ownership, limited jurisdiction situation exists with the Poeville Road on private land. Easements may need to be pursued for the private communication site on Peavine Peak that uses the Poeville Road. A FLPMA Utility Easements may be appropriate for a utility corridor in sections 27 and 33 in the SE part of Peavine.

Question GT (4): *How does the road system address the safety of road users?*

The vast majority of the road network on the National Forest meets neither use nor maintenance standards. Roads were typically pioneered along ridge tops and drainage bottoms following the lay of the land and did not have water drainage features. Consequently many road segments are overly steep. Fine road surface materials have typically eroded away leaving rocky bedrock material. Numerous roads are not currently passable in a safe manner.

Administrative Use (AU)
Question AU (1): *How does the road system affect access needed for research, inventory, and monitoring?*

The current road system provides access to, or reasonably near, most places on the mountain. As stated in question GT4, safety is a concern given the current condition of most roads.

Question AU (2): *How does the road system affect investigative or enforcement activities?*

Due to the massive size of the road and trail system on Peavine Mountain, lack of patrol personnel, and extended response times, law enforcement faces a huge challenge in investigative and enforcement activities.

The majority of violations are reported by the public long after the crime has been committed. Most of the time there is little or no useful evidence at the scene to develop a prosecutable case.

Incident details including, when, where, or who committed the violation are vague at best. The public are not trained observers and typically offer very little information. Often, it is difficult to determine exactly where a violation occurred because the reporting party has a difficult time describing the location in terms the officer or message taker can understand. They will use a locally known name of an area that we are not familiar with. Also, countless times law enforcement personnel have received reports of a violation that occurred on "…the road that has the shot-up, brown post, with a number on it, (they usually don't remember what the number was), that goes to so and so." This is not very informative when there are five roads or trails that all go to the same place.

Many times the person taking the initial report does not ask the right questions including reporting party (RP) information. A lack of information makes it impossible for the officer to contact the RP in order to clarify the details of the incident.

Most of Peavine offers an unhindered line of sight; therefore violators normally detect law enforcement personnel approach and disappear into the maze of roads and trails.

Public comments have indicated that local law enforcement cannot take action on crimes. This is a misconception. The H-T is under proprietary jurisdiction. This means that local law enforcement has the authority to enforce local laws on National Forest system lands.

A realistic, enforceable law enforcement plan would be very difficult to implement given the size of the road and trail system, lack of patrol/maintenance personnel, and extended response times.

Protection (PT)
Question PT (1): *How does the road system affect fuels management?*

Access and ease of travel onto the Forest are key variables in the final selection of treatment choices. Fuels treatment alternatives in the Peavine analysis area treatment choices can be grouped into four main categories; mechanical treatment, prescribed fire, livestock grazing and herbicide treatment. .

The main road systems identified as critical to future fuels treatment work in the analysis area are: the Whites Lake Summit road (accesses the northwest Peavine area), the 641 "Poeville/main Peavine Road/Repeater Road" accessed from North Virginia Street (accesses the west Peavine area), the 664 series of roads accessed via Raleigh Heights sub-division, (accesses the southwest Peavine area), the 658B and 661 roads, accessed via Hoge Road (accesses southwest Peavine area), the 659 road series accessed via Keystone Canyon from McCarran Street (accesses the south Peavine area), the 124, 419 and 192 roads accessed via Dog Valley and the Mitchell Canyon side of Peavine, (accesses the east Peavine area). The Mogul Mountain road accessed via the Mogul subdivision needs to be included in future access plans. This road lies within state and city jurisdiction but will play a vital role in urban interface fuels treatment projects as private development encroaches upon the south facing aspect of Peavine Mountain.

In addition to these road systems is the need to plan for continued access in existing and future subdivision developments. Access is a critical issue for the success of future urban interface fuels treatment projects. Critical urban interface areas that require access are: Horizon Hills, Raleigh Heights, Hoge Road, Keystone Canyon, future development west of Keystone Canyon, Mogul subdivision, and future development sites west of Mogul.

The required condition and integrity of the road systems used in fuels treatment projects will not be known until fuels projects are identified by site specific location and treatment selection. Roads will need to be able to support masticators, brush hogs, and chippers. In addition, roads will be used as holding lines for controlled fires ignited by hand and aerial ignition. Access points may be used to stage crew carriers, livestock trucks and transport trucks.

Question PT (2): *How does the road system affect the capacity of the Forest Service and cooperators to suppress wildfires?*

To a large extent, the existing Peavine Mountain Road System has determined the intensity and extent of fire suppression activities as well as suppression personnel's ability to fight fires in the area. The road system has been the foundation for delivering firefighters and suppression resources. The roads into the Peavine area have proved useful during actual fire suppression to help limit fire spread under low and moderate conditions. However, more intense rapidly spreading fires, or those accompanied by spotting i.e., (the 1980 Mitchell Canyon fire which burned over nine thousand acres and the 2000 Seneca fire that burned over one thousand acres) exceeded the road system's capacity for suppression forces.

The road systems are a "two edged sword" for fire management. Since 1940 there have been over 20 fires recorded in the Peavine area. Of those fires, eleven have been attributed to human caused or suspicious origin. The other nine have been caused by lightning. Fire records demonstrate that the road system into the Peavine area, allow for an increased probability in human caused fires in what would be otherwise classified as a remote area. Human caused fires have been responsible for over twenty-four thousand burned acres since 1940. Lightning-caused fires charred over five thousand acres within the same period. Roads offer fire suppression personnel an access from which to base suppression action, but increase the probability that a human caused fire will occur. Historical fire records demonstrate that human caused fires will burn almost five times more acres than lightning fires. Part of this may be attributed to the weather environment and fire suppression preparedness levels associated with thunderstorm activity.

In the Peavine area, gating and placing barriers for administrative purposes (maintenance level 1) rather than decommissioning roads would help satisfy the needs of Fire management. Placing strategic barriers rather than decommissioning roads would leave fire management with the option to reduce recreational travel into fire prone areas during times of heightened fire danger and provide road access during time of emergency fire suppression activity.

Question PT (3): *How does the road system affect risk to firefighters and to public safety?*

The greatest fire safety concern associated with road access is at the interface of urban and forest lands. Homeowners along the Sierra Front and Peavine in particular have built homes adjacent to the forest boundary. Not all forest system roads will accommodate the large emergency vehicles used by the Forest Service and the local fire agencies. U.S. Forest Service and municipal firefighters must sometimes attempt fire suppression actions without reasonable access.

The road systems of Peavine affect the risk to firefighters and the public through three main categories: 1., quality of access from subdivisions, 2., condition of roads, and 3., accuracy of route designations and road restrictions.

The first risk to fire fighters is access from subdivisions. Suppression resources require right of entry and staging points in historically fire prone areas. Peavine Mountain is a high fire prone area. Records indicate that since 1940 there have been over twenty fires. Within the last forty years, large, fast moving, erratic fires have threatened the subdivisions of Anderson, Horizon Hills, Raleigh Heights, Keystone Canyon, Northwest Reno, Mogul and developments west of Mogul. Access points historically used along this area include: Whites Lake Summit, which gains entry to the northwest Peavine area, the "Poeville/main Peavine Road/Repeater Road", which accesses the west Peavine area, the 664 series of roads associated with the Raleigh Heights sub-division, which gains entry to the southwest Peavine area, the entry point at the end of Hoge Road, which is the access for the southwest Peavine area, the Keystone Canyon entrance, which serves as an entry point for the south Peavine area, and Mogul Mountain road, which is used to gain entrance from the Mogul subdivision. It is imperative that these areas continue to provide access for firefighters and that future residential developments along the Peavine urban interface incorporate wildland fire suppression right of entry as part of their development design.

The greatest risk to firefighters and the public is the plethora of unmarked roads that dead end and/or expose the traveler to extremely uneven terrain and erosive soils. They invite travel but can lead to the entrapment of emergency vehicles and unsuspecting recreational users during fast moving, erratic wildland urban interface fires. Access points could offer increased firefighter and public safety if provisions were made for improved parking/staging areas and road information. These areas could be equipped with information displaying designated travel routes, fire information, emergency evacuation routes, and other recreational/interpretive information. Designated access/parking areas could be used for day use recreation. They could be used as evacuation routes during initial attack of fire suppression operations. If needed they would be transformed into staging and drop points during extended suppression activities.

In addition to the improved access points, a travel map defining designated routes and road restrictions i.e., four wheel drive, and spur roads would be a valuable tool for cooperating suppression agencies and recreational users.

