CHAPTER FOUR
ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

Chapter 4 presents the environmental impacts of each of the four alternatives described in Chapter 2. These include the following:

?? Alternative A: Proposed Action
?? Alternative B: Enhanced Ecosystem Protection
?? Alternative C: Enhanced Recreation Opportunities
?? Alternative D: No Action

4.2 ALTERNATIVE A: PROPOSED ACTION

4.2.1 Air Quality, Soils and Water

4.2.1.1 Air Quality

Introduction: Impacts would be in the form of gaseous and particulate mater that is emitted into the air as a result of the activities being analyzed. All of the pollutants subject to analysis are addressed in federal, state and local laws, statutes, regulations and rules. The federal and state ambient air quality standards define the criteria pollutants that are part of the emissions that are typically analyzed. In addition to the criteria pollutants, there are criteria for air toxics, hazardous air pollutants (HAPs), Prevention of Significant Deterioration (PSD), fugitive dust and regional haze.

The analysis is based upon various activities' potential to emit. In the case of the Designation Project, there are only a few pollutants that have the potential to be emitted. The analysis is further limited by the need to look at changes in emissions that would occur as a result of various alternative actions. Most activities that produce emissions would not be impacted by the Project alternatives and would not be addressed in this analysis. The activities associated with the Designation Project that would have an impact on air quality include OHV activities, vehicle routes and designations, and restoration. Changes in these activities would result in changes in disturbance rates to soil surfaces and would result in changes in PM_{10} and $PM_{2.5}$ emissions. Activities associated with growth and development may emit particulates such as PM_{10} and $PM_{2.5}$ and ozone precursors including nitrous oxides and reactive organic gases. Based upon the potential to emit and emissions that are likely to be affected by the Project, the analysis would primarily address the particulate emissions PM_{10} and secondarily the ozone precursor emissions. In addition, these two pollutants are important because large portions of the project area are classified as federal nonattainment areas for PM_{10} and/or ozone.

Planning Assumptions for Air Quality: State Implementation Plans (SIPs) are prepared for the federal nonattainment areas. These SIPs are designed to result in compliance with the NAAQS by federal deadlines. The SIPs are implemented through a series of rules. In addition, air quality is highly regulated by a number of additional federal, state and regional regulations and rules. These regulations and rules apply to many of the activities that appear in the Project alternatives. It is assumed that the activities would be conducted in compliance with the regulations and rules.

Expected Impact of Alternative A on Air Quality: This alternative would result in reductions in emissions of particulate matter from BLM managed lands, and corresponding declines in PM_{10} concentrations in a number of areas. This would be due to restrictions, reductions or elimination of activities and disturbed areas that have the potential to emit pollutants. Some activities would have the potential to increase emissions. These activities along with their pollutants, relative changes in emissions, time scales and locations are expected to be as described by Table 4-1.

Table 4-1
Air Quality Impacts – Alternative A

ACTIVITY	POLLUTANT(S)	CHANGE DIRECTION	MAGNITUDE	TIME SCALE	LOCATION(S)	NOTES
Paved roads	PM_{10}	Increase	Slight	Short & long term	Within tortoise critical habitat	Could eliminate paving as dust control measure on unsurfaced roads
OHV route designation	PM_{10}	Decrease	Moderate[3]	Short & long term	Most would be within Mojave Desert Nonattainment Area	Wind erosion would cease as route stabilizes in 1-2 years

Notes: 1. MDAQMD inventory of sources showed nearly 8% of PM_{10} emissions from construction and bare ground in 1990.
2. Livestock grazing accounted for .4% of MDAQMD PM_{10} inventory (1990).
3. Wind erosion from unpaved roads accounted for 20% of PM10 emissions in MDAQMD inventory (1990).

Cumulative Impacts on Air Quality: There could be a slight increase in particulate emissions from private lands, and reductions in emissions of particulate matter from public lands. This would result in corresponding declines in PM_{10} concentrations in a number of areas. On an overall basis, there would be a significant reduction in particulate emissions. A goal of Alternative A is to streamline procedures for development on private lands. This could result in an increased development rate in the short term. In the long term, other factors would control development and expected emissions from development would be nearly the same with or without Alternative A. Long term projected growth and emission increases would occur in and around current core population centers such as the Antelope Valley, the Victor Valley area and Barstow. Reductions would occur on BLM lands away from population centers.

Significance: There would be a significant reduction in PM_{10} emissions as a result of Alternative A. These reductions could exceed 1000 tons of PM_{10} per year.

Federal Conformity: A federal conformity analysis is required for any federal action within any federal nonattainment or maintenance area. There are seven areas within the western Mojave Desert that meet these criteria. These are the Owens Valley, Coso Junction, Indian Wells Valley, Trona and Mojave Desert PM_{10} planning areas and the Eastern Kern County and Mojave Desert modified ozone-planning areas. The clean air act and its implementing rules (40 CFR part 93) state that federal agencies must make a determination that proposed actions in federal nonattainment/ maintenance areas conform to the applicable implementation plan before the action is taken. In addition, the action cannot cause or contribute to any new violation of the National Ambient Air Quality Standards, cannot increase the frequency or severity of any existing violation of any NAAQS or delay timely attainment of any standard or any required interim emission reduction or other milestones.

The BLM has developed a ten-step process to comply with the federal conformity requirements. These ten steps are: (1) Determine spatial and jurisdiction applicability, (2) Describe SIP status and content, (3) Develop any necessary background information, (4) Develop air quality impact analysis, (5) Compare activity to applicable SIP provisions and rules, (6) Develop conclusion statement, (7) Prepare a formal determination, (8) Conduct an agency/public review, (9) Submit the determination to appropriate regulatory agencies and (10) Archive the results. Steps 7-10 must be completed only if the project has total emissions of criteria pollutants exceeding deminimus levels established in the regulations (40 CFR 93.153 (b)(1&2)). Most of these steps are carried out in this EIR/S.

Conformity Analysis and Conclusion: Alternative A results in significant reductions of PM_{10} emissions. All of the SIP requirements for the five federal PM_{10} nonattainment/maintenance areas are met by the alternative for PM_{10}. Ozone precursor emissions could increase slightly in the short term under this alternative. Because the precursor emission levels are lower than the budget established the in the regional plans, Alternative A conforms to the SIP. All emission levels are below de minimus levels, so no further conformity analysis is necessary and a formal conformity determination is not required.

4.2.1.2 Soils

Off Highway Vehicle Impacts: OHVs impact soils properties in several ways. OHVs increase soil compaction, which in turn effects infiltration and water erosion, soil moisture, wind erosion, and soil chemistry.

Most desert soils, including many sands, are susceptible to intense compaction if driven across a sufficient number of times. Places heavily used by OHVs such as pit areas, trails, and hillclimbs generally are intensely compacted. Compaction produced in most soils depends on vehicle characteristics, amount of activity, and soil water at the time of impact that on differences

between soil properties. For example, increased OHV activity on wet soils would increase compaction. Some cohesion-less sands such as sand dunes, however, are very resistant to compaction whether wet or dry. Many playa soils would have considerable resistance to compaction if driven on when dry. (BLM, 1980)

Intense OHV use in steep areas (primarily hillclimbs on slopes over 20 percent) yields large increases in water erosion as well as mechanical displacement of soil. Where highly compacted trails run for long distances down gentle slopes, erosion may occur on relatively level terrain with slopes as low as three percent (BLM, 1980).

Most desert soils are much more susceptible to wind erosion after disturbance than in an undisturbed condition (BLM, 1980). Wind erosion occurs whenever bare, loose, dry soil is exposed to wind of sufficient speed to cause soil movement. This process would be accelerated whenever the natural equilibrium of the soil is disturbed. During a dust storm, the bulk of eroding material from soils moves only a foot or two above the soil surface where it is subject to downwind transport. Two basic processes are involved in wind erosion: detachment and transport. Detachment is the initiation of soil movement and occurs when wind force or the impact of moving particles is strong enough to dislodge stationary soil particles. After detachment, soil particles are subject to transport by wind through the air or along the soil surface until eventually deposited when wind velocity decreases (NRCS, 29palms)

Erodibility varies considerable within and among soils as a result of variations in texture, organic matter content and aggregate structure. In general, erodibility increases with increasing sand content and decreases with clay content. (NRCS, 29 Palms.) In addition, biological crusts, microorganisms (lichens, algae, cyanobacteria, microfungi) and non-vascular plants (mosses, lichens) that grow on or just below the soil surface. Soil physical and chemical characteristics, along with seasonal precipitation patterns, largely determined the dominant organisms comprising the crust. These crusts are primarily important as cover and in stabilization soil surfaces. In rangelands, biological soil crusts function as living mulch my retaining soil moisture and discouraging annual weed growth. They also reduce wind and water erosion, fix atmospheric nitrogen, and contribute to soil organic matter (Eldridge and Greene, 1994 in USDI, 2001).

4.2.1.3 Water Quality

The primary surface water quality parameter of concern in the Project area is sediment. There is naturally high levels of sediment in the ephemeral surface water that flows in response to storm events because of ongoing geologic processes.

When the soil is disturbed by anthropogenic activities it is more susceptible to erosion. Erosion increases the sediment available in channels for transport by surface water when it occurs.

Particle size, slope, vegetative cover and distance from the waterway determine the length of time the eroded particles take to enter the waterway for transport either in the water column (suspended sediment) or along the streambed (bedload). Small particles will be transported

more easily, steeper slopes and reduced vegetative cover increase the velocity of the water increasing the waters capacity to transport more and larger particles, particles in or close to a waterway will be transported first. The alluvial fans complicate these general rules because of the tendency for channels to migrate across the fan.

The suspended sediment water quality objective of the Lahontan Regional Water Quality Board is "the suspended sediment load and suspended sediment discharge rate to surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses."

Eroded sediment and other earthen materials that reach surface waters as a result of human activities are considered waste discharges under the Porter-Cologne Water Quality Control Act.

In the Mojave Desert it is difficult to quantify an increase in human caused sediment that reaches surface waters because sediment transport is part of the natural processes. Storm events that produce sufficient water to transport the sediment are infrequent and episodic so sampling the water cannot be scheduled and is inherently difficult. Equipment can be designed to take samples, but is subject to vandalism and being washed out if the flow is large.

It is easier to measure either the sediment or observe the effects of the sediment. Sediment can reduce the hydraulic capacity of stream channels, causing an increase in flood crests and flood damage. It can fill drainage channels, especially along roads, plug culverts and storm drainage systems, and increase the frequency and cost of maintenance.

Even when measuring the sediment by using sediment basins it is a challenging exercise to determine how much is anthropogenic.

A semi-quantitative determination of human caused sediment can be made by using a model to compare alternatives with each other or with existing conditions by determining directly related factors such as vegetative cover, amount of disturbed soil and soil characteristics directly related to erosion potential. Then use one of the standard soil erosion models. Because we have limited soils information in the study area this is not possible at the present time.

For this analysis water quality (suspended sediment) impacts are assumed to be proportionate to the soil erosion impacts although they may disjunct in time and place.

4.2.2 Biological Resources

4.2.2.1 Natural Communities

The proposed action affects the desert's natural communities in different ways. Most of the recreation areas for off road vehicles are within the creosote bush scrub, desert wash and saltbush scrub communities, though riding on playas is also popular and may impact the adjacent alkali sink scrub vegetation. In mountainous areas, most travel is confined to roads, so that the woodland communities (Joshua tree woodland, scrub oak, pinyon pine woodland, juniper woodland) are not subject to direct vehicle impacts. In mountainous areas with a large number of routes, habitat fragmentation is an issue, depending to some extent on the frequency of use.

In all areas of public lands containing the rarer and more valuable (to wildlife) riparian communities, BLM has already designated routes, primarily through the ACEC Plan process. These roads, as in the canyons of the east Sierras, Jawbone-Butterbredt ACEC, Big Morongo Canyon ACEC, Whitewater Canyon ACEC and Afton Canyon are designated to avoid major impacts to riparian dependent wildlife, such as migratory birds. Isolated springs and seeps, however, are accessible and not entirely free of route proliferation, cleared camping areas and excessive disturbance. In some cases, such as the springs in the Argus Mountains and Great Falls Basin ACEC, BLM has initiated improvements such as barriers and designated parking areas that protect the wetland communities from vehicle damage.

Additional work to define site-specific solutions for access to springs may be needed to protect important sites. The El Paso Mountains and Ridgecrest subarea will provide this analysis through the Collaborative Access Planning Area process. In other areas, such as the Juniper subregion, monitoring of the vehicle disturbance at springs (if any) is the best way to determine if adverse impacts from the route designation are taking place.

Kane Springs in the Ord-Rodman subregion is an important spring that clearly benefits from the designation of Alternative A, compared with the No Action Alternative (Alternative D). The same is true for Kane Wash, which contains a desert willow community, because the designated routes utilize the parallel utility route out of the streambed.

In the Bighorn subregion, adoption of the 1985-1987 routes presents no change from the No Action Alternative. Routes near Vaughn Spring, Mound Spring and Viscera Spring (on adjacent Forest Service lands) will need continued monitoring to determine if the relatively dense network in this location is detrimental to the riparian communities at these springs. The Forest Service review of these routes, which cross jurisdictional boundaries, could result in a more cohesive network for the area.

4.2.2.2 Desert Tortoise

Alternative A does not directly address the threat of either short- or long-term drought. However, some prescriptions would enhance tortoise conservation during drought periods. Prescriptions that would result in beneficial and adverse impacts are summarized in Table 4-2

Table 4-2

Beneficial and Adverse Impacts of Measures to Counteract Drought

BENEFICIAL IMPACTS	ADVERSE IMPACTS
Motorized Vehicle Access ? The single most effective measure to alleviate human impacts during time of drought is to minimize vehicle use within washes, which would be accomplished by closing 117 of 177 linear miles (66%) of routes identified as occurring within washes in the Desert Wildlife Management Areas (DWMA) being recommended by the West Mojave Plan, which generally correspond to tortoise critical habitat. There are certainly more than 177 linear miles of washes in DWMAs, however, since route use would be restricted to only those routes that are designated as open, washes that are not included would not be available for vehicle use, which would be a very significant beneficial impact. ? Route reductions in higher density tortoise areas in DWMAs would serve to alleviate human-induced stresses during drought periods	Motorized Vehicle Access ? Alternative would fail to close 60 linear miles (34%) of roads in DWMAs that coincide with washes ? Alternative fails to identify specific measures that would be implemented in higher density tortoise areas, which are most likely to benefit from additional protection than would be implemented during periods of prolonged drought.

The alternative to allow vehicle use in only those washes designated as open is a significant beneficial impact, as it replaces a policy that allows vehicle use wherever there is evidence of prior use. In the Ord Mountain Pilot Study, about 25% of the potential routes were actually washes, with and without vehicle tracks (LaRue 1997). The current route network identifies 177 linear miles of wash routes, 117 miles of which (66%) have been identified for closure. It is very likely that the digitized routes within washes underestimate the actual number of washes that are being used for vehicle travel (i.e., compared to the hydrological features identified by the Mojave Desert Ecosystem Program, for example). However, the alternative would allow for vehicle use in only those washes that are designated as open, so the non-digitized wash routes would not be available for vehicle use.

Tortoises concentrate their foraging activities around washes (Jennings 1993), often burrow in wash banks or on adjacent slopes (Baxter 1988), and may occupy burrows closer to washes during periods of drought (Circle Mountain Biological Consultants 2002). Where OHV use in washes is common, tortoises are more at risk. They are already physiologically stressed by lack of both food and water. Since they are less active during drought but often lay at least one clutch of eggs, both animals and nests are in harm's way where heavy vehicle use occurs. Shrubs often take on a dull appearance and desiccate (dry out) during a single year of low rainfall. Because wash-side growth is denser than growth in adjacent open lands, there is increased risk of fire in washes where camping, shooting, and vehicle use is more common. Minimizing these and numerous other impacts (see Chapter 3) is perhaps the only practical thing that can be done to minimize impacts associated with drought, and is a beneficial impact.