PT (4): *How does the road system contribute to airborne dust emissions resulting in reduced visibility and human health concerns?*

All of the existing 322 miles of roads on Peavine Mountain are comprised of native materials. Road densities average nearly 5 miles of road per square mile of road. The 7th Street pit is about 50 acres in size and is mostly denuded of vegetation. Frequent fires take place resulting at least a temporary loss of vegetation. Windy conditions are frequent and the amount of dust generated can be substantial. No definitive studies have taken place to quantify airborne dust emissions.

Social Issues

Issue #4: ***How does the road system respond to people's perceptions of which roads are important to them and people's perceived needs and values for access?***

Social Issues (SI)

Question SI (1): *What are people's perceived needs and values for roads? How does road management affect people's dependence on, need for, and desire for roads?*

People in northwest Reno consider Peavine Mountain to be their backyard. The roads and trails on Peavine are a large part of their recreation and quality of life. The south and southeast areas are the most heavily used areas of the mountain. Pedestrians, mountain bikers, off road vehicles users including quads, trail bikes and 4X4 trucks and SUVs, use the roads and trails. Many new trails are pioneered annually. Fire and fire suppression scars are typically used as transportation routes.

There is a strong desire by the community to keep roads and trails open for all kinds of recreation. Some people desire only their type of recreation be allowed, but vast majorities have expressed that motorized and non-motorized, mechanized and non-mechanized recreation can co-exist.

Question SI (2): *What are people's perceived needs and values for access? How does road management affect people's dependence on, need for, and desire for access?*

As in many areas, traditional access points are being lost to development at a rapid rate. People have expressed interest in maintaining access to "their mountain" for their daily recreation needs.

Neighborhoods back directly to the forest boundary on the south and east sides of Peavine Mountain. Some people sought specifically to live adjacent to access points. Some people utilize the access points as party spots. Revving of engines, loud music and dust from spinning wheels is a problem for residents on the forest boundary.

Access for emergency vehicles is important to both the public and agencies.

Question SI (3): *How does the road system affect access to paleontological, archaeological, and historical sites?*

It depends on the character of the resource, proximity to the roadway, amount and type of travel, surrounding terrain, etc. Generally though the more and easier road access to a given area the more archaeological resources are impacted and negatively affected.

Question SI (4): *How does the road system affect cultural and traditional uses (such as plant gathering, and access to traditional and cultural sites) and American Indian treaty rights?*

Better or more developed road systems obviously enhance access to such resources and sites for everyone including Native Americans. Elders who are no longer able to hike or walk longer distances do much of the traditional use of natural resources. A better road system or lack of it, may have a direct affect on the amount use an area gets. An active herbalist may be in favor of better road access to a point, particularly if he or she is elderly. The same may apply to spiritual leaders, although they also would be very much in favor of restricted access for the general public and of course complete confidentiality in any event. Executive Order #13007 addresses the issue in its first section:

> "In managing Federal lands, each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites."

Neither Washoe or Paiute groups took a treaty with the U.S., however their status as American Indians gives them rights to access culturally important areas, both for procurement of natural materials and for spiritual purposes. Any proposed change in the status or use of lands administered by the USFS should prudently include consultation with local Indian communities. This consultation should take place early in the planning process and be carried out at the government-to-government level.

Question SI (5): *How are roads that are historic sites, affected by road management?*

If a road is found to be historically significant during the Section 106 compliance process of survey, documentation and evaluation any adverse affects to its integrity must be mitigated. For instance, if the historic stage road from Reno to Poeville were identified and evaluated as significant any heavy road maintenance (grading, realignment, construction of drainage structure, etc.) with potential to alter its original character or impact associated historic features within the road prism would have to be mitigated by capturing a photographic record of the road prior to any work. Accurate mapping of the road course, plus archival research relevant to the historic use of the road would be

undertaken. This process is managed by the National Park Service and is called "Historic American Engineering Recordation" or HAER. It can be costly.

Closing a road might also involve ripping and seeding or otherwise impacting the integrity of the road prism. This would also require mitigation if the road being closed is historically significant.

Any action land managers propose that may encourage more use of or potential adverse impacts to an historic property (road, site, etc.) could be considered an undertaking subject to Section 106 consultation with the State Historic Preservation Office.

If a road is historic and evaluated as not significant then it is not subject to mitigation or further protections and may be managed at our discretion.

Question SI (6): *How is community, social and economic, health affected by road management (for example, lifestyles, businesses, tourism industry, and infrastructure maintenance)?*

The existence of roads and trails and associated recreational opportunities on Peavine may contribute to the quality of life and to high property values in Northwest Reno. Conversely, the very same conditions coupled with associated noise, recreational shooting, dust, and risk of fire, may take away from the quality of life may have the opposite affect. The management of the Poeville/Peavine Road affects the mobile and telephone communication for Reno, Nevada; Truckee and North Lake Tahoe, California.

Question SI (10): *How does road management affect people's sense of place?*

The most heavily used roads and trails on Peavine are non-maintained routes in the south and southeast areas of the mountain. The management of the road and trails system has minimal affect on the residents of Poeville. It has a major affect on the residents of the neighborhoods surrounding the mountain because of their reliance on the mountain as their recreation area. The use of the mountain contributes to the feeling of place in their homes and neighborhoods.

Passive-Use Value (PV)
Question PV (2): *Do areas planned for road construction, closure, or decommissioning have unique cultural, traditional, symbolic, sacred, spiritual, or religious significance?*

We have very little survey information for the Peavine area; most of what we know is from anecdotal sources. Historically both Washoe and Paiute peoples are known to have used the mountain. There are rock art sites known for the lower south slope of the mountain near Keystone Canyon and also Bull Ranch Creek. Other significant cultural and spiritual sites on the mountain exist. A case-by case research and survey effort, and consultation with Indian elders would need to be conducted to determine the presence of significant cultural associations and archaeological sites.

Question PV (3): *What, if any, groups of people (ethnic groups, subcultures, and so on) hold cultural, symbolic, spiritual, sacred, traditional, or religious values for unroaded areas planned for road entry or road closure?*

Washoe groups and probably Paiute have cultural ties to Peavine. There may be some descendants of Basque herders in the Reno area who would be interested. There maybe also some descendants of early miners who founded such towns as Poeville, Auburn and Brooklyn.

Issue #5: ***What are the effects of the road system on people's recreation experience?***

Unroaded Recreation (UR)
Question UR (1) *Are there now or will there be in the future excess supply or excess demand for unroaded recreation opportunities?*

Recreational experiences typically associated with unroaded areas revolve around the opportunity to experience solitude in a natural or nearly natural setting. Unroaded recreational opportunities certainly exist on Peavine but are very limited when compared to the roaded opportunities.

Peavine Mountain is located adjacent to northwest Reno communities and has long been a destination area for all types of recreational users. Road densities (classified and unclassified) are high throughout the project area (approximately 5miles per square mile). Road densities are highest in the south and eastern portions of the mountain. Road densities tend to be high here because of the character of the land; open rolling hills in close proximity to popular access points near or within dense urban housing. Other areas of dense roads exist in the extreme northwest portion of the mountain. This country is more isolated from urban areas but is still quite accessible. This area is characterized by higher elevation, wooded, mountainous terrain.

To the south on the other side of Interstate 80, adjacent to west Reno communities lies the Carson Range including the 31,000 acre Mount Rose Wilderness. Much of the Carson Range is National Forest including the Wilderness area. Public access to the Carson Range is more limited. Motorized use is not allowed in the Mount Rose Wilderness. Unroaded opportunities are generally of higher quality and much more abundant in this area. The Carson Ranges provides a viable unroaded alternative to Peavine Mountain.

Other outlying areas that provide unroaded recreational opportunities on national forest include Dog Valley (24,000 acres) located just west of Peavine in California.

The unroaded opportunities that do exist on Peavine are generally on the north facing slopes of the mountain and extend to some of the forested lands on the west side of the mountain. The public-at-large and local residents place a high value on maintaining or increasing non-motorized opportunities closer to the Northwest Reno neighborhoods.

The current demand for unroaded recreation opportunities at Peavine probably already exceeds supply but alternative, quality areas described above help offset the demand. As the Reno metropolitan area continues its rapid growth, the demand for quality unroaded experiences close to Reno will become more acute. Holding or reducing road densities on portions of Peavine would help meet the anticipated demand.

Roaded Recreation (RR)

Question RR (1): *Is there now or will there be in the future excess supply or excess demand for roaded recreational opportunities?*

As stated in UR (1) Peavine Mountain has long been a popular recreation area, especially for motorized activities. When the Forest Service acquired lands on Peavine from the BLM in 1988, it was already a well-established motorized playground. The BLM's Lahonton Management Plan of 1985 recognized Peavine as an important roaded recreation area. It documented concern for the proliferation of unauthorized roads occurring and consequently restricted motorized travel to designated routes. Since that time all types of use, especially motorized use has increased significantly. Correspondingly, the proliferation of unauthorized roads and trails continues at an accelerated pace. Road densities average around five miles per square mile and are even higher on the south east portion of the mountain. Unclassified (generally unauthorized) roads outnumber classified roads by nearly 4 to 1.