Motorized Vehicle Access: The new route network would be adopted by CDCA Plan amendment upon issuance of the BLM's Record of Decision. Effective implementation of the network would require signing open and limited use routes, physically obstructing roads identified for closure, and other actions. An aggressive, focused education program that targets all vehicle

user groups would facilitate the success of the program. The assumptions inherent to this analysis are given in Table 4-3.

Table 4-3
Assumptions Regarding Motorized Vehicle Access Analysis

CATEGORY	ASSUMPTIONS
General	Unless otherwise noted, all discussion pertains to: ? Alternative A ? Desert tortoises (i.e., habitat, densities, mortality, conservation, etc. of tortoises) ? Public lands
Desired Results	? The goal is to designate and implement a route network that would provide for public access, authorized uses, and the following desired results: ? Fewer losses of tortoises to crushing, poaching, pet collection, intentional vandalism, and similar activities requiring vehicle access ? Less degradation and loss of occupied habitat (first priority) and suitable habitat (second priority) ? Larger blocks of unfragmented habitat, which would be achieved if vehicle use is prevented on designated closed routes, does not result in increased cross-country travel in adjacent areas, and promotes recovery of suitable habitats more quickly than would naturally occur ? Route closure in higher density tortoise areas is likely to provide the most benefit in terms of avoiding mortalities and other losses ? Route closure in lower density tortoise areas would alleviate losses of animals that are critically important to natural repatriation
Impacts to Tortoises and Habitat	? Tortoises are more likely to be adversely impacted (i.e., crushed, collected, poached, etc.) in regions supporting higher densities than in areas of lower densities ? Vehicle-based impacts are proportionate to the number of existing roads in an area. Both permitted (i.e., vehicle use that remains on existing roads) and un-permitted uses (i.e., cross-country travel outside BLM Open Areas, dumping, vandalism, collection, etc.) are more likely to occur where roads are relatively more common ? Tortoises and habitat are more likely to be impacted by vehicular activities in areas below about 20% slope than in steeper areas ? If left unchecked, vehicle use in areas of above-average human disturbances would continue to result in loss of tortoises, degradation of habitat, and seriously undermine conservation and recovery efforts

Given the assumptions identified above, there are likely to be both adverse and beneficial impacts associated with the BLM's motorized vehicle access network, as summarized in Table 4-4.

Table 4-4
Beneficial and Adverse Impacts of BLM's Motorized Vehicle Access Network

BENEFICIAL IMPACTS	ADVERSE IMPACTS

Overall Importance ? Designating and implementing a motorized vehicle access network that is supported by land use laws and compatible with tortoise recovery is the single most important management action that could be implemented to minimize the widest variety of known human impacts.	Overall Importance
For Animals and Habitat ? Implementing this alternative would reduce the following impacts, and would be proportionate to the linear miles of routes closed: ? Tortoises would be less susceptible to: pet collection; animals, burrows, and eggs crushed; gunshot impacts; handling that results in bladder voiding; harassment or mortality by pet dogs; poaching for ceremonial purposes; releasing pet tortoises into wild populations, which may spread disease; translocation, where tortoises are moved outside their home range into other habitats; and vandalism. ? Habitats would be less susceptible to soil compaction, displacement through wind and water erosion, petroleum contamination; spread of exotic weeds, which supports spread and intensity of fire; damage and complete removal of shrubs, which reduces protective cover and burrowing opportunities; dumping (which leads to more dumping), resulting in soil contamination, food sources for predators, focal areas for illegal target shooting; increased litter and garbage used as a food source by ravens; and increased noise levels (though effects are not well known).	For Animals and Habitat ? There is no clear way to assess the current or future impacts specifically associated with roads, which would be necessary to adaptively manage public lands to provide a balance between human use and tortoise conservation.
Route Reductions in Specified Regions ? Within *higher density areas*, the network would result in the closure of 577 of the 1,146 total linear miles of routes in such areas, which is a 50% reduction of routes in this area. This would have immediate and long-term benefits where tortoises are most abundant ? Within *lower density areas*, the network would result in the closure of 1,278 of the 3,079 total linear miles of routes in such areas, which is a 42% reduction of routes in this area. This would have immediate benefits to habitat and long-term benefits to overall conservation ? Within *above average vehicle disturbance areas*, a total of 435 of the 829 linear miles of routes would be closed, comprising about 53% of the existing routes in above average vehicle impact areas.	Route Reductions in Specified Regions ? The remaining 569 linear miles of open routes (50% in area) in *higher density areas* would continue to result in impacts ? The remaining 1,801 linear miles of open routes (58% in area) in *lower density areas* would continue to result in impacts to the few remaining animals, which are critical for re-establishing reduced or extirpated populations ? The remaining 394 linear miles of open routes (47%) in *above average vehicle disturbance areas* would continue to adversely affect tortoises

Given the assumptions, closure of any routes would be of some benefit to tortoise conservation. However, the effectiveness of the closures to achieve desired results is dependent on where the routes are located relative to higher and lower density tortoise areas, how soon the routes would be closed, and how well law enforcement would function to ensure traffic remains on approved routes of travel. Successful implementation must consider these and other variables, which cumulatively would provide the most substantial means of minimizing this known form of impact. If implemented as envisioned, the motorized vehicle access network would constitute a

significant beneficial impact.

There are potential problems associated with route closures that could undermine the conservation value of the reduced route network. For example, the conservation value would be adversely affected if closure results in increased illegal cross-country vehicle travel outside designated open areas, which in turn could lead to more crushed tortoises and habitat degradation. It is also possible (though not likely) that fewer routes may result in increased vehicle congestion on the remaining routes and concomitantly higher impacts in adjacent areas. These and many other impacts could be effectively avoided if BLM rangers begin to apply focused regulatory enforcement in conservation areas, which would require a major philosophical change in current enforcement practices.

4.2.2.3 Mohave Ground Squirrel

Table 4-5 reports only those beneficial and adverse impacts as they relate to MGS conservation that are different from the impacts identified under Alternative A for the tortoise.

Table 4-5
Mohave Ground Squirrel Impacts of Alternative A

BENEFICIAL IMPACTS	ADVDERSE IMPACTS
Recreation Competitive Events ? (HCA-40) Prohibition of vehicle speed events within the MGS Conservation Area would serve to minimize the amount of habitat degradation that is typically associated with this type of activity. This is likely to be more of a benefit to MGS habitat (important) than to actual squirrels, which are less likely to be crushed than tortoises, for example.	Recreation Competitive Events

4.2.2.4 Bats

The primary need for conservation of bats is protection of maternity and hibernation roosts, and secondarily, protection of transitory roosts used during migration. These roosts are most often mine shafts and adits possessing specific conditions of temperature, humidity, and light. They must be free from human disturbance. Roosts are less often found in rock crevices, abandoned buildings, under highway bridges, and in water tunnels.

Access is maintained in the Pinto subregion to one location with an important roost. Other routes of travel allow vehicles to come within one-half mile of a known roost. Until the adit entrances are gated, these roosts are somewhat at risk of human disturbance. The routes provide access to existing mining claims at the sites or in the immediate vicinity. Several desert washes in the area used for foraging by California leaf-nosed bats are undisturbed by vehicles.

Foraging habitat for these two species would be protected and routes of travel would be

eliminated from riparian areas and desert washes near significant roosts. Evaluation of potential vehicle impacts on the foraging habitat would be done on a case-by-case basis.

4.2.2.5 Other Mammals

Bighorn Sheep: Bighorn sheep in the West Mojave are found in only a few discrete mountain ranges away from the military bases. Route designation in the Ord and Newberry-Rodman subregions would reduce the occasional disturbance from vehicle traffic.

Mojave River Vole: This species is not affected by route designation on public lands. All known areas of occurrence are on private lands.

Yellow-eared Pocket Mouse: The status of the yellow-eared pocket mouse would remain relatively unchanged by provisions of Alternative A. Threats to this species are few, though its precise range and habitat requirements are poorly known. Route designation within the limited range is governed by ACEC management plans (Sand Canyon, Short Canyon, the Kelso Valley portion of Jawbone-Butterbredt, which are compatible with minimal surface disturbance on the mixed woody scrub of the hillsides. Designated wilderness in the est Sierras, which prohibits vehicle travel, also protects habitat for this species.

4.2.2.6 Birds

Bendire's Thrasher: Three areas of public land management would benefit Bendire's thrasher. In the Coolgardie Mesa area, reducing routes of travel through the Joshua tree habitat would decrease disturbance to this vehicle-sensitive bird during the spring nesting season. Little change would be evident in the Kelso Valley and Jawbone-Butterbredt ACEC, where existing management appears to support a small population. In north Lucerne Valley, management of BLM lands as open space with defined routes of travel would benefit the species in the long term by reducing disturbance.

Burrowing Owl: Although most recent burrowing owl nest locations within the West Mojave have been reported from private lands, often within urban areas, Alternative A would improve the habitat for this raptor by reducing vehicle disturbance at nest locations in more remote desert habitats. Reductions in route density, compared to the 2001 inventory, in the Coyote, El Mirage, Fremont, Kramer, Newberry Rodman, Ord, Red Mountain and Superior subregions are significant. Elimination of travel on single track trails and dirt roads in these areas will create larger blocks of disturbance-free habitat for the burrowing owl. This is a beneficial impact of Alternative A.

Golden Eagle: Most golden eagle nests are within designated wilderness, and nest disturbance is not a major factor. For those nests that are accessible, the provisions of Alternative A regarding the designation of a route network that mostly avoids nest sites based on line-of-sight and distance standards would be a beneficial aspect of the plan that minimizes impacts.

Inyo California Towhee: Designation of routes on public lands does not affect this species. The Ridgecrest Field Office has created barriers at accessible springs in the Argus Mountains (North Ruth Spring, Austin Spring, Benko Spring), so that the habitat for the Inyo California towhee is protected from vehicle intrusion. Open routes are not designated for access to Bainter Spring. These springs are designated as critical habitat by USFWS. No aspect of the Alternative A route designations will adversely modify the critical habitat.

LeConte's Thrasher: Alternative A would improve the habitat for this vehicle-sensitive bird by reducing motion and noise disturbance at nest locations in its desert wash and creosote bush scrub habitats. Reductions in route density, compared to the 2001 inventory, in the Coyote, El Mirage, Fremont, Kramer, Newberry Rodman, Ord, Red Mountain and Superior subregions are significant. Elimination of travel on single-track trails and dirt roads in these areas will create larger blocks of disturbance-free habitat for the LeConte's thrasher. This is a beneficial impact of Alternative A.

Prairie Falcon: Although many of the prairie falcon nest sites are within Wilderness, the remaining sites are often subject to human disturbance during the nesting season. Route designation in mountainous terrain would improve conservation for the prairie falcon. The provisions of Alternative A providing a route network that mostly avoids nest sites based on line-of-sight and distance standards would be a beneficial aspect of the plan that minimizes impacts.

Western Snowy Plover: Western snowy plovers are extremely sensitive to vehicle intrusion at the margins of playas during the nesting season. Alternative A does not affect the known nest sites at Searles Lake and potential nest sites at Dale Lake, which are located on private land. The probable nest location at Harper Dry Lake is managed by BLM within the existing ACEC, and vehicles (and pedestrians) are prevented from disturbing the birds during the nesting season.

4.2.2.7 Reptiles

Mojave Fringe-toed Lizard: Each distinct known habitat onpublic lands for the Mojave fringe-toed lizard is discussed separately below.

Along the Mojave River, public lands are in scattered parcels west of the Manix ACEC. Most, but not all, provide suitable blowsand habitat for the fringe-toed lizard. No routes of travel are designated for these lands (Map 47). From Manix east, the Mojave Road is designated as open from Manix Wash through Afton Canyon and beyond. Additional open roads traverse blowsand habitat between Fourmile Waterhole and Ninemile Waterhole (Map 48). These existing open roads do not appear to be impacting this species because of the very light use, but are not appropriate for conservation of the habitat for ths vehicle-sensitive species. The Designation Project would have a minor adverse affect on this population.

In the Sheephole Valley, the 1985-1987 route designations allow travel on three primary routes across fringe-toed lizard habitat on BLM lands outside wilderness and Joshua Tree

National Park. The light travel on these routes, which cover about one-fourth of the occupied habitat, does not appear to be impacting this species. These routes provide access to mining claims and are part of a recreational loop. The Mojave fringe-toed lizard population in this area should remain secure for the indefinite future.

At Pisgah Crater, vehicle intrusion onto occupied habitat would be restricted compared to the present. Alternative A proposes closure of some, but not all, of the routes crossing suitable habitat, which would be a beneficial improvement. Additional closures of spur routes and redundant routes in sandy habitat west of Pisgah Crater are necessary to insure adequate protection of the lizards and their habitat from vehicle damage.

Alternative A would consolidate routes accessing the west slope of Alvord Mountain (Map 41), closing several in the sandy washes. Access is maintained for the private land in this area, which is in a checkerboard pattern. This reduction in routes is beneficial to the Mojave fringe-toed lizard because it closes routes traversing occupied and potential habitat.

The population at Cronese Lakes would be conserved by adoption of the ACEC route designations, which are compatible with protection of the blowsand habitat.

Impacts to habitat of the Mojave fringe-toed lizard at El Mirage and east of Harper Lake cannot be determined until the occupied habitat is better defined. The historical records of occurrence for this lizard in these two areas are not precise, an no recent sightings have been made.

Panamint Alligator Lizard: Designation of routes on public lands does not affect this species. The Ridgecrest Field Office has created barriers at accessible springs in the Argus Mountains, so that the habitat for the Panamint alligator lizard is protected.

San Diego Horned Lizard: Between Cajon Pass and Joshua Tree National Park, route designation in the Juniper and Bighorn subregions would benefit the San Diego horned lizard. The habitat west of Cajon Pass extending to Palmdale, is almost entirely on private land and Alternative A would have no affect on this lizard in that region.

4.2.2.8 Plants

Barstow Woolly Sunflower: Barstow woolly sunflower is found within the Fremont, Kramer and Superior subregions. It grows on bare patches where soils are shallow, often underlain by a caliche layer. It is therefore susceptible to off-road vehicle travel, but is not damaged by travel on established roads. Proliferation of routes within the range fragments the habitat to an unknown extent, but its powers of dispersal are probably rather limited because of its small size and tiny seeds.

Route designation in the three subregions would benefit the Barstow woolly sunflower over the existing situation because larger blocks of undisturbed habitat would be created. Route

designation, especially for through motorcycle routes, would restrict potential damage from off-road travel

Carbonate Endemic Plants: The four listed carbonate endemic plant species on the north slope of the San Bernardino Mountains are mostly within the Bighorn subregion (Maps 70, 73 and 74). The routes within the habitat of the carbonate endemic plants are limited to those designated in 1985 and 1987. The terrain generally prevents off-road travel. Use of these roads is infrequent. Some routes have been used for dual sport events in the past. Past vehicle use has not been detrimental to the listed plant species, and the designations in Alternative A would not adversely impact the plants or further modify the critical habitat. Additional monitoring and review of the routes designated as open in the habitat of the carbonate endemic plants may be warranted.

Occurrences of Parish's daisy in the Bighorn subregion near Vaughn Spring (Map 74) are avoided by the adoption of the 1985-1987 designations proposed in Alternative A. No routes traverse critical habitat in Section 22 (T 2N, R 3E).

Critical habitat for Cushenbury milkvetch is crossed by routes within Sections 7 and 8 (T 3N, R 2E), though the routes appear to avoid occupied habitat. No adverse modification to critical habitat is anticipated from these existing routes, which are the same for all alternatives, because travel off the road is prevented by the terrain. These routes access existing mining claims on the Blackhawk Slide (Map 70).

The easternmost route through Section 1 (T 3N, R 2E) crosses critical habitat for Cushenbury milkvetch and Parish's daisy and is within the proposed Carbonate Endemic Plants Research Natural Area ACEC of the West Mojave Plan. The western route in this section forms the boundary of the ACEC. These routes access existing claims for limestone deposits. Elimination of the eastern route would be beneficial to the carbonate plants, but might prohibit access to a claim further south.

Within important habitat east of Highway 18 (Map 73) are two major areas where concentrations of the carbonate endemic plants are found. These areas also have overlapping critical habitat designations for 1, 2, 3, or all 4 species. These areas are North of Monarch Flats (Sections 11 and 12 of T 3N, R 1E) and West of Terrace Springs (known locally as the Partin Mine; Section 16 of T 3N, R 2E). Open routes extend across critical habitat to varying degrees in both areas. These routes access existing claims, are in poor condition, and are seldom used. In the North of Monarch Flats area, one open route enters public land from adjacent private land for less than 0.2 miles then deadends. In the West of Terrace Springs area, four route links cross into the National Forest. Because of their long prior existence as mining roads, these routes cause no new adverse modification of critical habitat. In a few cases near the Partin Mine, Parish's daisy is growing on the road surface or edge.

West of Highway 18 (which is outside the Bighorn subregion boundaries) one limited and one open route cross critical habitat for Parish's daisy in Section 10, T 3N, R 1E). All other

routes designated open west of the highway are outside known occupied habitat for all four carbonate species and outside designated critical habitat.

Existing fragmentation of the carbonate plants, a result of natural occurrence patterns and historical mining impacts, prevents conservation of a completely unified block of undisturbed habitat for these species. It is unlikely that routes through the habitat contribute in an important way to fragmentation or isolation of populations from each other.

The complex configuration of designated critical habitat within the Bighorn subregion, combined with the extensive series of claims in this area, both for limestone deposits and metallic minerals on the Blackhawk Slide, make route designation problematical. The western part of the Bighorn subregion is within the interagency Carbonate Habitat Management Strategy planning area. This BLM and Forest Service document analyzes the mining and conservation conflicts in detail and proposes resolutions based on BLM and Forest Service establishment of conservation areas and compensation to the landowners and claimholders. A more site-specific route designation could be provided through the ACEC process in the West Mojave Plan. Access roads to claims within critical habitat may require the limited designation.

Charlotte's Phacelia: Charlotte's phacelia faces few threats at present, being protected in the Owens Peak Wilderness, Red Rock Canyon State Park and in ACECs of the east Sierra canyons. No alternative would alter the existing protections. This species is found within the East Sierra and El Paso Mountains subregions, which would retain the 1985-1987 route designations. Designation of routes in the El Paso Mountains via the Collaborative Access Planning Area process would result in additional safeguards against habitat becoming disturbed by hill climbs, parallel routes, and dead-end routes, assuming that these routes are closed.

No adverse impacts are expected to Charlotte's phacelia from Alternative A.

Crucifixion Thorn: Very few threats now exist to the isolated occurrences of crucifixion thorn, which are found within the Coyote and Newberry-Rodman subregions. Reduction in the route network for both areas would benefit the species by establishing larger undisturbed habitat blocks, particularly near the crucifixion thorn "woodland" south of Fort Irwin. The existing maintained road near the "woodland" would remain open under Alternative A.

Potential disturbance by the Johnson Valley to Parker race on routes designated as open in the Pisgah area may impact the habitat of crucifixion thorn. This race is held on routes designated as open, and stipulations attached to the event at the time would prevent damage to the rare plants.

Desert Cymopterus: Alternative A would achieve a substantial improvement in conservation for desert cymopterus. Reduction of the route network in the Superior subregion will achieve better protection of the sandy habitat. Very few occurrences on public land are known for this species, although more are likely to be detected in the future. Maintenance of larger blocks of habitat is the best protection until specific localities are identified. Alternative A

would achieve this by closing 251 miles of routes within the Superior subregion.

Kelso Creek Monkeyflower: Kelso Creek monkeyflower is found only within the Jawbone-Butterbredt ACEC, where the existing route designations specified in the 1982 ACEC Management Plan will remain. That network, which would be adopted as a CDCA Plan Amendment for Alternative A, reduced the routes and trails within the occupied and potential habitat to a minimum. Access to private lands provides the main justification for the open routes, which are infrequently used. None appear to be impacting the known occupied habitat. No impact to this species will result from Alternative A.

As additional botanical surveys of the potential habitat better define the distribution of Kelso Creek monkeyflower on public lands, some adjustments may be necessary in the route designation. These would probably all fall within the definition of minor realignment.

Kern Buckwheat: Conservation of Kern buckwheat requires proactive management of the few known locations on public land. This management consists of providing barriers to exclude vehicles and restoration of widened routes and a parking and turnaround area in one location. Hence, conservation measures of the Route Designation Project for this species involve implementation rather than route designation. No routes are designated as open within the occupied habitat for Kern buckwheat, and Alternative A would beneficially impact this very rare plant species.

Lane Mountain Milkvetch: Route designation is very important to Lane Mountain milkvetch, an endangered West Mojave endemic species. Although direct impacts from vehicles to the plants and their habitat are not documented, indirect impacts from casual use mining and off-road travel could be significant. In addition, the potential operations planned on the Fort Irwin expansion may result in the loss of substantial numbers of plants and acres of habitat, so that the remaining habitat on public lands on Coolgardie Mesa (Map 33) and the west side of the Paradise Range (Map 40) must be managed on a reserve-level basis. Mitigation provided by the Army for potential impacts could include acquisition of occupied habitat on private lands and restoration and obliteration of roads on public lands. Implementation of the Route Designation Project would be aided by this mitigation.

The existing patchwork of private and public lands on the Coolgardie Mesa and the West Paradise Range where Lane Mountain milkvetch is found results in an incomplete network of access routes. If and when private land is acquired, additional routes may be designated as open or closed.

Alternative A closes many of the open routes on public lands in and near occupied habitat for this species, but is constrained by the necessity to provide access to the private lands. Access to mining claims is also provided. The West Mojave Plan proposes a mineral withdrawal for the occupied habitat. At the time claims are acquired or relinquished, certain routes within the habitat could be closed. The open designations consolidate access routes to popular destinations to the extent possible. However, Alternative A does not achieve the level of habitat conservation

necessary to avoid indirect adverse impacts to this species.

Little San Bernardino Mountains Gilia: Off-road travel is a known threat to Little San Bernardino Mountains gilia, but this threat is confined to washes on private land. Very few occurrences are known on public lands managed by BLM, though several occurrences are within Joshua Tree National Park. Alternative A would have no impact, either beneficial or adverse, on this species.

Mojave Monkeyflower: The Mojave monkeyflower is affected by route designation in the Ord subregion (Map 53) and in the Brisbane Valley (Maps 52, 58 and 59), which is not within a subregion.

In the Ord subregion, 390 miles of routes would be closed under Alternative A. Those roads within washes west of Camp Rock Road and near the transmission line that are closed would beneficially impact Mojave monkeyflower habitat by excluding vehicles from occupied habitat and by consolidating the potential habitat into large, disturbance-free blocks. Consolidation of the network near the Azucar Mine by closure of redundant roads is a positive impact to this species.

In the Brisbane Valley, travel on roads is not a threat, but off-road travel is extensive in places. The enforcement provisions of the implementing plan for the Designation Project would beneficially impact the Mojave monkeyflower in this region.

Mojave Tarplant: Existing occurrences of Mojave tarplant are protected within wilderness and BLM ACECs. Alternative A would have no affect on known populations of Mojave tarplant.

The historical occurrence near Mojave Forks dam has probably been extirpated. If the species were re-discovered in this area in the future, as in Grass Valley or other parts of Las Flores Ranch, adaptive management would be required to conserve plants in this area. This could include route designation on the few scattered BLM parcels in the area.

Parish's Phacelia: Route designation in Alternative A would have no affect on Parish's phacelia because travel on the small playas where it is found is not currently allowed. The enforcement and signing provisions of the implementing plan would be beneficial for this species. The Manix tank trail, which passes adjacent to the occupied habitat, would remain open under Alternative A.

Red Rock Poppy: Conservation provisions of Alternative A would represent no change from the existing situation for Red Rock poppy. Three quarters of the population is protected within Red Rock Canyon State Park, with the remainder occurring in the public lands of the El Paso Mountains. Threats are not apparent, but vehicle traffic off established roads could damage plants or their habitat.

The Collaborative Access Planning Area process for the El Paso Mountains would consider the range and local distribution of the Red Rock poppy. The resulting network of open roads and trails may eliminate parallel routes, hill climbs, and straying off established paths, especially in Mesquite Canyon. This would improve conservation for the Red Rock poppy by creating larger areas of undisturbed habitat for it to grow.

Red Rock Tarplant: Conservation provisions of Alternative A would represent no change from the existing situation for Red Rock tarplant.

The Collaborative Access Planning Area process for the El Paso Mountains would consider the range and local distribution of the Red Rock tarplant, now limited to Red Rock Canyon and Last Chance Canyon within the State Park. The resulting network of open roads and trails may eliminate parallel routes, hill climbs, and straying off established paths that pass near seeps and springs. This could improve conservation for the Red Rock tarplant by creating larger undisturbed areas at potential habitat near alkali springs.

Shockley's Rock Cress: Impacts to Shockley's rock-cress from Alternative A are as described for the carbonate endemic plants, except for the routes in the Vaughn and Mound Springs areas, where this species does not occur.

Short-joint Beavertail Cactus: Designation of routes on public lands would have no affect on short-joint beavertail cactus, which is found entirely on private land within the West Mojave.

Triple-ribbed Milkvetch: Although vehicle travel has a high potential to impact the endangered triple-ribbed milkvetch, no specific conflicts with routes of travel are known. Alternative A would have no affect on this species.

Future surveys in the Little San Bernardino Mountains area may result in newly detected occurrences. Potential impacts of access routes to newly detected populations may result in minor changes to the network in the future. These changes would probably fit the definition of minor realignments.

White-margined Beardtongue: The only apparent threat to white-margined beardtongue from recreation is off-road travel within the occupied habitat in washes draining the Cady Mountains. Alternative A addresses these threats by adopting the 1985-87 route designations for this area, which are compatible with conservation of this species. Access routes crossing occupied habitat are legal easements for utilities that must remain open. These specific crossings can be signed as part of the project implementation. Routes of travel that may impair wilderness suitability cannot be designated within the Cady Mountains Wilderness Study Area.

Closure of spur routes crossing washes northeast of Pisgah Crater (Map 55) will beneficially impact the white-margined beardtongue.

4.2.2.9 Cumulative Biological Resource Impacts

When placed in context of other developments within the West Mojave, including increased land development, mining and increased recreational use of habitat lands, the reduction in surface disturbance by the elimination of unnecessary and parallel routes and those impacting certain species would be beneficial and an improvement over the existing situation (the No Action Alternative). This is because larger blocks of relatively undisturbed habitat would be available, creating a lesser chance of vehicle collision, a reduced disturbance factor, and less fragmentation.

4.2.3 Recreation

A substantial increase in demand for access and related services would occur primarily because of increased population growth in Southern California. Other factors include:

- ?? An emerging awareness of desert resources and values
- ?? Saturation of other outdoor recreation areas in Southern California
- ?? Energy shortages and economic stresses that would cause more people to come to the relatively nearby Desert and stay longer
- ?? Technological innovation in recreational equipment that would influence user trends and consequently the demand for various resources

All of this suggests that the demand for access into the California Desert's public lands is on the increase, and that the need for the conscientious designation of routes into these large areas is high.

Under Alternative A, the western Mojave Desert will continue to offer a variety of areas and types of routes that will meet the needs of recreational users. While some activities such as competitive OHV racing have been curtailed and moved to areas specifically designated for that purpose due to environmental reasons (e.g., Stoddard Valley and Ord Mountain open area), the regional recreational needs of the public were carefully taken into account as they were weighed against other resource concerns. As a result the proposed route network largely meets public recreational and commercial motorized access needs. The Tables 4-6 reviews some of the effects of the proposed route network upon recreation opportunities within several of the more popular West Mojave subregions.

Table 4-6
Effects on Specific Types of Recreation

SUB REGION NAME	MC	4WD	EQUES-TRIAN	HUNTING	ROCK HOUNDING	HISTORIC EXPLOR-ATION	NOTES

Coyote	Moderate recreational opportunity for M/C. Greater closures in flat areas such as Coyote Lake	Moderate 4WD opportunity. Impacts on checker-board ownership low.	Staging opportunities continue to exists in spite of moderate closures.	Moderate bird hunting opportunities – closure is low impact	Moderate Rock hounding & mining - closure has low impact	Touring for interest in a few old mines, such as the Alvord Mines.	B to V started at Alvord Rd north of I-15 and continued east on utility easement.
El Mirage	Route closures in the flats will impact touring opportunity. Technical riding opportunity in mountains maintained.	High route closures in flats will have minimal impact. Technical routes maintained in Shadow Mountains. Larger OHV interest in El Mirage Dry Lake	Low Equestrian demand Potential equestrian opportunities maintained in Shadow Mtns	Low Hunting Demand Route closures will little impact to hunting opportunity.	No high level interest in rock hounding. Access routes in Shadow mountains remain for exploration.	No high level interest in historical exploration. Access routes in the Silver Peaks and Shadow mountains remain for exploration.	There is some recreation interest in area of Shadow Mts. and Rabbit Hole Mine
Fremont	Loss of touring opportunity in southern section	Loss of touring opportunity south of Harper Dry Lake.	No loss of technical opportunity; some loss of touring	No loss	Minimal loss in the mountains.	Minimal loss in the mountains.	Exploring through traveling of old routes such as Cuddeback - Fremont Road, Lockhart Road, and Harper Lake Road.

Juniper	Popular MC opportunity due to relative proximity to the Apple Valley and Victorville. Leaves intact the viable route network with minimal impact.	Moderate to heavy level of route closures but viable route network left intact.	Equestrian access to San Bernardino National Forest through primary routes such as the Pack Trail and trails along Grapevine Canyon. Just north of the Pacific Crest Trail. Minimal impact on equestrians.	Moderate size of subregion does not offer a high level of hunting opportunities, however the proposed route network accommodates hunting.	Subregion does not offer a high level of rock hounding opportunity.	Allows trail access to early historic sites in San Bernardino Mountains relating to late 1800s and early 1900s time period.	Relatively small subregion located at the north base of the San Bernardino Mountains and on the north edge of the San Bernardino National Forest. Access still provided to most popular routes and staging areas.
Kramer	This is a moderate use sub region. High levels of closures have a moderate impact.	Moderate use sub region. High levels of closures have a moderate impact on 4WD recreation, travel on Kramer Rd, Buckhorn Wash and Iron Mtn Rd in east Kramer.	Low equestrian interest. High levels of closures have little impact. Opportunity maintained in Iron Mtns.	Low draw for hunting High level of closures will have little impact on opportunity.	Historic high interest in Kramer Hills. Access opportunity in that area maintained.	Low historical interest Hi closures Low impact	Activity level of this sub - occurs because of Proximity to Highways 395 & 58
Middle Knob	Moderate MC opportunity.	Significant interest in 4WD activity related to mining and maintaining facilities such as the Los Angeles Aqueduct.	Moderate level of 4WD routes offer access for equestrians; this access is maintained since there is a low amount of closure.	The existing 4WD network provides good access to the Middle Knob area for hunting.	There is a minimum of rock hounding interest in this area; trail network provides some opportunity.	Historic exploration can be enjoyed through visitation of old mines, such as the Amalia Mine and Skyline Mine.	There are recreation opportunities through traveling on maintenance routes to the Los Angeles Aqueduct.