Classified and unclassified roads currently exist on nearly every ridge and drainage bottom of many portions of the mountain. In many instances redundant routes lead to destination spots. There are numerous routes providing the entire range of roaded experiences from driving for pleasure to extreme "adventure" travel, including challenging hill climbing where individuals test their personal limits or their vehicle's limits. The exception would be a lack of higher standard roads suitable for low-clearance vehicles, two-wheel drives or sedans, and vehicles pulling trailers. With these exceptions there is currently an excess of routes needed to meet visitor needs. Use of existing routes does not exceed capacity even on the busiest days. It is expected that the road system on Peavine will continue to experience increased use as metropolitan Reno and surrounding communities continue to grow. Demand is not expected to exceed supply on Peavine.

Other roaded areas in the general area include Dog Valley to the west and BLM managed lands to the east. Roaded opportunities are expected to continue to exceed demand in the Peavine area.

Miles of single-track exist on Peavine. Virtually all routes have been pioneered and are utilized by motorized and non-motorized enthusiasts. Users pioneered in virtually all of these routes over time. Many users (both motorized and non-motorized) feel they are confined to roads when they prefer single-track trails and have expressed a need for more designed trails of this type. Currently demand for motorized single-track and ATV trails

exceeds supply. It is expected that demand for this type of trail system will increase in the future.

Question RR (2) *Is developing new roads into unroaded areas, decommissioning of existing roads, or changing maintenance of existing roads causing substantial changes in the quality, quantity, or type of roaded recreation opportunities?*

An estimated 322 miles of roads have been identified on the mountain. They are located on National Forest, Washoe County, City of Reno and private lands. Only a very small portion was actually constructed. Users pioneered in the vast majority of the network. Generally, these routes are located on ridgelines and drainage bottoms following the lay of the land. Most roads contains sections that are rough, rocky, and very steep.

While there is an ample quantity of roads as described above, the overall quality of these roads confines the type of use that can take place on them. Motorcycles, ATV's, Jeeps, and other high clearance four-wheel drives (pickups and SUV's) are the typical vehicles used on the mountain. Local towing companies do a pretty fair business rescuing vehicles whose drivers underestimated the prevailing road conditions.

Some roads are particularly steep and are sought out to challenge drivers and their vehicles. Other roads while steep and rocky in places are important routes for enthusiasts who want challenges and to explore the land. Many of these users typically enter the area from one side of the mountain and exit on another.

A constructed road FS#41641 leads from the north side of the mountain to numerous communication sites on the mountaintop at approximately 8,300 feet in elevation. The communication site users sporadically maintain this road and it is often rutted. This is an extremely important road for many users because it is the only road that can be utilized by low clearance and two-wheel drive vehicles to reach the top of the mountain. Lack of proper and timely maintenance affects the access for low clearance vehicles.

Changing maintenance of some roads to a higher level would broaden the spectrum of roaded recreation opportunities on the mountain. By the same token it would reduce the number of challenge roads desired by more extreme enthusiasts. Given the vast number of roads, changing the maintenance level on some roads could create a more reasonable balance in the roaded recreation opportunity spectrum.

Multiple roads lead to the same destinations. Opportunities exist to decommission some roads and still provide for a full range of roaded recreation opportunities. A lower road density has the potential to increase visitor experience on the mountain by providing a higher quality setting (i.e. as unneeded roads are decommissioned and rehabilitated, road scars on the landscape are reduced. Dust is also reduced).

Question RR (3) *What are the adverse affects of noise and other disturbances caused by constructing, using, and maintaining roads on the quantity, quality, or type of roaded recreation opportunities?*

As noted earlier users pioneered in the vast majority of the road and trail network. Generally, these routes are located on ridgelines and drainage bottoms following the lay of the land. Most roads are rough, rocky, and very steep. Over time much of the fine materials in the roadbeds have eroded away. Forest Service crews occasionally maintain only some of the more primary forest system roads. The inherent conditions of the roads make maintenance difficult and expensive. Most of the roads on Peavine are not maintained at all because they are not part of the forest road system or because limited funding.

Dust generated by users and maintenance equipment contributes to the overall dust problem on the mountain. Other sources of dust include sparsely vegetated areas (due in part to wildland fires or natural terrain features) and housing and infrastructure construction. It is not uncommon to observe large dust clouds that develop from Peavine Mountain and blow across the Reno metropolitan skies.

Some residents located close to roaded recreation areas on the mountain are disturbed by vehicle noise, dust, and frequent late night activates. These disturbances include noise from people partying and headlights shining into their homes. Approximately 18 miles of roads in the area are located within 500 feet of residential dwellings. Motorsports play occurs in and around the seventh street pit located on National Forest and private lands. A small portion of the pit is within 400 feet of homes.

In April 2002 a petition was circulated in northwest Reno neighborhoods. The petition asserts that, among other things, recreational motor vehicle activity is interfering with the use and enjoyment of their homes. More than 300 people signed it calling for more restrictions including quiet zones near residences. See Appendix D.

In July 2002, a *Citizen Initiative –Request for Action* was submitted by some northwest Reno residents to the Washoe County Board of Commissioners requesting adoption of ordinances that would increase recreation vehicle use restrictions from 500 feet to 3,000 feet from residences. The initiative also requests the County to *Create or assist the City of Reno and Forest Service in Causing the Creation of Access Corridors and Staging Areas from and above northwest Reno to National Forest System lands.* See Appendix D.

Question RR (4) *Who participates in roaded recreation in the areas affected by road construction, maintaining, or decommissioning?*

A wide variety of the recreating public enjoys Peavine Mountain for an even wider variety of reasons. The area serves as a gateway to the northern end of the Sierra Mountains and is a quick escape from the congestions of the Reno area (population approximately 400,000). Roads lead from Peavine west to the Dog Valley area in

California and further to the west side of the Sierras. Access is usually at the lower elevations (about 5,000 feet) in open brush country. Roads and trails lead up the mountaintop at 8,300 feet in elevation. The upper elevations are more pristine and are typically more heavily vegetated with stands of aspen, pine and fir communities. Peavine peak is the highest point in the northern Reno metropolitan area. Looking south it provides commanding views of the greater Reno area including the Truckee River, Carson Mountain Range and Mount Rose Wilderness area.

The roads and trails are utilized essentially for all motorized and non-motorized activities including: jeeping, ATVing, motorcycling, sightseeing, bird watching, hiking, dog walking, running and jogging, mountain biking, horseback riding, target shooting, rock hounding and hunting. Snowmobiling does not often occur due to lack of snow.

Peavine Mountain is heavily used mostly by Reno and Washoe County residents and by locals living in neighborhoods adjacent to the mountain. Day use is predominant including visits lasting a few hours or less. Use is high on weekends and weekday evenings (many people utilize the roads and trails after work or dinner).

Some dispersed overnight camping occurs at the higher elevations on the west and northwest sides of the mountain. The lower elevations of mountain are utilized year-round, especially when other recreation areas are covered with snow.

In addition to individuals, many organizations and clubs utilize the mountain including: The Truckee Meadows Trail Association, Friends of Peavine, Sierra Club, Fiddle Footed Four Wheelers, Hills Angles, The Hi-Lo's, Nevada Four Wheel Drive Association, The Reno Wheelmen and the International Mountain Bike Association.

Question RR (5) *What are these participant's attachments to the area, how strong are their feelings, and are alternative opportunities and locations available?*

Generally the participants' attachments to the area are very strong. Most participants consider Peavine mountain part of their backyard. We have heard of many stories about fathers who taught their sons who in turn thought their sons how to shoot or ride a motorcycle or drive a jeep or who shared hikes on the mountain. Many others moved to northwest Reno to fulfill a lifestyle that includes having wild lands nearby. Peavine clean-up days are periodically organized by interest groups or the Forest Service and are well attended.

Hundreds of people attended four public meetings held during the fall of 2001 to comment about management of Peavine, share information about what the mountain means to them, and make recommendations for needed routes. Many of those attending have offered to help with the analysis including conducting road and trail inventories.

Peavine related issues are frequently the topics at Neighborhood Advisory Boards and Citizens Advisory Boards (NAB's and Cab's). Peavine issues regularly make the front page of the local newspapers and are covered by local TV news programs.