Newberry - Rodman	Relatively low demand for MC recreation; much of the central portion of the subregion is within Rodman Mtn and Newberry Mtn Wilderness.	Some 4WD opportunity, but relatively small network of routes.	Low level of equestrian recreational opportunity due to low number of appropriate trails.	Low level of hunting opportunity.	Relatively high interest in rock hounding, due to presence of several mines such as the Bell Mine, Silver Cliffs Mine, Camp Rock Mine, and the National Mine.	Good access off of Interstate 40 and Fort Cady Road to mining areas and primary 4WD routes for circulation, such as Troy Road and Fort Cady Road.	Network provides access to the Newberry Mountains and Rodman Mountains Wilderness, and also the Johnson Valley OHV Area to the south.
Red Mountain	High recreational opportunity maintained by selective site-specific moderate closures. Route closure plan will reduce recreation opportunity at Cuddeback Lake.	High 4WD interest will be moderately impacted by closures. Route closure will reduce recreation opportunity at Cuddeback Lake.	Moderate equestrian opportunity. Moderate closures will lead to moderate impacts.	High interest. Moderate closures will impact opportunity moderately.	Very high levels of historic and present day mining activity. Moderate closures may result in only moderate impact due to minimal access needs being met by network.	Historic interest in mining. Opportunity maintained by selective closures.	Mountainous terrain in north offers interest in OHV activities, north of Twenty Mule Team Road and Cuddeback Lake.
Superior	Moderate recreation opportunity. Moderate to high route closure. Moderate impact.	Moderate recreational opportunity. Moderate to high route closure. Recreational impact generally low.	Moderate to high equestrian demand. Moderate to high closures done selectively; impact low.	Low to moderate hunting demand. Good route network, low recreational impact.	High rock hounding demand. Network maintained, little impact.	Moderate interest. Low impact to recreational opportunity.	Region has high tortoise numbers so many routes closed. Those routes retained still offer a complete network.

Note: MC = Motorcycle; 4WD = Four Wheel Drive Vehicles

Recreationists who cannot participate in their desired activity in one location may seek an alternate site elsewhere. The result may be "spillover" into areas adjoining or nearby the location where the visitor originally went to recreate. This increases the chances of random travel, perhaps by using closed routes or no cross-country, in search of a new site. In order to minimize travel on closed routes or the creation of "volunteer routes", additional signs and other informative media can be used to direct recreationists to other locations, via designated routes, where the desired type of recreation exists. This would, however, increase workload demands on BLM staff to maintain signs along designated routes. Examples of this may occur in the Kramer sub region in the areas adjoining the community of Silver Lakes in areas north of Barstow in the Superior sub region.

Competitive Events: With the exception of the Barstow to Vegas and Johnson Valley to Parker races, and the use of "C routes" all competitive events have occurred in the OHV open areas since the CDCA Plan was adopted in 1980. The Barstow to Vegas and Johnson Valley to Parker races have not been run for nearly 15 years, so with the exception of the events that have used the "C Routes" near the Spangler OHV area, all competitive racing has been located within the OHV areas. Alternative A does not reduce the size of the OHV areas; therefore, the amount of land available for competitive events since the late 1980s would not be changed.

Both the 29 Palms Wild West Grand Prix and Adelanto Grand Prix are held entirely on private property that has previously been approved for sports activities such as this. As such, no effect is anticipated

Table 4-7 discusses the general effects of the proposed motorized vehicle access network on public access to each of the route subregions.

Table 4-7
General Impacts of Route Designations
On Motorized Vehicle Access

SUB REGION	DIRECT IMPACTS OF ROUTE DESIGNATIONS ON ACCESS OPPORTUNITY	INDIRECT IMPACTS OF ROUTE DESIGNATIONS ON ACCESS OPPORTUNITY:	NOTES
Coyote	Relatively more routes were closed in the area of Coyote Dry Lake and Superior Valley, providing less access in this area.	The general touring opportunities lost due to closures will shift such activities to other similar areas where such opportunities still exist, such as the northern portions of the Superior sub region.	Closures of routes in this sub region are moderate and primarily aimed at duplicity. The eastern legs of Coyote that surround the Soda Mountains WSA had moderate closures of routes and thus, less access to the WSA.
El Mirage	A proportionately higher number of route closures occurred in those areas characterized by "bajada" topography, limiting travel in this type of landscape. A proportionately higher number of routes were kept open in the more mountainous terrain. A proportionately higher number of routes were kept open in the more mountainous terrain, such as in the Shadow Mountains near Rabbit Hole Mine.	Route closures in the flatter topography will afford more buffer protection to the private properties that checkerboard the area, thereby reducing conflicts between different uses.	The network largely addresses recreational and environmental needs. Route closures in the flatter topography will shift some of that use to other areas where the concerns related to tortoise protection are not as high, e.g. to the El Mirage OHV Area, in particular the El Mirage Dry Lakebed.
El Paso	No change from the currently designated route system.	No change from the currently designated route system.	

Fremont	A proportionately higher number of route closures occurred in those areas characterized by "bajada" topography, limiting travel in this type of landscape. A proportionately higher number of routes were kept open in the more mountainous terrain of the northern portions of this sub region, including Gravel Hills, Hamburger Mill, and Fremont Peak Area.	Proportionately higher rates of route closures in high tortoise density areas in El Mirage, Kramer, and Superior sub regions should shift more activity to the more mountainous, historically popular northern portions of this sub region, e.g. Gravel Hills, Hamburger Mill.	Route designations considered historic recreation patterns and sensitive species concerns (particularly desert tortoise). The route system designated under this alternative both more accurately reflects and addresses both the access needs and environmental concerns of the entire planning area.
Juniper	Subregion is relatively small, with a viable route network serving recreational opportunity.	Subregion serves as a staging area for visitors from the Apple Valley wanting to recreate in the San Bernardino Mountains. One route of access would be through the Grapevine Canyon Area of this subregion into the Coyote Flat area of the San Bernardino National Forest, while another would be from the Juniper Flats area in the subregion into the Deep Creek area of the San Bernardino National Forest via the Pack Trail.	Good equestrian access from the Apple Valley to the San Bernardino National Forest through the Grapevine Canyon area, as well as into the Deep Creek area via the Pack Trail.
Kramer	A proportionately higher number of routes were closed in the flatter areas of Kramer where tortoise concerns were greatest, whereas in the historically more actively visited areas (e.g. Kramer Hills for rock-hounding and Iron Mountains for family camping) a proportionately higher number of routes were left open.	The large closure rate in southern Kramer will reduce the impacts from the Silver Lakes urban area and should allow for the continued existence of high tortoise densities in this area. In a like manner, the high route closure rate in the central and center-north portions of this sub region should facilitate the continued existence of healthy tortoise populations in this area.	Many of the routes crossing this sub region were created by race events in the 60's and 70's. Those events have since been shifted to the "Open Areas" designated for that purpose. Those routes and the Kramer subregion as a whole are not as popular as other areas for motorcycle use. Also because most of the sub region is comparative flat relative to other sub regions, it offers less interest for vehicle recreation. These factors make it conducive to emphasizing route designation that is more focused toward tortoise protection.
Middle Knob	The low-density route network in this sub region is planned for low closure and therefore a viable route network will continue and will provide access to mines, and for the servicing of utility corridors.	Low to moderate indirect impacts because of low level of route closure.	This area could have a special recreation demand because it offers recreational opportunity at higher elevations, such as in the Chuckwalla Mountains, which is over 5,000 feet, and Middle Knob peak at 6,000 feet.
Newberry – Rodman	Benefits from direct access from Interstate 40, which provides access to Newberry Mountains Wilderness, Rodman Mountains Wilderness, and the Johnson Valley OHV Area to the south.	Subregion is an access point to other areas of interest either within the subregion or surrounding it. Access would continue to be provided for touring, rock hounding, and visiting mining sites (such as Silver Cliffs Mine, Bell Mine, and Camp Rock Mine).	The subregion is bordered on the southeast by the Marine Corps Air Ground Combat Center.

Red Mountain	The rugged northern portions this sub region near 395 have a very high density of mine claims. In order to maintain this access need, relatively more routes were designated open in this area. In the flatter southern and eastern portions of this sub region tortoise concerns led to proportionately more route closures.	The greater closures in the eastern and southern portions of Red Mountain also will afford greater protections to the tortoise, but will hinder recreational opportunities. Recreational activity will therefore shift to the more mountainous areas of this and the Fremont sub regions where more recreational opportunity was maintained.	Route designation in this sub region like others that were located within desert tortoise critical habitat emphasized encouraging recreational opportunities in the more mountainous regions north of Twenty Mule Team Road by opening a more extensive network in those areas. On the other hand tortoise protection was facilitated by leaving relatively fewer routes open in the flatter bajadas terrain.
Superior	The relatively high number of route closures in those areas known for high tortoise concerns will reduce a variety of recreational opportunities in those areas. Many routes are closed in areas of low recreation interest and where sensitive areas occur such as the Rainbow Basin ACEC. Fewer closures in high value recreation areas.	The high level of route closures in those areas known for desert tortoise or Lane Mountain milk vetch should afford these species additional protection from a variety of vehicle-related impacts. The closures associated will also shift recreational use away from these generally flatter areas to areas where more recreational opportunities are facilitated by a denser open route network.	This largest of sub regions had both a diversity of recreational interests, as well as environmental concerns. The Superior Sub Region has a lot of flat area offering lower recreation value and greater habitat value for the tortoise. Therefore a high level of closures help the tortoise without significant impact to access opportunity

Most of the recreational needs and opportunities identified by the public take place in the more mountainous terrain of the planning area, such as the Gravel Hills in the Fremont subregion and the more mountainous areas of the Red Mountain subregion, while many of the more sensitive desert tortoise areas are located on the bajadas and in washes. The proposed network would take account of this by leaving relatively more routes open in rougher terrain (e.g. Kramer Hills, Gravel Hills, Hamburger Mill, Red Mountain, the Superior sub region hills north and east of Rainbow Basin), and impose relatively more closure in the flatter surrounding areas (e.g. in portions of the El Mirage, Kramer, Fremont, Red Mountain, and Superior subregions). The network would address other sensitive species concerns (which included many immobile plants) by avoidance.

Because the designated open route system is less than the entire inventoried network (including non-designated "volunteer or legacy" routes), visitor use on the designated routes would increase. Visitors would still be able to experience solitude in a number of natural areas due to the size of the area and the extensive open route network that would be provided. Examples of where this solitude can still be experienced occur in the wide open expanses of the Superior sub region.

The proposed network provides for relatively undiminished camping opportunities throughout the planning area. Campsites in the Iron Mountains, Kramer Hills, Gravel Hills, Hamburger Mill, the Pinnacles, and around Rainbow Basin, as well as a number of other areas would still be largely accessible to the public. The staging areas and trailheads associated with many of these campsites would remain available for equestrian endurance rides, rock hounding,

hiking, birding and hunting.

Abundant opportunities for both dual-sport motorcycle and 4WD touring still exist throughout the planning region. The network provides connectivity of routes by route type, such as single-track or two-track, enabling long touring routes to be created that would allow enabling visitors to travel over large areas. These recreational routes opportunities traverse a variety of landscapes. Thus, a visitor, whether on a dual sport motorcycle or SUV, may engage in multi-hour (e.g. through the Kramer Hills or up Mesquite Canyon through the Bonanza Gulch of the El Pasos) to multi-day tours (e.g. dual sport motorcycle rides starting in the El Mirage sub region and ending in the Ridgecrest sub region or SUV tours traveling along the many old historic roads that lace the planning area, such as the Mojave Road, the Spanish Trail, and Isham Road. Many of these historic roads are noteworthy for the distance and variety of terrain that they allow the experienced desert visitor to travel.

More challenging or more technical routes were also left in place wherever possible. Generally these were located in the more mountainous terrain, such as the Gravel Hills of the Fremont sub region or the Iron Mountains of the Kramer sub region. A greater number of routes tended to be left open in the more mountainous terrain, while more were closed in the bajadas and washes.

The needs of specific recreational interest groups would be met. These include:

?? *Rock hounds and gem collectors.* Access to a number of sites and destination areas identified as important during the planning process was retained. Some of these sites included spots in the Newberry-Rodman sub region, the Kramer Hills and a number of dispersed sites in the Superior sub region.

?? *Equestrians, including endurance race riders.* Access to staging areas is provided, and motorized routes that parallel equestrian endurance courses were, in many cases, retained as open routes. For example routes paralleling the Grass Valley and Golden Wilderness Areas often serve equestrians entering these wildernesses. This factor weighed prominently in keeping some of these routes open.

?? *Upland game hunters.* Routes that would enable volunteers (such as Quail Unlimited) and CDFG to maintain guzzlers were retained, as were other routes that served to access hunting areas that are only utilized during the fall hunting season. In particular a number of specific sites and their associated routes were identified in the Red Mountain sub regions.

?? *Informal and formal historic sightseeing societies.* Access to many old routes, mining sites, and homesteads that are of special interest to these organizations was retained. This is important because guidebooks, maps and magazine articles publicize these sites, making them popular destinations.

The route network would also meet commercial access needs, including access to the following:

?? Utility easements such as electrical transmission lines, communication towers (both public and military) and underground communication lines, pipeline corridors, support facilities, support and maintenance roads;

?? Ranching facilities including outbuildings, corrals, water tanks, wells, and service roads; and,

?? Mining facilities including tunnels, pits, buildings, claim stakes, and service roads.

Private property access would be provided to each known privately held parcel. Factors that were taken into consideration in determining the appropriate access route were the size and remoteness of the parcel, proximity to other areas of development and/or occupancy, topographic features (e.g. canyons or ridgelines) that might bisect the property and thereby necessitate two or points of access and safety issues. In one area, Homewood Canyon, known occupied parcels were afforded more than one point of access due to the risk of flash floods.

The proposed route network would have few unmet access needs. Although some areas, particularly those identified as having higher than average tortoise densities, may have substantially fewer routes than other areas, those routes that do remain open would provide access to meet inventoried needs. In some areas, however, access needs (primarily recreational) would be constrained due to resource needs. These would include portions of the following subregions:

?? The El Mirage subregion may lack motorcycle and vehicular touring opportunities in the bajadas north of the Shadow Mountain complex.

?? The Kramer subregion, both west and northwest of Silver Lakes, may not meet demands for general motorcycle recreation and touring.

?? The Red Mountain subregion west of Cuddeback Lake, where demands for general motorcycle, vehicle touring and camping opportunities would not be fully provided.

These shortfalls in recreational access would be compensated by available access for similar forms of recreation elsewhere. Vehicular and motorcycle touring opportunities would be abundant in many other sub regions where the resource issues are not such a major concern. Off highway vehicle open areas, moreover, would help absorb displaced demand for general motorcycle use.

Most of the Backcountry Discovery Trail System would be designated open. In those cases where certain BDTS routes were recommended for closure due to resource concerns, alternative open routes are available to maintain the continuity of BDTS.

The proposed network generally avoids dry lakebeds (such as Harper Dry Lake in south Fremont, Superior Dry Lake and Coyote Dry Lake). Routes would remain open on or around each dry lakebed only where necessary for efficient travel management, where necessary to meet a specific need of the area such as resource protection or public safety. No change is anticipated in the management of the Sunfair Dry Lake area. BLM manages only three-fourths of a section in this area. The vast majority of the area currently used for OHV use is held either privately or by San Bernardino County. San Bernardino County once planned on an OHV recreation facility at this area, but eventually abandoned these plans because of the cost associated with the management of such a site. Although recreational OHV visitor use has continued, there have not been any serious issues identified by either the county or BLM.

4.2.4 Cultural Resources

4.2.4.1 Activities That Would Affect Cultural Resources

Activities proposed in Alternative A that may affect cultural resources include the following listed actions.

?? Implementing actions such as construction of fences or culverts, placement of signs and kiosks, rehabilitation and restoration of routes or larger areas;

?? Designation of routes of travel as open to vehicle use if those routes occur on or near cultural resources; and

?? Decisions to continue use of existing designated routes that are located inside, near, or in the vicinity of cultural resources.

For many of these activities, significance of effect would be evaluated when specific actions are proposed and their locations are known. Specific actions would be subject to full compliance with cultural resource statues and regulations, and managers must not approve proposed activities until compliance with Section 106 of the National Historic Preservation Act has been completed and documented, including consultation with the State Historic Preservation Officer and federally recognized Indian tribes.

The effect of routes of travel on cultural resources has not been fully determined because information needed to assess effect is incomplete at the present time; however, records and observation indicate the effect on some sites is significant. Route designation would be reviewed under the Section 106 process, and a programmatic approach to Section 106 compliance for routes of travel within this planning area is being discussed with the California State Office of Historic Preservation.