Numerous alternate roaded recreation opportunities are located throughout the region. The Dog Valley area located just west of Peavine and managed by the Carson Ranger District has an extensive network of roads and motorized trails. Many of these routes connect to Peavine routes. On the west side of the Sierras, roaded opportunities exist on the Tahoe National Forest. While not as plentiful and often more difficult to access, some roaded opportunities exist southwest of Reno on the Carson Range, managed by the Carson Ranger District

The Bureau of Land Management manages over 600,000 acres in their Reno planning area including the Pyramid-Long Valley area, Pine Nut, and Markleeville area. Much of these lands are roaded and open to the public.

Question SI (8) *How does road management affect wilderness attributes, including natural integrity, natural appearance, opportunity for solitude, and opportunities for primitive recreation?*

There is no congressionally designated wilderness on Peavine Mountain. The closest wilderness, the Mount Rose Wilderness area, is located approximately 10 miles south in the Carson Range. There are no inventoried roadless areas located on National Forest system lands on Peavine Mountain. The pioneering of numerous roads and trails has altered much of the land base on Peavine. The landscape has been altered significantly by frequent wildfire, especially at lower elevations. There are numerous private in holdings, some with structures, including six communication sites on the peak. This implies that there are insufficient attributes or land characteristics desired for a 5,000-acre or greater block of land in the Peavine area to be considered for future inclusion into the National Forest Wilderness system.

There are many smaller blocks of land on Peavine where natural integrity and appearance remain high and the opportunity for solitude still exists (see question UR (1)). These areas are predominately located at higher elevations (above 6,500 feet) on the north and northwest portions of the mountain. Roads and trails are less dense here but they do affect the wild character of the landscape. Some roads and trails pass through meadows and aspen stands which leads to impacts on these rare resources in the form of soil compaction, soil erosion, and loss of native vegetation. Opportunities for solitude or primitive recreation are reduced under these circumstances.

Section 4 – Opportunities and Priorities
(RAP Step #5)

Problems and Risks Posed by the Current Road System

This section summarizes opportunities to address the environmental, economic, and social problems and risks, projected budget concerns, ability to satisfy current and future access needs, and road mileage in excess of access needs. It also summarizes priority management activities that could be managed through changes in the road system.

Descriptive Ranking of Problems and Risks:

* **Risk Degree:**

Low Risk: While the problem described contributes to concerns regarding ecological, social, or economic considerations it does reach the level that requires priority attention.

Moderate Risk: At this level the problem described contributes to concerns regarding ecological, social, or economic considerations to the level that it is should be considered a priority to be addressed when funding opportunities area available.

High Risk: This problem contributes to concerns regarding ecological, social, or economic considerations to the level that it is significant and should be given a high priority for addressing.

Very High Risk: At this degree the problem creates unacceptable risk to ecosystem sustainability and the effects of the problem become a primary focus of road system options.

Heritage Resources

The implications of roads management on public lands are complex from a Heritage Resource standpoint. For maximum protection and preservation of these fragile and non-renewable resources the best management action is often no action. For example, the more road access to an area is improved, the greater the likelihood that archaeological and historic sites will be subjected to vandalism and other impacts. At the same time providing planned and carefully managed access in conjunction with appropriate monitoring and interpretation can enhance public awareness of the Heritage Resources that maybe present. The desired long-term result is the protection of those resources through community involvement and education. In the case of Peavine the proposed recommendations would designate a road network much reduced from the current situation. Presumably the net result would be positive for Heritage Resources.

The Washoe and Northern Paiute communities have historic and cultural ties to Peavine Mountain. Active road and resource management can only be carried out in full cooperation with those communities. The extent and character of Native American traditional use of the mountain must be fully assessed. The identification of traditional use areas may change recommended road networks.

Heritage input to the current analysis can be only general and cursory since the existing database for the Peavine area is extremely limited. Although the mountain is known to be rich in history and archaeological sites, fewer than twenty sites have been formally documented. The implementation of all future road management actions will need to address this lack of information before those actions can be carried out on the ground. Heritage compliance work for project implementation can be costly and disruptive to scheduling, careful planning and adequate funding area needed.

Because of the limited information about archaeological sites the risks posed by specific roads listed in Table 2.1 cannot be assessed without a field inventory. Only six recommended road segments are addressed.

Table 2.1
Recommended Roads

Description of Problems and Risks posed by recommended roads	**Ranking of the Problems *(Risk Degree)**	**Unacceptable Risk to Ecosystem Sustainability (Y/N)**
Road 41419		
Road related Fire This road provides important access to the western aspect of Peavine via Dog Valley. Needs to be kept at a level 2 road.	H	N
Recreation-Primary access route. Dispersed camping sites and associated impacts. Challenge routes spur from this segment. Component of several loop opportunities.	H	N
This road segment parallels a stream and has several stream crossings. Towards Peavine Peak it traverses an aspen grove. There have been impacts from ORV, including soil compaction, erosion and loss of vegetation. There is some dispersed camping in the aspen grove.	M	N
Erosion of fine material, rutting, washboard are common problems with this road segment. Vehicles getting stuck or spinning out are also problems. Narrow road with tight turns and steep grades preclude commercial traffic. Native surface makes travel difficult when wet.	H	N
Road passes through meadow area with prehistoric sites with grinding features. Risks include damage from vehicle traffic and collection of artifacts. Washoe Tribe has concerns.	H	Y
Road 41419G		
Road related Fire This road is not considered a vital fire suppression access route due to slope.	H	N
Recreation- Ridgeline road. Part of loop opportunity. Important to unclassified road U0200 in meadow below. Needs signing.	H	N

This road segment has at least one stream crossing and is near a spring. Part of it is located in a meadow and is also near a grinding rock. The meadow is currently in good condition and it appears that the road is little used.	H	Y
Road 41419H		
Road related Fire This road is not considered a vital fire suppression access route due to slope		
Recreation- Important connector from primary route to challenge routes. Signing needed.	H	N
This road segment has one stream crossing and is fairly steep.	M	N
Road 41419I		
Road related Fire *T*his road provides important access to the western aspect of Peavine via Dog Valley. Needs to be kept at a level 2 road. Road is on private in holding and we need right of way from owner.	H	N
Recreation-Primary access route. Dispersed camping sites and associated impacts.	H	N
Road 41419J		
Road related Fire This road provides important access to the western aspect of Peavine via Dog Valley. Needs to be kept at a level 2 road. Road is on private in holding and we need right of way from owner.	H	N
Erosion of fine material, rutting, washboard are common problems with this road segment. Vehicles getting stuck or spinning out are also problems. Narrow road with tight turns and steep grades preclude commercial traffic. Native surface makes travel difficult when wet.	H	N
Road 41641		
Road related Fire This road is "the" major access and backbone road to Peavine for fire and communication maintenance. Needs to be maintained at a level 3.	H	N
Recreation-Primary access route and only one available for low clearance recreation vehicles. Provides access to top of Mountain. Numerous spur routes stem from this primary route.	H	N
A couple of stream crossings. This road accesses two important communication site on private land and accesses four communications sites on National Forest System land. It also accesses the town site of Poeville. Maintenance has been deferred and users are making the road wider to avoid bumps caused by the loss of fines around rocks in the lower section. Surface is being washed away. None of the commercial users are conducting maintenance.	M	N
A population of *Carduus nutans* (musk thistle) exists between roads 41666C and 41645. Potential for spread along road and to other road segments.	H	N
Road 41641A		
Recreation- leads to an important view area. Potential for non-motorized loops from here.	M	N
This road accesses three commercial communication sites and a Forest Service repeater site.		
Road 41641B		
Road 41642		
Road related Fire This road provides important access to the northeastern aspect of Peavine via Whiter lake summit. Needs to be kept at a level 2 road.		
Recreation-Important connector route from top of mountain. Level 2 and Level 2-High Challenge route loop opportunities from here.	H	N