4.2.4.2 Regional Analysis: Potential Areas of Conflict

Christmas Canyon ACEC: The 1985-87 route designations would be adopted for the portion of this ACEC outside the Spangler Hills Open Area. The effects of this designation process have not been determined and have not been subject to Section 106 consultation. Under Section 106 of the National Historic Preservation Act, effects of an action and proposed mitigation must be subject to consultation with the State Office of Historic Preservation prior to making a decision. Current on-going inventory within this ACEC has resulted in recordation of approximately 100 previously unknown archaeological sites and has identified the presence of an extremely significant complex of sites in the ACEC and in adjacent areas. Analysis of materials from these sites places them amongst the oldest known sites in the California Desert and throughout the United States. Route designation decisions here should fully consider impacts to or opportunities to protect these very important and very fragile cultural resources.

J**awbone/Butterbredt ACEC:** Routes within this ACEC have only recently been subject to partial Section 106 consultation. Inventory occurring now has resulted in recordation of more than 100 previously unknown sites within the ACEC and open areas contained within the ACEC. This data, still being processed, is likely to affect any existing designated route system. Sites within the ACEC are currently being affected by the designated route system, including the Dove Spring site (2.5 feet of artifact-bearing midden soil at the junction of three open routes). Several other significant sites are known to be suffering adverse impacts from designated routes.

Last Chance Canyon ACEC: The effects of the 1985-87 designated route system on cultural resources have not been determined because route inventories for cultural resources have not yet been carried out. This area has extremely high site densities and is part of the Last Chance Canyon National Register District. The decision to adopt this route system has not been subject to Section 106 requirements. The decision to retain existing route designation in this area would continue existing adverse effects for an unidentified length of time. Alternative A would implement by a Plan Amendment the ACEC decision to close the east access to Mesa Spring, which is a beneficial impact. Of greater importance at this site is a physical barrier to vehicle travel.

Wildlife Water Sources: A decision to leave existing artificial water sources in place and to continue to allow access to these facilities for maintenance would result in continuing impacts to some prehistoric sites. A number of guzzlers within the planning area have been built into significant prehistoric sites, including sites in the Last Chance Canyon National Register District and Red Mountain Spring National Register District. Recognition of on-going impacts to significant sites requires that efforts be made to reduce or eliminate the impacts under Section 110 of the National Historic Preservation Act. A decision to leave them there and continue their use and maintenance, rather than moving the activity elsewhere, would require mitigation of effects to the cultural properties being affected.

4.2.4.3 Off Road Vehicle Route Designation

Route designation has the greatest potential to both impact and protect significant cultural resources, depending upon the criteria used to designate routes as open or closed. A study of

impacts to cultural resources in the California Desert that was done in concert with preparation of the CDCA Plan identified the combined effects of vehicle routes and activities in and on archaeological sites and vandalism resulting from increased levels of access as OHV use became more popular as the greatest impact and greatest threat to cultural resources in the California Desert (Lyneis *et al.* 1980). This study referenced similar studies in other states that reached the same conclusions. Vehicle routes across or near archaeological sites affect those sites in various ways, depending upon the nature of the archaeological materials, the nature of the soils at the site and in the immediate vicinity, and the topography of the immediate area. Softer soils, and especially "midden" soils[1], are easily displaced by vehicle tires along with artifacts or other cultural materials that may be in the route. Artifacts and the soil matrix in which they exist may be displaced both horizontally and vertically as vehicle tires move through the soil. Artifacts such as projectile points, flakes, beads, pottery and other thin items of stone, bone, shell, etc. may be broken or crushed by the weight of vehicles passing over them. Under some conditions, larger stone objects such as manos and metates may be cracked and broken by vehicles. Subsurface features such as hearths or burials may be exposed either directly by vehicle use on the road, or indirectly by erosion channels created by vehicle use. Erosion of routes may affect sites that are off the route but downstream in the erosion channel. Vehicles passing each other or going wide to avoid ruts may gradually widen a route so that it cuts deeper into the portions of sites along the sides of routes. Routes through historic sites may also displace or damage artifacts in the road or immediately adjacent to the route. Effects may occur from the actions, both deliberate and inadvertent, of the occupants or operators of the vehicles, such as collection of artifacts or erosion as a result of the use of the route. Similar effects can also occur to cultural resources that fall within the 600-foot wide (300 feet on either side of the centerline) corridor along routes in which parking, camping, pulling off, etc. are allowed.

4.2.4.3.1 Effects Of Networks: Ridgecrest Field Office

Assumptions and Methods: Within the Ridgecrest Field Office Area, no cultural resources field inventory has been carried out on the proposed 2002 route designation updates. Assessment of effects is based upon data available in a GIS database system. This data includes the 1985-87 route designation system for all of the sub-regions subject to route designation and 2002 updates for Middle Knob and Red Mountain sub-regions. The database also includes static data from the California Historical Resources Information System generated over a year ago. New inventory and archaeological site data are not included in the database. Information in the database includes recorded prehistoric and historic site locations and areas that have been subject to cultural resources inventory. The accuracy of the following analysis is directly proportional to the accuracy of the digitized data available. Since this data has been collected over time from various sources and no field checking has been done, the accuracy is unknown. For purposes of analysis it is assumed that data in the GIS database accurately represents the locations of cultural resources and the locations of vehicle routes under consideration. The actual degree of accuracy/error is unknown. Since levels of archaeological inventory for the planning area in general are very low, 1% to 2% in most areas, the predictive value of the archaeological data is

1 "Midden" is a term used for the highly organic soils that form on some prehistoric habitation sites as a result of long-term or intense occupation of the site location.

low as well. For purposes of analysis, the width of routes was arbitrarily set at 10 feet on either side of the centerline, the centerline being the line in the GIS database that represented each particular route. This would, of course, be too narrow in some instances and too wide in others. Also for purposes of analysis, effects or potential effects of the 600-foot corridor (300 feet on each side) were analyzed. In some areas this corridor would be narrowed under actions proposed in this alternative. Finally, time constraints did not allow for determining whether or not all of the sites in the database are still in place. Some may have been subject to mitigation as a result of actions that have occurred since the sites were first recorded; however, it is unlikely that the bulk of the sites have been evaluated for significance or subject to any data recovery.

The impact to cultural resources within the Barstow Field Office Area by the route network proposed in Alternative A was evaluated using 7.5 minute quadrangle maps and overlays. GIS route data was not available; therefore, due to time constraints, analysis was restricted to proposed open routes.

Sub-regions selected for route designation updates in the Ridgecrest Field Office area include Red Mountain, Middle Knob, Fremont, Ridgecrest and El Paso. Updated route networks were available for analysis of Red Mountain and Middle Knob. The other sub-regions would continue with the 1985-87 or other previous route designations, either permanently or (in the case of Ridgecrest and El Paso) until the completion of the El Paso Collaborative Access Planning Area process.

Red Mountain Subregion: In the Red Mountain sub-region three recorded sites are directly bisected by routes contained within the 2002 digitized route system. One of these routes, RM-1184, would be closed under the proposed 2002 route designation system. The site on this route was recorded in 1976 as a small milling station, with no more recent data available. Although this particular route is proposed for closure, use of the route may have already affected the site.

Three routes proposed for open designation intersect inside the Blackwater Well National Register District and inside the boundaries of the primary prehistoric habitation site (first recorded in the 1930s) that is the focal point of the National Register district. Use of the sites within the district "extended from about 1200 B.C or earlier to possibly as late as A.D. 1820. The main village itself, designated CA-SBR-2322, has been described as 'one of the richest archaeological sites in the California desert' (Hickson 1978:7)" (Blackwater Well National Register Nomination Form). The site is about three acres in size and about one meter deep. The three routes, which intersect on top of the village site, have caused considerable damage to the site; continued use of the routes would result in continued deterioration of the site. Since the primary goal in National Register districts is preservation of significant cultural resources, avoidance of impacts by closing the routes would be the most appropriate option. If the routes were designated open, mitigation of effects in the form of scientific data recovery and analysis would be required under Section 106 of the National Historic Preservation Act. Continued degradation of the site and scientific data recovery may both have impacts on Native American values attached to the site. Loss of the site would preclude on-site public interpretation/education opportunities. One of the same three

routes intersects a second site inside the National Register district, SBr-10278, a milling station described as in fair condition when recorded in 1978. The artifacts recorded on the surface are all small and lightweight enough to be easily damaged or scattered by vehicle use of the road through the site. Sites within the district may well also fall within "existing disturbed areas" along routes in which camping and parking would be allowed under Alternative A. Field inventory would be required to determine how many sites within the district would be subject to impact under Alternative A. Almost all of the known sites within the district have fallen within the existing 600-foot corridor along routes for camping, stopping and parking, so all of the sites within the district have already been impacted to some degree by the existing route network. Because effects to cultural resources from vehicle access can occur beyond established vehicle corridors, route designation within the National Register district should be re-evaluated, taking into consideration the effects of travel, vehicle use, and related activities on archaeological properties inside the district.

The GIS database indicates an additional 22 archaeological sites that fall within the existing 600-foot corridor allowed for camping, parking and stoping. These sites include temporary campsites, roasting pits, milling (food processing) sites, petroglyphs, and habitation sites. Some are within the Red Mountain Spring ACEC and the partially over-lapping National Register district. These sites have already been impacted by vehicle activity along the routes. Seventeen of these sites are along routes proposed for open designation under the current plan, including RM2018, RM2001, RM2036, RM2034 (three sites along this route), RM2051, RM4001, RM3021, RM2017, RM2020, RM2018, RM2051, and RM2129. Reduction of the corridor width to 100 feet (50 feet on either side of the centerline) may decrease the number of known sites within corridors of vehicle use but even sites that are no longer within the corridors would have already suffered some degree of damage. Time constraints did not allow for full analysis of how changing the corridor width would affect impacts to cultural resources. The actual number of sites that have been affected and would be affected by the route network system is unknown due to the very low level of inventory in the area and due to the fact that impacts from vehicle access can extend beyond the allowed vehicle corridor.

In the absence of valid levels of inventory a certain amount of prediction regarding archaeological site densities in the Red Mountain sub-region and consequent levels of impact to cultural resources within vehicle corridors can be made using cultural resource sensitivity polygons based upon inventory for the CDCA Plan. These sensitivity polygons identify areas in which the potential for significant cultural resources is considered to be high or very high in relationship to surrounding areas. Documentation justifying a determination of high or very high sensitivity was based upon such factors as number of recorded sites, types of sites, diversity of sites within an area, uniqueness/rarity of known sites, scientific value, aesthetic value, integrity of known sites and their surroundings, socio-cultural and Native American concerns, and similar values. Predictive site densities for the Red Mountain planning unit run around 4.5 sites per square mile. Inside the sensitivity polygons site densities are expected to be higher than this average. Approximately 270 miles of route and 10,118 acres of route corridor fall inside the high/very high sensitivity polygons. It is expected that some degree of impact has occurred to cultural resources within these areas. Of these routes, 162 miles would be designated as open

under this alternative. The 600-foot route corridor would amount to 7,791 acres. This alternative would reduce levels of impact to resources on approximately 3,000 acres if the route corridors stayed at 600 feet. Currently available data does not allow for finer definition of impact over the sub-region as a whole.

Middle Knob Subregion: Five routes proposed for open designation, MK0010, MK0013, MK0014, MK0016, and MK0019, intersect recorded archaeological sites. MK0010 intersects 12 recorded sites, MK0013 two recorded sites, and the other three routes intersect one recorded site each. Site types intersected by these routes include a series of prehistoric lithic scatters at which stone was quarried and worked into tools. Some of these sites are very large and were observed to contain formed tools as well as scatters of flakes and cores that are the detritus of making stone tools. One stretches for 400 meters along a route. Some contain evidence of use as temporary campsites for collection of resources other than tool stone. One site is a historic site containing segments of historic routes, structures, and debris scatters that date from 1848 to the present. Many of the site records note vehicle damage. An additional 5 sites are recorded within 600-foot corridors along proposed open routes. A short route segment that is proposed for closure bisects one additional site, a lithic scatter that covers over 5000 square meters. The site record indicates some damage has already occurred to the site.

For predictive purposes, approximately 15 miles of route (approximately 3,000 acres of route corridor) that is proposed for open designation fall within areas that have been determined to be of high or very high sensitivity for cultural resources as a result of the CDCA Plan inventory. Given the number of known sites in the sub-region and the low level of inventory it is likely that many more sites would be found along existing routes.

East Sierra, Fremont, North Searles and South Searles Subregions: These four sub-regions would retain existing route designations. A number of open routes within these sub-regions cross significant archaeological sites and are causing damage, sometimes severe, to the resources. The GIS database shows 15 sites that are bisected by open routes. These sites include eight large permanent or semi-permanent prehistoric occupation sites (villages) that are characterized by the presence of flaked stone tools, milling tools, fire-affected rock, hearths, and in some cases, house depressions and pottery sherds, and midden to a depth of more than 100 centimeters. Although none of these sites have been formally evaluated it is likely that all would be found eligible for listing in the National Register of Historic Places. Some of these sites are crossed by several routes and all of the site records indicate damage, usually severe. These sites occur in Ninemile Canyon, Grapevine Canyon, Sand Canyon, Indian Wells Canyon, Freeman Canyon, and the Little Lake area. It is highly likely that other such sites exist in these same canyons or other canyons on the Eastern Sierra front. Recent inventory of the Los Angeles Aqueduct and transmission line (in process) resulted in recordation of over 300 sites that have not yet been entered into the currently available database.

Recent inventory in the Searles Lake area has resulted in location of approximately 100 previously recorded sites, all prehistoric, but the data is still in preparation and is not available for current analysis. It does indicate the potential for very high site densities around Searles Lake.

Thirty-four sites fall within the 600-foot corridor open to parking and camping. This number includes those already listed as bisected by the routes. Many of the routes in use today follow historic routes and the impact to the historic routes has not often been formally assessed. In many cases the historic routes have been obliterated by later use. About 100 miles of linear cultural resources (out of a total of 571 miles of linear cultural resources within the sub-region) match currently open routes.

Within the sub-regions, 36,013 acres within the four sub-regions have been identified as having high or very high sensitivity for cultural resources. Within these areas there are 284.3 miles of open route and 8908.54 acres of route corridor. Most of these routes have not been inventoried for cultural resources. Site densities from the California Desert Conservation Area Plan inventory averaged around 4.5 sites per square mile but are higher in some areas.

California Back Country Discovery Trail: Although routes identified for inclusion in the CBCDT have been incorporated into the West Mojave Plan, cultural resources inventory has not been carried out on the CBCDT as a whole within the Ridgecrest Field Office Area. Impacts from this trail cannot be assessed until the inventory has been conducted.

El Paso and Ridgecrest Subregions: Retention of the existing 1985-87 designations until completion of the El Paso Collaborative Access Planning Area process would continue existing impacts, in some cases severe, to properties listed in the National Register of Historic Places. The El Paso Mountains contain a 110-square-mile National Register district, the first listed National Register district in the California Desert, and a cultural resource ACEC.

The currently available GIS data shows five recorded National Register properties in the El Paso Mountains that are bisected by existing open routes of travel. These sites occur on routes EP-0155, 7101, 5146, 5151, 6231, 0238, 0421, 0471, and 0469. Some of the sites are bisected by or adjacent to more than one route. The five sites include a stone workshop/quarry with flakes, formed tools and groundstone; a temporary habitation/quarry/workshop with flakes, formed tools, millingstones, hearths, and a rock ring which is a possible dwelling foundation; a "large temporary campsite with pockets of midden exposed in the road", fire-affected rock (hearths), lithic scatter, and groundstone that is over 5000 meters square; and a temporary campsite with bedrock milling slicks, lithic scatter, and petroglyphs. One of these sites also contains historic mining materials. Most of the records for these sites indicate that presence of the route has caused damage to the site. Two additional sites containing midden, flake scatters, groundstone, and rock rings have recently been recorded inside the boundaries of the National Register district but have not been added to the GIS database. Existing open routes bisect both of these sites. At one of these sites erosion from vehicle tracks in the road is causing loss of soil and artifacts from the site. Routes, including EP-0226, 2143, and 4144, bisect several recorded sites in the vicinity of Sheep Spring, including two habitation sites with midden soils. The combination of high site densities and low inventory levels indicates that there are probably many more unrecorded sites that are bisected by routes.