Erosion of fine material, rutting, and washboard are common problems with this road segment. Vehicles getting stuck or spinning out are also problems. Narrow road with tight turns and steep grades preclude commercial traffic. Native surface makes travel difficult when wet.	H	N
Road 41645		
Road related Fire This road provides important access to the eastern aspect of Peavine via Reno Highlands. Needs to be kept at a level 2 road.	H	N
Recreation-Primary level 2 recreation route. Sidecast road. Part of Moderate challenge loop opportunities.	H	N
Crosses a couple of ephemeral channels	L	N
Road 41648		
Road related Fire This road provides important access to the eastern aspect of Peavine via Hoge Road. Also provides access to upper Kiowa pond. Needs to be kept at a level 2 road.	H	N
Recreation-Primary motorized recreation route from Hoge road around northeast portion of Peavine to Poleville road near the summit. Road mostly sidecast but portions may need heavy maintenance or realignment to meet standards. Part of moderate challenge OHV loop opportunity.	H	N
This road segment has numerous stream crossings (all ephemeral channels) and is parallel to the channel for some of its length.	M	N
Road passes close to sites 3679,3682,3683,3317,3318 and 4033. Bisects site 3679. Potential damage from off road vehicular traffic.	H	N
Road 41648E		
Road related Fire This road provides important access to the western aspect of Peavine via Dog Valley. Needs to be kept at a level 2 road.	H	N
Recreation-Primary motorized recreation route from Hoge road around northeast portion of Peavine to Poleville road near the summit. Road mostly sidecast but portions may need heavy maintenance or realignment to meet standards. Part of moderate challenge OHV loop opportunity.	H	N
Road 41648F		
Road related Fire This road provides important access to the eastern aspect of Peavine via Reno Highlands. Also provides access to lower Kiowa pond. Needs to be kept at a level 2 road.		
Recreation-Primary motorized recreation route from Hoge road around northeast portion of Peavine to Poleville road near the summit. Road mostly sidecast but portions may need heavy maintenance or realignment to meet standards. Part of moderate challenge OHV loop opportunity.	H	N
Multiple noxious weed species exist between roads 41645 and 41648. Potential for spread along this road and to other road segments.	H	N
Road 41648G		
Road related Fire This road provides important access to the eastern aspect of Peavine via Reno Highlands. Also provides access to lower Kiowa pond. Needs to be kept at a level 2 road.		
Recreation-Road circles a small reservoir. Dispersed camping impacts. Trash issues	H	N
A population of *Taeniatherum caput-medusa* (medusahead) exists near small body of water. Potential for spread along road and to other road segments.	H	N
Road 41649		
Road related Fire This road provides important access to the southern aspect of Peavine via Keystone Canyon. Needs to be kept at a level 2 road.	H	N

Recreation-Primary level 2-challenge route leading from major staging areas on s. side of mountain. Part of important challenge loop.	H	N
Road 41649A		
Recreation-Part of primary level 2-challenge route loop on s. side of mountain.	H	N
Road 41649B		
Recreation-Part of primary level 2-challenge route loop on s. side of mountain.	H	N
Road 41649E		
Recreation-Part of primary level 2-challenge route loop on s. side of mountain.	H	N
Road 41651		
Recreation-Part of primary level 2-challenge route loop on s. side of mountain.	H	N
Road 41653		
Recreation-Part of primary level 2-challenge route loop on e. side of mountain.	H	N
Road 41653H		
Recreation-Part of primary level 2-challenge route loop on e. side of mountain.	H	N
Road 41653I		
Recreation-Part of primary level 2-challenge route loop on e. side of mountain.	H	N
Road 41666		
Road related Fire This road provides important access to the eastern aspect of Peavine via Reno Highlands to White Lake summit. Needs to be kept at a level 2 road. Need to establish right of way with owner of Golden Fleece mine.		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	H	N
Crosses 4 stream channels (most likely all ephemeral). This road provides access to water use improvements.		N
Road 41666A		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road 41666B		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road41666C		
Road related Fire This road provides important access to the eastern aspect of Peavine via main Poeville road. Needs to be kept at a level 2 road.		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road 41667		

This road segment has numerous stream crossings and is in a forested area - may go through some aspen groves. The streams on the west side probably flow longer than those on the east or south. May be some problems with ORVs, soil erosion and impacts to vegetation.	H	N
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road passes close to National Register quality rock art site. Washoe Tribe has concerns. Some vandalism already occurring due to defacing rock are panels and removal of rock.	H	
A population of *Ivesia aperta* var. *aperta* (Sierra Valley Ivesia), a Forest Service sensitive species, exists between roads 41667B and 41667D. Impacted by road maintenance, off-road vehicle use, and fire suppression activities. Recommend using U349, U348, and 41667B as alternate routes around population.	M	N
Road 41667A		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road 41667B		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road 4167C		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road 41667D		
Recreation-Part of primary level 2-challenge route loop on nw. side of mountain.	M	N
Road 41668		
Road related Fire This road provides important access to the northern aspect of Peavine via Mitchell Canyon. Needs to be kept at a level 2 road.		
Recreation-Part of primary level 2-challenge route.	M	N
Much of this road segment appears to be in the stream bottom and there are numerous stream crossings.		N
Road 41668A		
Parallels a stream channel for about half its length		N
Recreation-Level 2 challenge route connector.	M	N
Road 41669		
Road related Fire This road provides important access to the southern aspect of Peavine via Mogul. This road is on private and access needs to be established for present and future needs. Needs to be kept at a level 2 road.		
Recreation-Part of primary level 2 moderate challenge route loop on w. side of mountain.	M	N
At the intersection with road 41419J, a population of *Carduss nutans* (musk thistle) exists. Potential for spread along road and to other road segments.	H	N
Road 41670		
Road related Fire This road realistically will not be able to be maintained at a level 2 road due to slope.		
Recreation-Part of primary level 2 moderate challenge route loop on w. side of mountain.	M	N
Road 41670A		

Recreation-Part of primary level 2 high challenge route loop from w. side of mountain.	M	N
Road 41671		
Strategic Level 2 challenge route for jeeps and OHVs leading from King's Row to top of Peavine. Currently signing doesn't indicate difficulty level.	Y	
A short segment of this road appears to be in the channel bottom		N
Road 41671A		
Recreation-Part of primary level 2 high challenge route loop from south side of mountain.	M	N
Road 41671B		
Recreation-Part of primary level 2 high challenge route loop from e side of mountain.	M	N
Road 41671C		
Level 2-challenge rout for jeeps and OHVs. Short segment leading to viewpoint. Erosion control measures needed. Proper signing need for safety.	M	N
Road 41673		
Road related Fire This road provides important access to the eastern aspect of Peavine via Hoge road and Keystone Canyon. . Needs to be kept at a level 2 road.		
Primary n-s recreation route connecting Keystone Canyon to the Hoge road area. Is adjacent to San Rafael County park which in a non-motorized area. Motorized public access no longer exists as a result of private development in Keystone Canyon.	L	N
This road is needed to monitor and maintain utility corridor.		
Road goes through sites 3676 and 3331, and close to sites 3675, and 3677. Potential for damage from off road vehicular traffic. Some damage already occurring.	H	
Road 41674		
Road related Fire This road provides important access to the 41653 road via Keystone Canyon. . Needs to be kept at a level 2 road.	H	N
Recreation-Currently the route from Keystone to Kings row is directly adjacent to housing. From Keystone, the first .5 miles would be re-routed to the north further from neighborhoods. This is a primary motorized route from the south side of the mountain to the Hoge Community area. Segements of the road do not currently meet level 2 maintenance standards and are unsafe.	H	N
Road goes through site 3684. Damage already occurring.	H	Y
Road 41674A		
Road related Fire This road provides important access to the 41653 road via Keystone Canyon. . Needs to be kept at a level 2 road.	H	N
Recreation-Currently the route from Keystone to Kings row is directly adjacent to housing. From Keystone, the first .5 miles would be re-routed to the north further from neighborhoods.		
Road 41674B		
Recreation-Important challenge route from Keystone portal. Also accesses the Reno "R".	H	N
Road 41674C		
Recreation-Provides access to vista.	M	N
Road 41674D		
Road related Fire This road provides important access from Kings Row to the 41674 road. Needs to be kept at a level 2 road.		

Road 41692		
Road related Fire This road provides important access from Kings Row to the 41674 road. Needs to be kept at a level 3 road.		
Recreation-Important motorized access through Keystone community leading to staging area.		
Road 41693		
Road related Fire This road provides important access from Raleigh Heights to the 41648 road. Needs to be kept at a level 2 road.		
Recreation-Primary motorized recreation route from Raleigh Heights around northeast portion of Peavine. Road mostly sidecast but portions may need heavy maintenance or realignment to meet standards. Part of moderate challenge OHV loop opportunity.	H	N
Road 41693A		
Recreation-Level 2 recreation route. Part of High challenge loop opportunities.	M	N
Road 41693B		
This road and 41694 junction within the boundaries of site 3680. Site is subject to on going damage from off road traffic.	H	N
Recreation-Level 2 recreation route. Part of High challenge loop opportunities.	M	N
Road 41694		
Road related Fire This road provides important access from Hoge road and needs to be extended to the 41693 road. Needs to be kept at a level 2 road.		
This is a Utility access road in the Hoge Road neighborhood.		
Road 41695		
Road related Fire This road realistically will not be able to be maintained at a level 2 road due to slope and drainages.		
A portion of this road is a utility access road.		
Road 41697		
Recreation-Level 2 recreation route. Part of High challenge loop opportunities.	M	N
Road 41698		
Recreation-Level 2 recreation route. Part of High challenge loop opportunities	M	N
Road 41698		
Recreation-Level 2 recreation route. Part of High challenge loop opportunities	M	N

Opportunities for Addressing Important Problems and Risks

Heritage and Natural Resource Opportunities

The focus on a recommended road system provides an opportunity to increase our knowledge of the historic and prehistoric values present on Peavine Mountain and to manage those values in an active manner. Compliance work and required mitigation for road maintenance projects provide opportunities for site stabilization, protection, monitoring programs and public interpretation. Public involvement, partnerships and

planning efforts should provide new ideas and opportunities for the enhancement of Heritage Resources.

Peavine Mountain has a multitude of plants and animals', however, as the Truckee Meadows grows, so does the use on this mountain. Limiting the number of roads on the mountain is an important step in protecting the flora and fauna that currently exists there, especially as developments encroach up the mountains slopes. Sensitive plants will be less likely to be disturbed with fewer roads. Less human disturbance to mule deer will allow them to over winter in critical habitat with less stress, especially on the lower slopes. The riparian corridors have the highest density of flora and fauna, so fewer roads through these areas or across them will help preserve riparian species that depend on them or use them. Vehicles are one of the primary sources of spreading invasive plants and roads provide a suitable habitat for invasive plants to become established. Fewer roads will also help reduce the rate and amount of spread of invasive plants on Peavine.

The opportunity exists to eliminate roads not identified as necessary. Roads adjacent to and within sensitive plant populations, invasive plant populations, and other sensitive habitats could be eliminated first in order to protect these areas from further disturbance. However, a site-specific analysis would be required prior to any action to eliminate a road.

Table 3.1
Recommended Roads

Opportunities and Priorities

Description of the Opportunity	*Priority for Addressing (H, M, L)*
Road 41419	
Improve road drainage through aspen grove and prevent off road travel except in designated locations. Look at stream crossings for needed improvements or armoring.	H
Improving alignment of road, drainage, and grade in locations will allow access from west, off of 010 (Mitchell Canyon Road) for tractor trailers I.e. low boy and logging truck and other vehicles such as dump trucks that might be used for hauling materials or product removal. Surfacing would increase season of use by 2-3 months. This road would be the primary access from I-80 to the west side of the mountain. Improved access reduces costs associated with inventory, cultural treatment and harvesting.	H
Reroute of existing road and closure of others would help protect cultural sites in meadow. .	H
Road 41419G	
Utilize as motorized loop opportunity. Avoid U0200 in meadow below. Sign both ends of road.	H
Road 41419H	
Road 41419I	
Need right of way to make accessible for fire use	H
Recreation- Establish, sign and maintain as challenge route connector.	H

This road is an important connector between the 419 road (access to 010 and I-80) and the 192 road (access to 002 and U.S. Highway 395 north)	H
Road 41419J	
Examine stream crossings for improvement or armoring	L
This road would be the primary commercial haul route for materials or wood products off the mountain north and west to the 002 road and U.S. Highway 395 north. Some realignment of the road would be necessary along with grade control and surfacing to extend the season of use.	H
Road 41641	
Examine stream crossings for improvement or armoring. Work with Washoe County to add this to the Road Maintenance Agreement. Require commercial users to pay or perform commensurate road maintenance since they use the road throughout all kinds of weather conditions. Surface drainage and blading and shaping is needed. Dust abatement will help prevent continued loss of the surface fines through wind, rainfall and/or snowmelt erosion.	L
A population of *Carduus nutans* (musk thistle) exists between roads 41666C and 41645. Potential for spread along road and to other road segments.	H
Road 41641A	
Recreation- leads to an important view area. Potential for non-motorized loops from here. Signing needed.	M
Require communication users to pay or perform commensurate road maintenance.	H
Road 41641B	
Road 41642	
Recreation-Maintain to Level 2 for moderate challenge OHV opportunities. Signing needed.	H
This road would provide access for light vehicles and administrative use to the NW corner of the mountain but it would not be satisfactory for commercial vehicles I.e. logging trucks and low boys to haul going north to Highway 395. Commercial haul from the top of the mountain to the 419 road and downhill tot he west would be the route of haul.	M
Road 41645	
Recreation-Maintain to Level 2 for moderate challenge OHV opportunities. Signing needed.	H
Examine stream crossings for improvement or armoring	L
Road 41648	
Primary motorized recreation route. Heavy maintenance or realignment may be need in places.	H
Examine stream crossings and section of road in stream bottom for improvements or armoring.	M
Opportunity to evaluate and mitigate cultural sites as needed.	H
Road 41648E	
Recreation-Maintain to Level 2 for moderate challenge OHV opportunities. Signing needed.	H
Road 41648F	
Recreation-Maintain to Level 2 for moderate challenge OHV opportunities. Signing needed.	H

Multiple noxious weed species exist between roads 41645 and 41648. Potential for spread along this road and to other road segments.	H
Road 41648G	
Recreation-Review for dispersed camping impacts. Focus on trash clean-up.	H
A population of *Taeniatherum caput-medusa* (medusahead) exists near small body of water. Potential for spread along road and to other road segments	H
Road 41649	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H
Road 41649A	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H
Road 41649B	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed	M
Road 41649E	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H
Road 41651	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H
Road 41653	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H
Road 41653H	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H
Road 41643I	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H
Road 41666	
Need right of way to make accessible for fire use	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41666A	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41666B	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41666C	

Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Monitor road maintenance needs. Protect water improvements.	L
Road 41666D	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41667	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Examine stream crossings and road segment in channel bottom for needed improvements and armoring.	M
A population of *Ivesia aperta* var. *aperta* (Sierra Valley Ivesia), a Forest Service sensitive species, exists between roads 41667B and 41667D. Impacted by road maintenance, off-road vehicle use, and fire suppression activities. Recommend using U349, U348, and 41667B as alternate routes around population.	H
Road 41667A	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41667B	
Opportunity to mitigate cultural impacts through interpretation and partnership with Washoe Tribe and others.	H
Road 41667C	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41667D	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41668	H
Examine stream crossings for needed improvements or armoring. Look at road segment in stream bottome for drainage improvements.	
Road 41668A	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	M
Road 41669	
Need right of way to make accessible for fire use	H
Recreation-Maintain to Level 2 for moderate challenge OHV opportunities. Signing needed.	H
At the intersection with road 41419J, a population of *Carduus nutans* (musk thistle) exists. Potential for spread along road and to other road segments.	H
Road 41670	
Recreation-Maintain to Level 2 for moderate challenge OHV opportunities. Signing needed.	H
Road 41670A	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed.	H

Road 41671	
Maintain Level 2 challenge route for jeeps and OHVs. Proper signing needed for safety.	H
Look at stream crossings for needed improvements or armoring.	L
Road 41671A	
Maintain Level 2 challenge route for jeeps and OHVs. Proper signing needed for safety.	H
Road 41671B	
Maintain Level 2 challenge route for jeeps and OHVs. Proper signing needed for safety.	H
Road 41671C	
Maintain Level 2 challenge road for jeeps and OHVs to vista point. Proper signing needed for safety.	L
Road 41673	
Need right of way to make accessible for fire use	H
Opportunity to convert to non-motorized recreation access for foot traffic and mountain bikes. Could be part of a non-motorized loop system. Opportunity to coordinate management with County as the road is adjacent to San Rafael County Park.	H
Reduce to maintenance level 1-gated for administrated use (permittees included) only**.** Monitor for maintenance needs. Require utility permitees to perform commensurate maintenance as needed.	
Opportunity to evaluate and mitigate cultural sites as needed.	H
Road 41674	
Recreation-Opportunity to become a primary motorized recreation route and provide for displaced motorized recreation if Keystone Canyon becomes non-motorized. High priority to reroute first .5 mile from Keystone to minimized noise impacts from OHV activities on nearby neighborhoods. Potions of this primary route may need to be relocated or reconstructed to meet level two maintenance standards.	H
Allow the AM Radio Broadcast permittees to manage the roads for their use at a level for their needs and not to invite public use to their facilities.	H
Road 41674A	
Recreation-Utilize for administrative motorized traffic only if 41674 is rerouted. This segment could then convert to non-motorized traffic only.	H
Road 41674B	
Recreation-Primary Level 2 high challenge route for jeeps and OHVs leading from Keystone. Proper signing needed for safety.	H
Road 41674C	
Recreation-Access to vista. Signing needed.	L
Road 41674D	
Road 41692	
Need right of way to make accessible for fire use	H
Recreation- Important motorized through Keystone community leading to staging area.	H
Road 41693	
Recreation- Maintain as primary moderate challenge level 2 route	

Road 41693A	
Recreation- Level 2 challenge route-connector. Signing needed	M
Road 41693B	
Recreation- Level 2 challenge route-loop. Raleigh Heights area. Signing needed	M
Road 41694	
Consider requiring the utility permitee to discourage public use of their access road.	M
Road 41695	
Consider requiring the utility permitee to discourage public use of their access road.	M
Road 41697	
Recreation- Level 2-challenge route-connector. Reno Highlands area. Signing needed	M
Road 41698	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed	M
Road 41699	
Recreation-Maintain to Level 2 for high challenge OHV opportunities. Signing needed	M

Current and Projected Road Construction and Maintenance Budgets

The Forest Transportation System Policy directs responsible officials, managing National Forest System (NFS) roads, to determine and provide for the minimum forest transportation system that best serves current and anticipated management objectives and public uses of NFS lands. These responsible officials are directed to balance transportation facility investments and maintenance costs against the need to maintain land health and water quality.