GIS analysis identified 43 recorded archaeological sites that lie within the 600-foot corridor along open routes in which vehicle parking, camping, etc. are allowed. Nearly all of these sites are within the boundaries of the National Register district. Site densities from the CDCA Plan inventory averaged around four sites per square mile but are probably much higher in some areas and may be much higher in general throughout the El Paso Mountains. One sensitivity polygon contains 143 recorded sites. One hundred eighty-six open routes fall partially or completely inside high and very high sensitivity polygons, which are primarily within the National Register district. Most of these routes have not been inventoried for cultural resources. There are 247.6 miles of open route and 10,808 acres of open route corridor inside high/very high cultural resource sensitivity polygons, almost all of which are inside the National Register district. There are 440.8 miles of open route in the El Paso sub-region. This means that of the 31,156.98 total acres within the El Paso sub-region, 24,157.1 acres fall within 300 feet of an open route and are therefore subject to impacts from use of open routes and adjacent areas. These figures make it highly probable that a great deal more damage is occurring to National Register properties than has been formally identified. The above analysis does not include effects to archaeological resources from vandalism, artifact theft, and other types of activities that tend to occur along vehicle access corridors but these activities have been a continual problem in the El Paso Mountains for decades.

4.2.4.3.2 Effects Of Networks: Barstow Field Office

The Barstow Field Office area includes nine subregions for route designation. The following discussion summarizes those effects.

Afton Subregion: In the Afton Sub-region, nine routes intersect with several habitation sites, a village site, and the Mojave Road (SBR3033H/CHL963) a historic landmark.

Coyote Subregion: Approximately 84 routes intersect historic and prehistoric resources in this sub-region. Multiple lithic scatters, lithic reduction sites, stone alignments, road, lithic quarries, rock shelters (SBR7185, SBR2167), and habitation/cremations sites are present. There are also four significant sites, either historic landmarks or eligible for the National Register of Historic Places. These include the Mormon Trail (CHL577/SBR4411H), Boulder Transmission line (NRHP-E-SBR7694H), Borate-Calico Hills (CPHI-SBR54), and the Hoover Dam to Los Angeles transmission lines (NRHP-E-PSBR38H).

Bighorn Subregion: Three springs, rock art, pottery, habitation sites, and lithics characterize the cultural resources in this sub-region. Terrace Springs (SBR4038), Rattlesnake Spring (SBR4039), and a village near Old Woman Spring (SBR25) have open routes leading directly to them, and disturbance of cultural remains has occurred. Further degradation is likely should these route remain open. Sixteen routes intersect cultural resources in this region.

Granite Subregion: This sub-region contains various lithic scatters, lithic reduction sites, and trails. The most currently significant trail is the Mormon Trail (CHL577/SBR4411H). Additionally, the Boulder Dam to Los Angeles Power lines (NRHP-E-SBR7694H), a National

Register eligible property, are found in this area. Twelve open routes intersect, or run parallel to, cultural resources in the sub-region.

Juniper Subregion: Bureau of Land Management records indicate that no known cultural resources are directly impacted by open routes of Alternative A.

Newberry-Rodman Subregion: Twenty-two routes were found to intersect or parallel a variety of cultural resources. Impacted sites include the Boulder Transmission lines 1, 2, 3 (SBR7694H), rock shelters, rock art, lithic quarries, mining sites, and historic graffiti.

Ord Subregion: There are rock art sites, lithic scatters, habitation sites, and historic graffiti located within this sub-region. Alternative A route maps show seven routes that intersect these cultural resources.

Sleeping Beauty Subregion: Three National Register eligible properties are found in the Sleeping Beauty sub-region, the Mojave Road (SBR3033H/CHL963), the Hoover Dam to Los Angeles transmission lines (NRHP-E-PSBR38H), and the ATS&F Railroad (NRHP-E-SBR6693H). Other cultural resources in this area include village sites, road, railroad grades, lithic quarries, and rock shelters. Thirty-one routes intersect these prehistoric and historic resources.

Superior Subregion: Approximately sixty-six Alternative A routes intersect a variety of rock art sites, lithic reduction, scatter, and quarry sites, historic mining sites, camps, and an airplane crash site (SBR800H). Several National Register eligible properties are located here, including the Goldstone Historic Mining District (NRHP-E-[80-5]), a lithic scatter/town site (NRHP-E-SBR4347/H), and a historic power transmission line (NRHP-E-PSBR39H).

Implementation of Route Network: Rehabilitation/reclamation of routes that are designated closed and maintenance of routes that are designated open would affect archaeological resources along those routes and should not be undertaken until cultural resources inventories and evaluations have taken place

Cumulative Impacts: Cumulative impacts to cultural resources would be significant if there are adverse effects that cannot be resolved through consultation between the BLM, California State Historic Preservation Officer, other consulting parties, and Advisory Council on Historic Preservation, if the latter joins the consultation. Resolution of adverse effect may include measures that would avoid, minimize, or mitigate adversity. Mitigation may include archaeological data recovery and architectural recordation.

The total number of prehistoric/historic sites that are being affected by the open route network is unknown but certainly number in the hundreds, perhaps thousands, of sites. Most of these sites are being affected by routes designated during the 1985-87 route designation process, so the impacts have been occurring for a very long period of time. Since these routes would remain as open routes over much of planning area the impacts would occur under West Mojave

Plan implementation. Cultural resources are a finite and non-renewable resource. The loss is irrevocable. Opportunities for the public to view these sites in their natural surroundings and to experience the sense of exploration, adventure, and understanding that comes with observing them *in situ* are permanently lost. Our ability to provide educational and interpretive opportunities is decreased with the loss of each site or portion thereof. Prehistoric sites are repositories of cultural information about people who lived here into the far distant past and are of very great value and concern to Native American people today. Continued destruction removes pieces of our past on a daily basis.

4.3 ALTERNATIVE B: ENHANCED ECOSYSTEM PROTECTION

4.3.1 Air Quality, Soils and Water

Impacts would be as described for Alternative A, except as specifically noted below, for air quality in Table 4-8.

Table 4-8
Air Quality Impacts – Alternative B

ACTIVITY	POLLUTANT(S)	CHANGE DIRECTION	MAGNITUDE	TIME SCALE	LOCATION(S)	NOTES
Vehicle routes	PM_{10}	Decrease	Slight	Short & long term	Johnson to Stoddard Valley area	Due to elimination of vehicle corridor
Vehicle restrictions	PM_{10}	Decrease	Slight	Short & long term	Within biologically sensitive areas	Due to requirement for street legal vehicles.

4.3.2 Biological Resources

4.3.2.1 Natural Communities

The restriction within Alternative B of certain MAZ areas to street-legal vehicles would probably beneficially impact the most common creosote bush scrub and saltbush communities in those areas by preventing degradation of the surface by off-road travel.

4.3.2.2 Desert Tortoise

Excepting minor differences, Alternative B shares the same beneficial and adverse impacts associated with Alternative A, which for the most part, are not reiterated in Table 4-9.

Table 4-9

Tortoise Impacts of Alternative B (Enhanced Ecosystem Protection)

BENEFICIAL IMPACTS	ADVERSE IMPACTS
DROUGHT	
Motorized Vehicle Access ? Establishing vehicle use, quarantine areas in higher density tortoise areas during drought would serve to alleviate additional impacts to tortoises that are already physiologically stressed due to lack of water and poor nutrition	Motorized Vehicle Access
MOTORIZED VEHICLE ACCESS NETWORK	
? See Multiple Use Class and Drought sections above ? (AD-33) The closure of identified MAZs (see chapter 2) to all but street-legal vehicles would have a significant beneficial impact of prohibiting the types of vehicles most likely to drive cross-country (e.g., dirt bikes, dune buggies, etc.) from tortoise conservation areas. This would likely minimize impacts to tortoises, but be particularly important to habitats, which are less likely to be degraded if vehicles remain on roads.	? (AD-33) The intended function of restricting vehicle travel to street-legal vehicles would only be viable if increased law enforcement is present to enforce the new rule. Street-legal vehicles, including 4-wheel drive trucks

Alternative B necessarily places tortoise conservation and recovery as the highest priorities for land management. In comparing this alternative to Alternative A, Alternative B has both major advantages and neutral advantages. Establishing vehicle quarantine areas in higher concentration areas during drought would be substantially more protective, and significantly augment the limited number of things that can be done relative to drought. Restricting vehicle use to "street legal" vehicles in important habitat areas would also provide a major advantage over Alternative A.

4.3.2.3 Mohave Ground Squirrel

Alternative B would implement protective measures identified similar to those of Alternative A for both the tortoise and MGS, and is intended to provide for enhanced MGS conservation on both public and private lands. The analysis is meaningful, as most of the measures were identified for the tortoise, and this is an opportunity to see if enhanced tortoise protection would extend to the MGS. Table 4-10 reports only those beneficial and adverse impacts as they relate to MGS conservation that are different from the impacts identified under Alternatives A and C for the tortoise and MGS. As such, the programs listed above are not reiterated in the table.

Table 4-10
Mohave Ground Squirrel Impacts of Alternative B

BENEFICIAL IMPACTS	ADVERSE IMPACTS

Motorized Vehicle Access ? The motorized vehicle access network proposed for Alternative A would be implemented under Alternative D and have the same beneficial impacts identified above. ? (AD-33) Based on available data, requiring additional motorized vehicle access restrictions in the following MAZ's would predictably benefit MGS conservation: (a) Little Dixie Wash area: El Paso SS2, and the non-MAZ area north of the El Paso Mountains Wilderness Area, between Ridgecrest SS1 and El Paso SS2. (b) Cuddeback Dry Lake/Pilot Knob area: Red Mountain SS3 and SS4. And (c) Coolgardie Mesa/Superior Valley area: Superior SS3 and SS5. ? (AD-35) During periods of prolonged drought (lasting three or more years), the BLM would consider emergency route closures (generally referred to as "quarantine areas") in the following potential MGS concentration areas (would apply to the MAZs given above): (a) Little Dixie Wash area, between the Sierra Nevada and Ridgecrest/Inyokern; (b) Cuddeback Dry Lake/Pilot Knob area; (c) Coolgardie Mesa/Superior Valley area. ? Such quarantines would be lifted immediately following break of the drought, which would be identified by the Implementation Team in coordination with BLM, USFWS, and CDFG.	Motorized Vehicle Access ? (AD-33, AD-35) Closure of other areas would likely benefit MGS conservation, but there are insufficient data to determine where such areas may be located.

4.3.2.4 Bats

Impacts to bats under Alternative B would be as described for Alternative A.

4.3.2.5 Other Mammals

Impacts to the Mojave River vole and yellow-eared pocket mouse would be as described for Alternative A.

Impacts to bighorn under Alternative B would be essentially as described for Alternative A. Restriction on travel in the Newberry-Rodman MAZ area to street legal vehicles may have a small additional beneficial impact to bighorn.

4.3.2.6 Birds

For the following birds, impacts would be the same as described for Alternative A: Inyo California towhee, western snowy plover (nesting season only).

The following birds would receive a small additional benefit from Alternative B because of the restrictions within certain MAZ areas to street-legal vehicles only: golden eagle, prairie falcon.

The following birds would receive a substantial additional benefit from Alternative B because of the restrictions within certain MAZ areas to street-legal vehicles only: Bendire's thrasher, burrowing owl, LeConte's thrasher.

4.3.2.7 Reptiles

Impacts would be as described for Alternative A for the Panamint alligator lizard and San Diego horned lizard. Alternative B would be substantially more beneficial than Alternative A to the Mojave fringe-toed lizard because of the restrictions in certain MAZ areas to street-legal vehicles.

4.3.2.8 Plants

For the following plants, impacts would be the same as described for Alternative A: carbonate endemic plants, Charlotte's phacelia, Kelso Creek monkeyflower, Kern buckwheat, Little San Bernardino Mountains gilia, Mojave monkeyflower, Mojave tarplant, Red Rock poppy, Red Rock tarplant, Shockley's rock-cress, short-jointbeavertail cactus, triple-ribbed milkvetch, and white-margined beardtongue.

For the following plants, Alternative B would be substantially more beneficial than Alternative A because of the restrictions in certain MAZ areas to street-legal vehicles: Barstow woolly sunflower, crucifixion thorn, desert cymopterus, Lane Mountain milkvetch, Parish's phacelia.

4.3.2.9 Cumulative Biological Impacts

Alternative B would have fewer cumulative impacts to biological resources because of the restrictions on green sticker vehicles and the emergency closures in response to drought. These measures would reduce degradation of the habitat from off-road travel both during normal years and drought years.

When placed in context of other developments within the West Mojave, including increased land development, mining and increased recreational use of habitat lands that may cumulatively impact the habitat, the reduction in surface disturbance by the additional restrictions on vehicle use would be more beneficial than measures of Alternative A.

4.3.3 Recreation

Alternative B shares many of the same beneficial and adverse impacts on the motorized route network as Alternative A. Alternative B does have a number of unique management prescriptions that cause it to differ substantially from Alternative A. Some of these management prescriptions will affect the designated open motorized route network and various recreational and commercial opportunities that are dependent upon motorized access.

During periods of drought vehicle use quarantine areas would be established. These quarantine areas would be established with the intent of alleviating additional impacts to tortoises that are already physiologically stressed due to lack of water and poor nutrition. The precise impact of these quarantines upon vehicular use of the motorized route network and recreational and commercial activities is unpredictable, but is likely to be very profound. Both the length and geographical extent of the quarantine would be defined at the time the quarantine is imposed, which would be dictated by the severity and extent of the drought. The direct effects of this quarantine would be the lack of vehicular access to potentially vast areas. The indirect effects of quarantine are also likely to be profound, as major shifts in recreational activity would occur, resulting in a much more intensive and concentrated use of non-quarantine areas. This in turn could lead to increased visitor conflicts, route proliferation in these "spill over" areas and increased resource damage.

Under this alternative non-street legal or "Green Sticker" vehicles would be restricted from entering several Motorized Access Zones, due to the presence of sensitive tortoise populations or habitat. This would immediately reduce the number of recreational opportunities currently available to dune buggies, rails, quads, ATCs, and dirt bikes. As a result these vehicles would increasingly use areas outside of these restricted MAZs. This shift would tend to be from landscapes characterized by "bajadas and washes" to more mountainous terrains (i.e. with slopes greater than 20% slope and/or with elevations in excess of approximately 3500 feet). In addition, there is likely to be much more intensive and concentrated use of such "spill-over" areas as the Open Areas, the El Pasos, and portions of the Red Mountain and Fremont sub regions. This in turn could lead to increased visitor conflicts and route proliferation "spill over" areas.

4.3.4 Cultural Resources

Since the motorized vehicle access network would be the same as Alternative A, impacts would be the same as those identified in Alternative A.

4.4 ALTERNATIVE C: ENHANCED RECREATION OPPORTUNITIES

4.4.1 Air Quality, Soils and Water

Impacts would be as described for Alternative A, except as specifically described below.

4.4.1.1 Air Quality

The expanded motorized vehicle recreation proposed in Alternative E would result in increased emissions of particulate mater including PM_{10}. Estimates of emissions from this type of activity requires inputs on the number of additional miles traveled on unpaved roads, the type of vehicle and the speed of the vehicle in addition to the amount surface area exposed to wind

erosion. Estimates for most of these factors are not available. A rough estimate of the wind erosion emissions from the proposed Fremont Recreation Area can be derived from MDAQMD inventory data. They show the Spangler Hills Open Area has approximately 300 miles of roads. Using the MDAQMD average widths and emission factors, the Spangler Hills area could emit around 900 tons of PM_{10} per year as a result of wind erosion. As the Fremont Recreation Area's size is similar, comparable wind erosion figures could be expected. Additional emissions could be expected from vehicle travel on the additional open vehicle routes proposed.

Cumulative Impacts: Most of the proposed increased OHV activity and disturbed ground would occur within the Mojave Desert PM_{10} Federal Nonattainment Area. The activity would result in increased concentrations of PM_{10} in the atmosphere. The increased concentrations combined with the existing PM_{10} emissions in the Mojave Desert PM_{10} Plan Area could result in violations of NAAQS.

Significance: Alternative E would result in significant negative impacts on air quality. It could cause or contribute to new violations of the National Ambient Air Quality Standards, increase the frequency or severity of existing violations of NAAQS and/or delay timely attainment of the NAAQS. The activity does not conform to the applicable implementation plan (federal conformity). In addition, the MDAQMD significant thresholds for particulate Matter (PM_{10}) of 15 tons per year would be exceeded. It is unlikely that the expected impacts could be mitigated to less than significant.

Conformity Analysis and Conclusions: Federal conformity rules require that federal managers make a determination that a proposed activity conforms to the implementation plan and not cause or contribute to new violations of the NAAQS, increase the frequency or severity of existing violations of NAAQS and/or delay timely attainment of the NAAQS. Alternative E as proposed could not be approved because it does not conform and the impacts cannot be mitigated to conform or be reduced to less than significant.

4.4.2 Biological Resources

4.4.2.1 Natural Communities

Impacts to natural communities under Alternative C would be as described for Alternative A, except as follows:

?? A greater level of degradation to creosote bush scrub, saltbush scrub, desert wash scrub and Mojave mixed woody scrub would result from creation of the Fremont Recreation Area.

4.4.2.2 Desert Tortoise

Alternative C's impacts, insofar as they differ from Alternative A, are described by Table 4-11.

Table 4-11
Tortoise Impacts of Alternative C (Enhanced Recreation)

BENEFICIAL IMPACTS	ADVERSE IMPACTS
MOTORIZED VEHICLE ACCESS NETWORK	
Overall Importance ? Designating and implementing a motorized vehicle access network that is supported by land use laws and compatible with tortoise recovery would be substantially more important if this alternative is to function to minimize and mitigate impacts	Overall Importance
Route Reductions in Specified Regions ? Within *higher density areas*, the network would result in the closure of 313 linear miles of routes (out of 727 linear miles), which is a 43% reduction of routes in this area. This would have immediate and long-term benefits where tortoises are most abundant ? Within *lower density areas*, the network would result in the overall reduction of 488 linear miles of routes (out of 1,332 linear miles), which is a 37% reduction of routes in this area. This would have immediate benefits to habitat and long-term benefits to overall conservation ? Within *above-average vehicle disturbance areas*, there are a total of 353 linear miles of existing routes, 156 linear miles (44%) of which would be closed.	Route Reductions in Specified Regions ? The remaining 414 linear miles of open routes (57% in area) in *higher density areas* would continue to result in impacts, and put tortoises in harm's way in the places where they are most likely to be adversely affected ? The remaining 844 linear miles of open routes (63%) in *lower density areas* would continue to result in impacts to the few remaining animals, which are critical for re-establishing reduced or extirpated populations ? The remaining 197 linear miles within *above-average vehicle disturbance areas* (56%) would remain open and continue to put tortoises in harm's way where traditional vehicle impacts are shown to be most prevalent
RECREATION ACTIVITIES	
Competitive "C" Routes in Spangler Hills	Competitive "C" Routes in Spangler Hills ? "C" Routes are associated with the Spangler Hills Open Area, were used for competitive events originating and ending in the open area but extending into adjacent areas, and became no longer available as a result of the recent settlement between the BLM and Center for Biological Diversity. Reopening these routes will result in impacts both inside and outside the open area

Creation of New Fremont Recreation Area ? 53 mi^2 of Class L lands would be converted to Class M, which would result in relatively more impacts, but not as severe as would occur if the area was newly designated as Class I (the status of official BLM open areas) ? Although establishing the new recreation area would constitute a significant impact (see right column), impacts would be relatively less significant than if the area were being designated as an Open Area	Creation of New Fremont Recreation Area ? Creating the new Fremont Recreation Area on 53 mi^2, all of which is critical habitat, would constitute a significant adverse impact, more so to essential habitat than to resident tortoises, which are largely extirpated from the region; although no higher density tortoise areas would be affected, there are also no higher density human use areas (excepting areas around the south part of Cuddeback Lake, east of Fremont Peak), so much of the habitat is relatively undegraded ? The new recreation area designation would result in concentrated and elevated vehicle use that would not be compatible with tortoise recovery, and would result in degradation of critical habitat ? Severity of impacts would be dependent on authorized and restricted uses given in the recreation area management plan to be prepared for the area. If the management plan allows for off-road travel adjacent to the route instead of restricting vehicles to the racecourse route, for example, the impacts would be relatively more severe. In either case, the new recreation area would receive more vehicle use and result in more cross-country travel, litter and garbage (with a likely increase of ravens), camping, and other activities that would adversely affect tortoises and habitat ? Relatively more approved routes would have a concomitant level of impact to tortoises and habitat than if fewer routes were designated as open

4.4.2.3 Mohave Ground Squirrel

Similar beneficial and adverse impacts given for the tortoise and/or MGS in Alternative A would affect motorized vehicle access. Table 4-12 reports only those beneficial and adverse impacts as they relate to MGS conservation that are different from the impacts identified under previous alternatives for the MGS and tortoise.

Table 4-12
Mohave Ground Squirrel Impacts of Alternative C

ALTERNATIVE E – ENHANCED RECREATIONAL OPPORTUNITIES	
BENEFICIAL IMPACTS	ADVERSE IMPACTS
Recreation *Existing Open Areas and New Recreational Areas* ? (AE-6) Although establishing the Fremont Recreation Area would constitute a significant adverse impact (see right), the impacts would be concomitantly more severe if the recreation area were being designated as an open area.	Recreation *Existing Open Areas and New Recreational Areas* ? (AE-6) The newly established Fremont Recreation Area would occur fully within the MGS range and promote cross-country travel and OHV impacts over 53 mi^2 and adjacent areas. ? (AE-6) Changing class L to class M, allowing for competitive events, increased camping, and emphasizing vehicle access by allowing for a denser network of trails, etc. would all promote uses that result in habitat degradation (likely) and loss of animals (less likely).

4.4.2.4 Bats

Impacts from Alternative C would be as described for Alternative A.

4.4.2.5 Other Mammals

Impacts on bighorn sheep, the Mojave River vole and the yellow-eared pocket mouse would be as described for Alternative A.

4.4.2.6 Birds

Burrowing owls would be vulnerable to a potential for increased impacts from recreation. The magnitude of these impacts is unknown. Le Conte's thrashers would experience increased disturbance to occupied habitat.

Impacts on all other birds would be as described for Alternative A.

4.4.2.7 Reptiles

Impacts on unlisted reptiles would be as described for Alternative A.

4.4.2.8 Plants

Impacts would be as described for Alternative A for the all covered plants species except those discussed below.

Barstow Woolly Sunflower: One primary motorcycle route would pass through the center of the Barstow woolly sunflower conservation area. Location of this enduro corridor here would increase the risk of damage to plants, in the event riders strayed from the route.

Desert Cymopterus: A known population of the desert cymopterus is located to the northeast of Cuddeback Lake. This is overlaps the proposed Fremont Recreation Area, a region proposed for higher-density motorized vehicle access. Although this would not be a new open area, a higher risk of damage exists from inadvertent straying off of designated routes by off-road vehicles.

4.4.3 Recreation

Alternative C shares many of the same beneficial and adverse impacts on the motorized route network as Alternative A. Alternative B does have a number of unique management prescriptions that cause it to differ from Alternative A. Some of these management prescriptions will affect the designated open motorized route network and various recreational and commercial opportunities that are dependent upon motorized access.

Competitive "C" routes would be re-established in the Spangler Hills. This would expand opportunities for those forms of competitive motorcycle recreation afforded by these routes. A Fremont Recreation Area would also be established. The net impact on the designated open motorized route system would be negligible in that the same open route system designated in Alternative A would be utilized in this area. The net impact on recreational opportunity would probably be negligible in the short term, but more substantial in the long term in that the designation of the area as a Recreation Area would give some surety into the future that this area would be managed primarily for the recreational opportunities and resources. Recreational use of the area could increase as this fact became more widely known due to the Recreation Area designation.

4.4.4 Cultural Resources

Expansion of the Spangler Hills Open Area would expose archaeological resources on these acres to uncontrolled vehicle use. The CDCA Plan inventory data indicated that site densities in this area average around 4.5 sites per square mile. A decision to open this area would require inventory of the expansion area and mitigation of impacts to affected cultural resources. It would result in loss of any significant resources in the area. Lack of inventory precludes more detailed description at this time. Similar impacts and requirements for inventory and mitigation would apply to the establishment of a Fremont Recreation Area near Cuddeback Lake. Establishment of a corridor for enduro events would impact cultural resources in the corridor but without a specifically identified route the nature and extent of such impacts cannot be predicted. Since this alternative would use the motorized vehicle access network described in Alternative A those impacts would be the same.

4.5 ALTERNATIVE D: NO ACTION

4.5.1 Air Quality, Soils and Water

Air Quality: The No Action alternative would not result in any changes in current air quality or future trends. Future management actions would be guided by existing management plans, rules and policy that are restrictive on most of the activities that have the potential to emit pollutants on BLM lands. Future activities would be subject to the current air quality rules and emission control requirements. The SIPs all are required to show attainment of the NAAQS. All of the PM_{10} nonattainment areas except for Owens Valley have met requirements to be reclassified by the USEPA to a Maintenance status. Owens Valley is projected to achieve attainment by 2006.

4.5.2 Biological Resources

4.5.2.1 Natural Communities

Adverse impacts of the No Action Alternative to natural communities within the West Mojave Plan fall into three categories:

1. Fragmentation
2. Degradation
3. Substantial loss or modification of rare community types.

The existing large blocks of creosote bush scrub and saltbush communities would be subject to fragmentation over time, although the magnitude of these impacts from use of dirt paths and roads is unknown.. The mountain foothill vegetation consisting of relatively large blocks of pinyon pine woodland, juniper woodland, Mojave mixed woody scrub and chaparral communities would not be affected by Alternative C ecause of the private land ownership.

Degradation of the natural communities by recreational use is a predicted consequence of the No Action Alternative. Without route designation on public lands, gradual degradation of natural communities would proceed without restraint.

The rare and unique communities like native grassland, mesquite bosque, montane meadow and some Joshua tree woodlands are the most at risk. Their small size makes the proportional impacts of fragmentation and degradation larger. Existing designations would probably adequately protect valuable and limited natural communities like riparian woodland, riparian scrub, alkali seeps and springs and fan palm oases.

Certain smaller communities without major threats, such as playas, desert holly scrub, some dune communities, blackbush scrub and blue oak woodland would continue in a productive state.

4.5.2.2 Desert Tortoise

Alternative D, the No Action alternative, would result in no changes to current management. There are still new data and information that could be used by the BLM, USFWS, CDFG, and private jurisdictions that could help fine-tune current management, and some of these are suggested, but for the most part, there would be no changes. Beneficial and adverse impacts associated with the No Action alternative are addressed in Table 4-13.

Table 4-13
Tortoise Impacts of Alternative D (No Action)

BENEFICIAL IMPACTS	ADVERSE IMPACTS
DROUGHT	
Motorized Vehicle Access ? BLM would still be obligated to implement a designated route network, which is the single most effective measure to alleviate human impacts during time of drought, particularly to minimize vehicle use in and alongside washes. As such, there would still be the closure of 117 of 177 linear miles (66%) of routes identified as occurring within washes in areas recommended by the West Mojave Plan as Desert Wildlife Management Areas, which generally correspond to tortoise critical habitat. There are certainly more than 177 linear miles of washes, however, since route use would be restricted to only those routes that are designated as open, washes that are not included would not be available for vehicle use, which would be a very significant beneficial impact. ? Route reductions in higher density tortoise areas would serve to alleviate human-induced stresses during drought periods	Motorized Vehicle Access ? Alternative would fail to close 60 linear miles (34%) of roads that coincide with washes
MOTORIZED VEHICLE ACCESS NETWORK	
Overall Importance ? Designating and implementing a motorized vehicle access network that is supported by land use laws and compatible with tortoise recovery is the single most important management action that could be implemented to minimize the widest variety of known human impacts. The BLM is obligated by the CDCA Plan to identify and implement this network in the absence of the WMP, which is significant beneficial impact ? See Alternative A and B for beneficial impacts	Overall Importance ? See Alternative A and B for adverse impacts
TRANSPORTATION	

4.5.2.3 Mohave Ground Squirrel

Impacts of Alternative D would be as described for Alternative A.

4.5.2.4 Bats

The known significant roosts on public lands (BLM and NPS) would probably remain

intact, but would be at risk from human disturbance. The extreme sensitivity of these sites during the maternity or hibernation periods makes this risk biologically unacceptable.

4.5.2.5 Other Mammals

Bighorn Sheep: Because bighorn are primarily a wilderness species within the West Mojave, impacts are not anticipated to be adverse or significant, especially in the short term.

Mojave River Vole: Alternative D would have no affect on this species, which is found entirely on private land.

Yellow-eared Pocket Mouse: Threats to yellow-eared pocket mouse are few, and information about its numbers and precise distribution is inadequate to accurately predict the future. Most known sites within the known range are protected as public land Wilderness or ACECs. Even with no action, few adverse impacts are expected to this species overall.

4.5.2.6 Birds

Bendire's Thrasher: The No Action Alternative would have an adverse effect on this vehicle-sensitive bird, especially in the Coolgardie Mesa occupied habitat.

Burrowing Owl: Alternative D would provide no benefit to the burrowing owl, which can be easily disturbed by vehicles near nest sites, where it reacts to the loud noises or excessive motion. Single passes from one car, 4WD or truck normally have little, if any affect on the birds. Taking no action would perpetuate the risk of nest site loss due to disturbance at nest sites throughout the lower elevations of the West Mojave.

Golden Eagle: A few golden eagle nest sites would remain vulnerable to vehicle disturbance during the nesting season with the No Action Alternative. Future increased recreational use of remote mountainous areas might increase the potential for disturbance to nest sites. This would constitute a small adverse impact to this raptor

Inyo California Towhee: Impacts detected in the past to Inyo California towhee from vehicle traffic and access to sensitive habitat for camping and riding, including hill climbs adjacent to Austin Spring, have been corrected by the BLM and volunteers who have constructed barriers and delineated parking and camping locations. No effect, either beneficial or adverse to this threatened bird would result from adoption of Alternative D.

LeConte's Thrasher: The range and occupied habitat for LeConte's thrasher would continue to become fragmented without positive steps to establish large, contiguous habitat blocks. Without a route network for public lands, disturbance to LeConte's thrasher in the nesting season would continue, and probably increase. The No Action Alternative would be adverse to this species.

Prairie Falcon: The No Action Alternative would probably have no adverse affect on the overall number of prairie falcons in the West Mojave. Loss of a few occupied territories is expected. Most nest sites are in rugged terrain, often in designated Wilderness, and existing threats to the prairie falcon from recreation disturbance are minimal.

Western Snowy Plover: The Western snowy plover is very site-specific in nesting habitat requirements. Ongoing efforts at conservation, including strict control of access duting the nesting season, would continue at Searles Lake and Harper Dry Lake. However, the No Action Alternative would most likely result in increased recreation on and adjacent to playas supporting potential or undetected nest sites, resulting in a moderate adverse impact to the species.

4.5.2.7 Reptiles

Impacts would be as described for Alternative A, except as noted below.

Mojave Fringe-toed Lizard: Vehicle disturbance on occupied habitat of the Mojave fringe-toed lizard is detrimental to this species because of direct mortality, spread of weeds onto the habitat, and damage to the soils and perennial plants. The No Action Alternative would continue the trend of gradual habitat degradation at several sites, detailed below.

Habitat at Pisgah Crater would become more degraded by surface disturbance in the long term. Route proliferation is evident in this area within the occupied and suitable habitat.

Fringe-toed lizards along the Mojave River east of Barstow, including the Manix ACEC would continue to be conserved in an acceptable, though not beneficial, manner.

The population at the Cronese Lakes ACEC would not be affected by the No Action Alternative.