The Policy also gives direction for maintaining and reconstructing needed roads. Priority is given to upgrading the most heavily used roads to provide safe and efficient travel and to minimize adverse environmental impacts. The Humboldt-Toiyabe NF also gives high priority for maintaining less heavily used roads, that may pose a greater risk for road related environmental degradation than some of the more heavily used roads. Responsible officials are also to give priority to decommissioning unneeded roads, or, where appropriate, converting them to less costly and more environmentally beneficial other uses.

National Forest System roads in the Peavine analysis area are some of the most heavily used roads in the urban interface of forested lands in the Truckee Meadows. This road use is comparable to some of the most active dispersed use areas on the Humboldt Toiyabe-National Forest. The allocation of maintenance funding for the Peavine road network considers the heavy use patterns, season of use and the stability of the native soils in the area.

Historically, funding available for maintenance of the road network on the Humboldt-Toiyabe has been insufficient to repair seasonal erosion impacts and the degradation of the roadways from vehicle use. Maintenance activities such as ditch cleaning, surface blading, brushing & limbing, culvert replacement, pavement repair and roadway stabilization are some examples of work that has been deferred forest wide.

Road reconstruction and maintenance budget projections for the coming years are anticipated to remain flat, after some adjustment for inflation. If implementation of the Public Forest Service Road (PFSR) program occurs, at the funding levels currently being considered, significant supplemental funding would be available for qualified forest road reconstruction candidates. Funds for the PFSR program originate from the Federal Lands Highway Program administered by the Federal Highway Administration. Roads funded through this program also become eligible for maintenance funding from the Federal Lands Highway Program. A related benefit of this *potential* supplemental funding would be the ability of the forest to use the annual forest road maintenance budget to provide maintenance effort on network roads that ordinarily do not receive attention due to insufficient funds.

Section 5- Key Findings
(Rap Step #6)

The public, especially local residents, have very strong feelings concerning road management on Peavine Mountain.

- Public opinion indicates a desire for a wide variety of road and trail related opportunities. For many the mountain has become Reno's backyard playground.

- Public opinion indicates a desire for establishing and protecting access to the mountain, especially as development around the mountain continues.

- Well-designed roads and trails that meet visitor needs are lacking.

    - The existing roads and trails are mostly user created and in many cases are redundant. The average road density on National Forest System Land on Peavine is nearly six miles of road per square mile. Users are continuing to create unauthorized roads and trails in an ongoing effort to meet their own needs. An opportunity exists to develop, sign and maintain a new road system comprised of existing roads and some new roads that better meets people's needs.

Many primary access routes are in need of spot re-alignment and/or reconstruction to meet road use objectives.

- Many roads were pioneered along ridgelines or drainage bottoms. Most are overly steep and without adequate drainage features. Typically the fine material that used to make up the road base has been eroded away leaving a rocky bedrock material that is difficult to maintain and difficult to navigate. While some of these road segments can be managed as challenge routes for OHV's, they can also be dangerous.

Better signing and improved trail guides are needed to help people find their way around Peavine.

- There are 322 miles of inventoried roads on Peavine (163 miles are on National Forest System Lands) yet only 95miles are classified (60 miles of which are on National Forest System Lands). The current signing on the system roads is inadequate. The unclassified roads aren't signed and maps and trail guides available quickly become dated. It's easy to lose one's way on Peavine.

There are resource concerns with some roads and trails on Peavine.

- A variety of noxious weeds exist on Peavine Mountain. Given the high density of existing roads and the possibility of continued proliferation of new unauthorized roads, there is an increased susceptibility to invasion by noxious weeds.

- The high density of the road network and the location of some roads are affecting the quality and quantity of wildlife habitat and sensitive plant populations. Wildlife habitat is being fragmented as unauthorized roads proliferate (e.g. Mule deer winter range). Sensitive plants and their habitat are being impacted by unauthorized roads.

- Some historic and prehistoric artifacts are vulnerable due to the ease of access on Peavine. Petraglyphs, grinding stones and other features have been damaged and in a few cases stolen for example.

- Road surfaces and roadside features (such as ditches, culvert basins, cutbanks, and unvegetated surfaces) can generate erosion and contribute to degradation of water resources. Preventative maintenance measures such as stabilization and vegetation of roadside features can significantly reduce this concern.

As roads age and their use increases, travel surfaces, roadside features, and drainage structures deteriorate, requiring increased maintenance.

- Road maintenance funding is not adequate to fully maintain all inventoried roads on the Humboldt–Toiyabe National Forest. Available funding is targeted for the most heavily used roads on the forest. Future road maintenance plans and associated requests for funding should display the heavy use of roads on Peavine.

Road Management Objectives

Road Management Objectives (RMO's) identify in detail the intended purpose and future use of system roads. They include a description of the general design criteria and elements such as design vehicle (i.e. passenger sedan) service life, traffic service level, surfacing type and lanes. The objectives also state the maintenance criteria for each road, including the current maintenance level and objective maintenance level. A travel management narrative is also part of a RMO.

RMO's have been developed or are being developed for existing forest system roads on Peavine and will be available at eh Forest Supervisor's Office.

Peavine Mountain Roads Analysis Interdisciplinary Team

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Appendix B – Glossary of Terms

Roads Analysis: The analytical tool that has been developed to provide information for future management decisions with the objective of providing road systems that are safe to the public and responsive to public needs, environmentally sound, affordable, and efficiently managed. Roads Analyses that are planning functions have been called "transportation planning" (reference FSH 7700), "travel management", or "access travel management planning".

Road: A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified, or temporary.

Classified Road: Roads wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long term motor vehicle access, including state roads, county roads, privately owned roads, National Forest System roads, and other roads authorized by the Forest Service.

Public Road: Any road or street under the jurisdiction of and maintained by a public authority and open to public travel (23 U.S.C. 101 (a)).

Private Road: A road under private ownership authorized by an easement to a private property, or a road that provides access pursuant to a reserved or private right.

National Forest System Road: A classified forest road under the jurisdiction of the Forest Service. The term "National Forest System roads" is synonymous with the term "forest development road" as used in 23 U.S.C. 205.

Unclassified Road: Roads on National Forest System lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon the termination to the authorization (36 CFR 212.1.

Forest Roads: As defined in Title 23 Section 101 of the United States Code (23 U.S.C. 101), any road wholly or partly within, or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

Maintained for Public Use: Forest System Roads open to unrestricted use by the general public in standard cars, including those roads closed seasonally or for emergencies.

Maintenance Level 5: Roads that provide a high degree of user comfort and convenience. Normally double lane, paved facilities, or aggregate surface with dust abatement; the highest standard for maintenance.

Maintenance Level 4: Roads that provide moderate user comfort and convenience at moderate speeds. Most are double lane, and aggregate surfaced. Some may be single lane. Some may be dust abated.

Maintenance Level 3: Roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Typically low speed, single lane with turnouts and native or aggregate surfacing.

Maintenance Level 2: Roads open for use by high-clearance vehicles. Passenger car traffic is discouraged. Traffic is minor administrative, permitted, or dispersed recreation. Non-traffic-generated maintenance is minimal.

Maintenance Level 1: These roads are closed. Some intermittent use may be authorized. When closed, they must have barricades, berms, gates, or other closure devices. Closures must exceed one year. When open, a road may be maintained at any other level. When closed to vehicular traffic, they may be suitable and used for non-motorized uses, with custodial maintenance.

Traffic Service Levels: Describes the significant characteristics and operating conditions of a road; (FSH 7709.56, ch.4).

Traffic Service Levels

	A	B	C	D
Flow	Free flowing with adequate parking facilities.	Congested during heavy traffic such as during peak logging or recreation activities.	Interrupted by limited passing facilities, or slowed by the road condition.	Flow is slow or may be blocked by an activity. Two way traffic is difficult and may require backing to pass.
Volumes	Uncontrolled; will accommodate the expected traffic volumes.	Occasionally controlled during heavy use periods.	Erratic; frequently controlled as the capacity is reached.	Intermittent and usually controlled. Volume is limited to that associated with the single purpose.
Vehicle Types	Mixed; includes the critical vehicle and all vehicles normally found on public roads.	Mixed; includes the critical vehicle and all vehicles normally found on public roads.	Controlled mix; accommodates all vehicle types including the critical vehicle. Some use may be controlled to vehicle types.	Single use; not designed for mixed traffic. Some vehicles may not be able to negotiate. Concurrent use traffic is restricted.
Critical Vehicle	Clearances are adequate to allow free travel. Overload permits are required.	Traffic controls needed where clearances are marginal. Overload permits are required	Special provisions may be needed. Some vehicles will have difficulty negotiating some segments.	Some vehicles may not be able to negotiate. Loads may have to be off-loaded and walked in.
Safety	Safety features are a part of the design.	High priority in design. Some protection is accomplished by traffic management.	Most protection is provided by management.	The need for protection is minimized by low speeds and strict traffic controls.
Traffic Management	Normally limited to regulatory, warning, and guide signs and	Employed to reduce traffic volume and conflicts.	Traffic controls are frequently needed during periods of high	Used to discourage or prohibit traffic other than that associated

	permits		use by the dominant resource activity.	with the single purpose.
User Costs	Minimize; transportation efficiency is important.	Generally higher than "A" because of slower speeds and increased delays.	Not important; efficiency of travel may be traded for lower construction costs.	Not considered.
Alignment	Design speeds is the predominant factor within feasible topographic limitations.	Influenced more strongly by topography than by speed and efficiency.	Generally dictated by topographic features and environmental factors. Design speeds are generally low.	Dictated by topography, environmental factors, and the design and critical vehicle limitations. Speed is not important.
Road Surface	Stable and smooth with little or no dust, considering the normal season of use.	Stable for the predominant traffic for the normal use season. Periodic dust control for heavy use or environmental reasons. Smoothness is commensurate with the design speed.	May not be stable under all traffic or weather conditions during the normal use season. Surface rutting, roughness, and dust may be present, but controlled for environmental or investment protection.	Rough and irregular. Travel with low clearance vehicles is difficult. Stable during dry conditions. Rutting and dusting controlled only for soil and water protection.

Appendix C- References

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www.naco.org National Association of Counties

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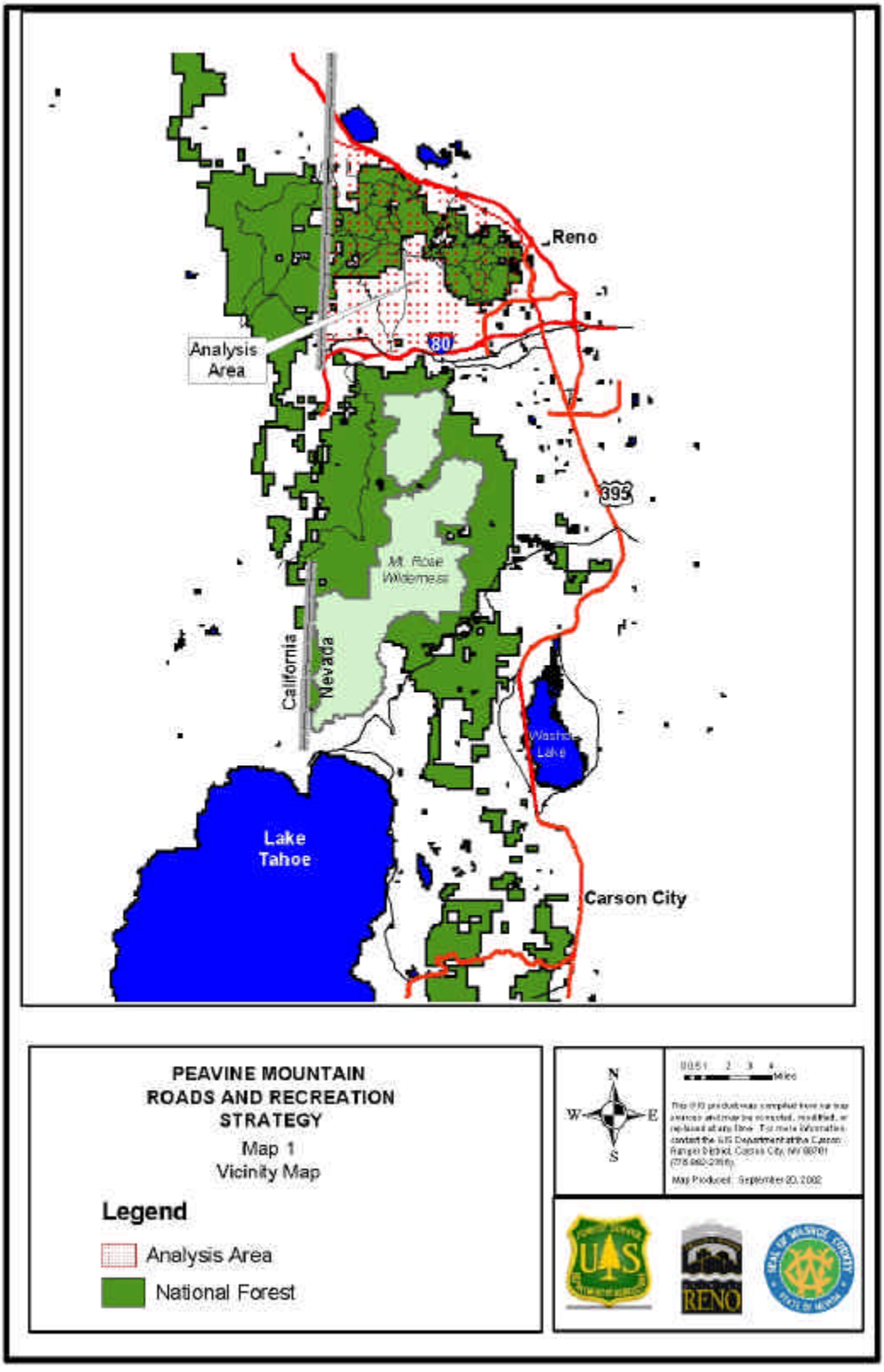
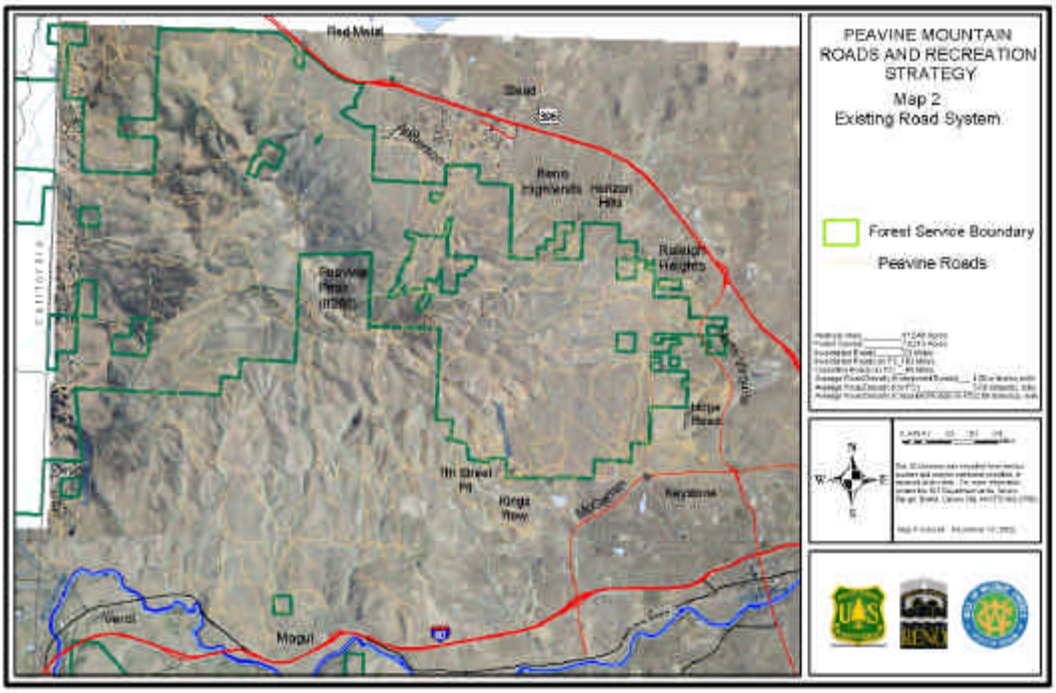
Appendix E: Maps

Map 1, Vicinity Map



Map 2, Existing Roads



Map 3, Recommended Roads