The population on the west slope of Alvord Mountain would continue to receive adverse impacts from the proliferation of existing routes within the occupied and potential habitat.

Suitable habitat at El Mirage and northest of Harper Lake would continue to receive a moderate level of adverse impacts from vehicle disturbance. The effect on the fringe-toed lizards (if any) at these locations is unknown.

The Mojave fringe-toed lizard is not seriously threatened throughout its range. Outside the West Mojave thirteen additional locations support this species, and threats at these sites are minimal. Some are protected within the Mojave National Preserve and Death Valley National Park. Taking no action on route designation would not adversely impact the species as a whole, but might reduce the numbers or degrade the habitat of distinct isolated populations. Some evidence exists for genetic differentiation among the populations at Alvord Mountain, Dale Lake and Pisgah Crater, so loss of any one of these populations could represent a substantial loss of

genetic diversity within the species.

Panamint Alligator Lizard: Impacts of the No Action Alternative on the Panamint alligator lizard would be negligible, as described for the Inyo California towhee.

San Diego Horned Lizard: The eastern and western habitat blocks for this species are very different within the West Mojave. From Cajon Pass to Palmdale, no substantial adverse impacts to San Diego horned lizard would result from adoption of the No Action Alternative because this species is found primarily on private land and its habitat is entirely outside any route designation polygons. The scattered BLM parcels within suitable habitat of the San Gabriel Mountains foothills may support this species, but are not in areas where route designation is likely. Because the policy of minor realignment would not necessarily be in place, a slight negative impact compared to Alternatives A, B and C would result if this lizard were found in the future on these parcels.

Between Cajon Pass and Joshua Tree National Park, failure to perform route designation in the Juniper and Bighorn subregions would be adverse to the horned lizard compared to Alternative A

4.5.2.8 Plants

Barstow Woolly Sunflower: Although specific threats to the Barstow woolly sunflower are few, the fragmentation and degradation of its habitat by widespread off-highway travel is a long-term problem. The No Action Alternative would preclude addressing the vehicle-based impact within the entire range of this West Mojave endemic. Alternative D is adverse both from the occasional direct vehicle impacts and from the long term indirect impacts of weed invasion, disruption of the specific soil conditions necessary for growth, and fragmentation of populations and habitat.

Carbonate Endemic Plants: Completion of the Carbonate Habitat Management Strategy (CHMS) is assumed to be part of the No Action Alternative. This document would become agency guidance for federal actions on these four listed species and receive a separate Biological Opinion. The CHMS does not address route designation within the carbonate habitat. Without management of travel on the existing routes that traverse critical habitat adverse modification to the critical habitat is more likely. This is because the very small range of the carbonate endemic plants, combined with the mining impacts already present, requires that all disturbances to remaining occupied habitat be carefully controlled. The No Action Alternative is not a viable option for the carbonate endemic species, even assuming increased attention from the CHMS. Affects of the No Action Alternative would be at least moderately adverse to these species.

Charlotte's Phacelia: Lack of threats to Charlotte's phacelia make impacts of the No Action Alternative the same as Alternative A.

Crucifixion Thorn: Because threats to crucifixion thorn from vehicle recreation are few, the numbers and habitat for this species are expected to remain stable under the No Action Alternative. Compared to Alternative A, adverse impacts would be worse, due to the retention of unnecessary routes crossing habitat near Pisgah Crater.

Desert Cymopterus: Positive conservation action is needed to prevent declines of desert cymopterus on public and private land within the West Mojave outside Edwards AFB. Without consolidation of existing routes into a network based on avoidance of this species, habitat and numbers of desert cymopterus would be impacted in the future. The No Action Alternative would not provide the benefits of route reduction in the Fremont, and Superior subregions, and would have an overall adverse impact on the species.

Kelso Creek Monkeyflower: Threats are not apparent to Kelso Creek monkeyflower on public lands, but this narrow-range plant is vulnerable to even small land-use changes, such as increased off road travel. No adverse impacts to the species are expected from the No Action Alternative, but continued surveys of the identified suitable habitat on public land and monitoring of occupied habitat are necessary to insure the known populations remain stable.

Kern Buckwheat: Small areas of existing populations of Kern buckwheat are being impacted by vehicle and trail use near Sweet Ridge in the Middle Knob area. Without restoration efforts, the numbers of this extremely restricted West Mojave endemic plant would continue to decline. In addition, off-road intrusion onto the clay soil habitat has damaged one significant population and this could continue without placement of rock or bollard barriers at the edge of the open route. The No Action Alternative would lead to eventual loss of numbers and area of habitat for this species. This species currently meets the definition of rare under state law. Without positive conservation measures, Kern buckwheat could become listed as threatened or endangered in the future. The No Action Alternative would have adverse impacts on the species.

Lane Mountain Milkvetch: Threats from vehicle recreation to Lane Mountain milkvetch are mostly indirect, but cumulative impacts to the occupied habitat require that implementing measure of the Designation Project be undertaken. These include signing, obliteration of certain routes, designation on acquired lands and potentially fencing along routes to prevent off road travel. The No Action Alternative would provide no habitat protection and would have substantial adverse impacts to this species.

Little San Bernardino Mountains Gilia: No adverse impacts to Little San Bernardino Muntains gilia would result from adoption of the No Action Alternative because this species is not known from federal lands and its habitat is mostly outside any route designation polygons. The scattered BLM parcels within suitable habitat north of Joshua Tree National Park may support this species, but are not in areas where route designation is likely. Because the policy of minor realignment would not necessarily be in place, a slight negative impact compared to Alternatives A, B and C would result if occurrences of this plant were found in the future on these parcels.

A small likelihood of negative impact to potential habitat would occur without the

designation in the Copper Mountain MAZ.

Mojave Monkeyflower: The No Action Alternative would be adverse compared to Alternative A in the Dagget Ridge and Azucar mine areas, where the existing network of redundant routes and routes in washes would continue to place small harmful impacts to existing populations and suitable habitat. Without an education and enforcement program, route proliferation and off road travel would be more likely in the Brisbane Valley as well, potentially damaging occupied habitat on publilc lands.

Mojave Tarplant: Lack of threats to Mojave tarplant make impacts of the No Action Alternative the same as Alternative A, except that the policy of minor realignment probably could not be applied in the future to newly detected populations.

Parish's Phacelia: Unregulated travel on the small playas is a potential threat of fairly high risk. Such travel would lead to degradation of the habitat, and substantial loss of plants if it occurred in the growing season. Alternative D would have an adverse affect on this species in the long term, because some implementing measures, such as signing and enforcement, are necessary to provide minimal protection.

Red Rock Poppy: Protection of this species relies on management of Red Rock Canyon State Park. No adverse impacts are expected to the species as a whole from Alternative D. Without route designation in the El Paso Mountains, the occurrences outside the state park boundaries could be negatively impacted. This is relatively unlikely because travel within Mesquite Canyon does not normally stray onto occupied habitat.

Red Rock Tarplant: Protection of this species relies on management of Red Rock Canyon State Park. No adverse impacts are expected to the species as a whole from Alternative D. Without route designation in the El Paso Mountains, the occurrences outside the state park boundaries could be negatively impacted. This is relatively unlikely because travel within Last Chance Canyon does not normally stray onto occupied habitat.

Shockley's Rock Cress: Impacts to Shockley's rock-cress would be similar to those of the No Action Alternative for the carbonate endemic plants.

Short-joint Beavertail Cactus: No adverse impacts to short-joint beavertail cactus would result from adoption of the No Action Alternative because this species is not known from federal lands and its habitat is entirely outside any route designation polygons. The scattered BLM parcels within suitable habitat of the San Gabriel Mountains foothills may support this species, but are not in areas where route designation is likely. Because the policy of minor realignment would not necessarily be in place, a slight negative impact compared to Alternatives A, B and C would result if occurrences of this plant were found in the future on these parcels.

Triple-ribbed Milkvetch: No identifiable impacts to triple-ribbed milkvetch would result from adoption of the No Action Alternative. However, the risk of damage to undetected

populations in washes of the San Bernardino Mountains would increase without route designation. The policy of minor realignment could not necessarily be implemented if occurrences of this endangered plant were found in the future adjacent to open routes.

White-margined Beardtongue: No substantial adverse impacts to the disjunct populations of white margined beardtongue are expected from the No Action Alternative because threats to this species from vehicle recreation are few. Compared to Alternative A, adverse impacts would be worse, due to the retention of routes crossing wash habitat near Pisgah Crater and to the increased potential for off road travel in the large washes south of the Cady Mountains.

4.5.2.9 Cumulative Biological Impacts

The No Action Alternative would continue the pattern of off road travel on redundant and parallel roads, roads in washes, and roads passing through rare plant communities, occupied habitat for sensitive species, and designated critical habitat for listed species. Cumulatively, an excess of routes through habitat leads to slow degradation of the plant communities and overall ecosystem. Weedy species invasion is one aspect of habitat degradation that can be attributed to routes of travel. As new linear corridors are created, weeds invade further into natural blocks of habitat. Certain plant species, including Barstow woolly sunflower and Little San Bernardino Mountains gilia, are intolerant of weeds and may show declines in numbers and local range. Other animal species, including the desert tortoise, cannot receive the high nutritional value present in native annuals when the only available forage is weeds.

Another aspect of degradation is the potential for increased off road travel. Without an education and enforcement program, and signing of open routes, the public will continue under the impression that off road travel is allowable anywhere it is possible (outside wilderness and established ACECs). Desert washes and desert playas in particular are likely to receive increased use and consequent degradation, given the demand for increased recreation in the West Mojave.

Excessive routes and trails may also cause fragmentation of habitat, though the magnitude of this impact is not well documented for dirt roads and single-track routes. Nearly all animal species can easily cross dirt routes of travel. Some plant species may encounter barriers to seed dispersal of segmentation of populations because of dirt roads and tracks. One aspect of fragmentation is the disturbance factors that reach farther into the interior of habitat blocks, which can affect vehicle-sensitive animals such as the burrowing owl, and LeConte's thrasher.

Considering these aspects of degradation and fragmentation, the No Action Alternative has a moderate cumulative adverse impact on biological resources.

4.5.3 Recreation

Alternative D, which would not result in any changes to current management, is substantially different from Alternative A. It would maintain the existing 1985-87 motorized vehicle access network in all areas, including the nine subregions that were revised for Alternative

A. While the existing network meets most access needs in more remote, less heavily used areas such as Inyo County and the Cady Mountains, the design of the network does not necessarily meet public needs in the more heavily used public in the southwestern portion of the western Mojave Desert.

The 1985-87 network is, by and large, utilitarian. It tends to be composed of long, straight routes connecting destinations, such as powerline roads. The network provides relatively little opportunity for OHV touring, that is, routes that are designed to enhance the enjoyment of the ride and the recreation experience. Touring routes tend to follow more rugged terrain, provide loops, and have serpentine rather than straight alignments. The routes often do not deviate to popular destinations, such as camping areas, overlooks and historic sites. Many of the 1985-87 routes lead to dead ends. And the network provides little in the way of challenging, technical four wheel drive routes.

The existing network entirely ignores motorcycle routes and recreation. In fact, few single-track routes were either inventoried or designated. It provides fewer opportunities for popular motorcycle tours, camping areas and other traditional activities than Alternative A.

The current network is not seamless; rather, it is composed of different components designed years apart, and the routes in any given two components (such as an ACEC network and a portion of the 1985-87 network) do not necessarily match at the boundaries. This problem is especially pronounced around the Black Mountain ACEC, where many routes simply do not connect with routes in the adjacent Fremont subregion. Other problem areas included the northern boundary of the Black Mountain ACEC and the Superior subregion, and the southern and eastern boundaries of the Rainbow Basin ACEC. Many minor “clean-up” problems exist elsewhere.

Finally, the 1985-87 inventory was, by the standards of the 2002 inventory, relatively crude. Routes were not recorded using GPS equipment (which didn’t exist at that time), motorcycle trails were not accounted for, and the resources and time available to field staff were comparatively limited. As a result, the network was designed with less knowledge of the nature of the routes and the destinations access was to serve.

The following is a brief discussion of the effectiveness of the existing network in each of the nine subregions for which new designations are proposed by Alternative A. The discussion addresses these areas because they are the public lands that receive some of the highest levels of visitor use and have significant resource conflicts.

?? **Coyote:** This is a lightly used area, with little motorcycle use. Most routes designated by the current network serve mining and commercial needs and utility maintenance. The network was not designed to serve recreational demands, so it is not particularly effective in providing access to popular rock hounding sites in Alvord Mountains. Its many long, linear routes provide limited opportunity for general touring, and tend to be destination oriented or lead to dead ends.

?? **El Mirage:** The existing network offers very little in way of web of routes, in an area where a lack of a defined network has encouraged trespass riding on private property. Little general touring or connectivity is designed into the existing system, particularly in the Shadow Mountains, where the network is utilitarian but does not encourage, for example, enjoyable jeep touring.

.

?? **Fremont:** The current network is particularly flawed in that it ignores what is considered to be one of most popular off highway vehicle areas, the region just north of Fremont Peak and the Gravel Hills. A location known as Hamburger Mill, just north of Fremont Peak, has traditionally been a very popular area for motorcycle groups to camp and tour. It is very popular with families, for it offers a wide variety of topography and trails demanding a broad spectrum of skills, from novice to highly technical. Large groups tend to congregate here. The current network doesn't provide any access in this area other than broad, four-wheel drive routes; few if any of the popular motorcycle touring routes in this area and through the Gravel Hills are open. Campsites northeast of Fremont Peak, long used by OHV groups, are particularly affected. Finally, the existing network provides poor access in the Black Mountain area.

?? **Juniper:** The current network suffers from many redundant routes. While it addresses most recreation needs, it does not meet current demands for a seamless interface with United States Forest Service route networks.

?? **Kramer:** This region has many old motorcycle trails dating from many decades ago. The failure to leave some of these open is particularly important in the Iron Mountains, where the current network provides utilitarian access to mines and other facilities via well-graded routes but does not provide opportunities for OHV touring. The Iron Mountains are a popular area for rockhounding, exploring historic mines, and camping, and a demand for recreation-focused routes exists and is not satisfied by the existing network. Similarly, the Kramer Hills are historically popular with rockhounders, target shooters and motorcylists. The current network provides many two-track routes but no single-track routes. Finally the region as a whole lacks long range touring routes and single-track connectivity.

?? **Middle Knob:** Since the existing network was designated, considerable windfarm development has occurred in the surrounding area. The design of the network does not take these developments into account, insofar as providing a recreation experience in this environment is concerned. The current network was not designed with the needs of private property owners in mind (that is, ensuring a minimum of conflicts between recreationists and property owners).

?? **Newberry-Rodman:** This area known for rockhounding. The existing network does not ensure nearly as much access to these popular rockhounding areas as the demand warrants; rather, the network tends to be utilitarian rather than recreational in focus. There is a lack of short loops, and no provision for motorcycles (although motorcycle use

of this subregion is not nearly as common as elsewhere). The current network is not as effective as it could be in preventing conflicts between recreationists and livestock grazing.

?? **Red Mountain:** This is a very important motorcycle recreation area. The current network is particularly lacking in providing for this, in part because the 1985-87 inventory did not address single-track routes. The 1985-87 effectively curtails quality motorcycle recreation experience, since the network is composed primarily of two-track and graded routes. The network lacks routes in rougher terrain around Red Mountain itself, other than in the form of utilitarian access to commercial mines and facilities. The network tends to be valley and bajada – focused, and directs visitors towards areas they can't access, such as the Grass Valley wilderness.

?? **Superior:** 85 deficient in 2 track terrain opportunities, particularly in northwest quadrant of superior subregion. This is a very dispersed area, unlike hamberger mill – camping down by Rainbow Basin, Opal Mtn, a few other areas. And some routes just disappear into Fort Irwin expansion area. Draws people into Superior Valley, the expansion area, and the Water Valley (tortoise hotbead) rather than sending them elsewhere

4.5.4 Cultural Resources

On-going impacts to cultural resources from the existing route network would continue at existing levels, much of which is described in Alternative A. In some areas, impacts from existing routes are severe and significant resources are being degraded or completely lost.