

West Mojave (WEMO) Route Network Project Final Supplemental Environmental Impact Statement



California Desert District, California



Estimated Lead Agency Total
Costs Associated with Developing
and Producing This SEIS
\$2.1 million

The BLM manages more land – 253 million acres – than any other federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western States, including Alaska. The Bureau, with a budget of about \$1 billion, also administers 700 million acres of subsurface mineral estate throughout the nation. The BLM’s multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM/CA/DOI-BLM-CA-D080-2018-0008-EIS

Abstract

Lead Agency: U.S. Department of the Interior (DOI), Bureau of Land Management (BLM)

Type of Action: Administrative

Jurisdiction: San Bernardino, Inyo, Kern, Riverside, and Los Angeles Counties, California

Abstract: The West Mojave Route Network Project (WMRNP) and Final Supplemental Environmental Impact Statement (SEIS) describe and analyze alternatives for the planning and management of a transportation and travel network and livestock grazing on public lands and resources within the West Mojave Planning Area, and administered by the BLM, California Desert District Office. The West Mojave Planning Area is located in southern California, in the northwestern third of the California Desert Conservation Area, and comprises approximately 9.4 million acres of land. Within the Decision Area, the BLM administers approximately 3.1 million acres of public lands.

Through this Land Use Plan (LUP) Amendment, the BLM is amending the 2006 West Mojave (WEMO) Plan to address specific issues raised in a federal court partial remand of the 2006 WEMO Plan and to consider new data and policies, emerging issues, and changing circumstances that have occurred since the 2006 WEMO Plan Record of Decision was signed. Many aspects of the 2006 WEMO Plan, developed as a habitat conservation plan to address sensitive species management, were kept in place. As part of the LUP revision process, the BLM conducted public comment periods to solicit input from the public and interested agencies on the nature and extent of issues and impacts to be addressed in the Final LUP Amendment and Final SEIS. Planning issues identified for this WMRNP Plan Amendment focus on transportation access for the public, commercial users, residents, recreational use, impacts on sensitive resources, and livestock grazing management within the West Mojave Planning Area.

To assist the agency decision maker and the public in focusing on appropriate solutions to planning issues, the Final SEIS considers five Plan Amendment alternatives.

Alternative 1 is a continuation of current management (No Action Alternative). Under this alternative, the BLM would continue to manage the use of and access to public lands and resources, including livestock grazing, under the California Desert Conservation Area (CDCA) Plan, as amended by the 2006 WEMO Plan and the 2016 Desert Renewable Energy Conservation Plan (DRECP). **Alternative 2** emphasizes protection of physical, biological, and heritage resources, while providing for the smallest transportation and travel network focused on through-access, and the most limited acreage and forage allocation dedicated to livestock grazing, comparatively. **Alternative 3** provides for the most extensive transportation and travel network focused on enhanced recreational and touring opportunities. **Alternative 4**, limits changes to the 2006 WEMO Plan to respond to community-identified enhancements and Court issues, with the least amount of changes to the transportation and travel network. **Alternative 5**, is the Proposed Action Alternative and the final agency decision, and indicates the agency's preference, which is a revised Alternative 4 route network. Alternative 5 considers the recommendations of cooperating agencies, the public, and BLM specialists and reflects the best combination of decisions to achieve BLM goals and policies, meet the purpose and need, and address the key planning issues.

When completed, the Record of Decision (ROD) for the LUP Amendment will provide comprehensive long-range decisions for (1) managing transportation and travel management resources in the West Mojave Planning Area and (2) identifying allowable livestock grazing management uses on BLM-administered public lands. Protests are accepted for 30 days and a Governor's Consistency Review for 60 days following the date on which the U.S. Environmental Protection Agency publishes the Notice of Availability for this Proposed Land Use Plan Amendment and Final SEIS in the *Federal Register*. The process for filing a protest can be found and submitted electronically using the WMRNP ePlanning website at: <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=93521>.

Protests may also be submitted by mail to:

U.S. Postal Service Mail: BLM Director (210), Attention: Protest Coordinator, WO-210, P.O. Box 71383, Washington, DC 20024-1383.

Overnight Delivery: BLM Director (210), Attention: Protest Coordinator, WO-210, 20 M Street SE, Room 2134LM, Washington, DC 20003

West Mojave Route Network Project
Final California Desert Conservation Plan
Amendment
and
Supplemental Environmental Impact
Statement
for the
California Desert District

April 2019

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

California State Office
2800 Cottage Way, Suite W1623
Sacramento, CA 95825
www.blm.gov/california



Dear Reader:

Enclosed is the Proposed Land Use Plan Amendment (LUPA) and Final Supplemental Environmental Impact Statement (FSEIS) for the West Mojave Route Network Project (WMRNP). The Proposed LUPA/FSEIS was prepared by the Bureau of Land Management (BLM) in consultation with various government agencies and organizations, taking into account public comments received during the planning effort. The purpose of the Proposed LUPA is to amend the California Desert Conservation Area (CDCA) Plan. The WMRNP considers seven planning decisions amending the motor vehicle access, recreation and livestock grazing elements within the CDCA Plan for the West Mojave (WEMO) Planning Area. These planning decisions include: change CDCA Plan language that limits routes of travel to existing routes as of 1980, identify travel management areas, change competitive event access, modify off-highway vehicle use on four lakebeds, eliminate the permit requirement for motorized access to the Rand Mountains-Fremont Valley Management Area, change the stop, park and camp limits adjacent to designated routes, and consider reallocating forage from livestock use to wildlife use and ecosystem function in desert tortoise critical habitat.

The WMRNP also includes implementation-level decisions, including designation of a route network and associated travel management plans.

Pursuant to BLM's planning regulations at 43 CFR 1610.5-2, any person who participated in the planning process for this Proposed LUPA and has an interest which is or may be adversely affected by the planning decisions may protest approval of the planning decisions contained therein. The Proposed LUPA/FSEIS is open for a 30-day protest period beginning the date that the Environmental Protection Agency publishes the Notice of Availability in the Federal Register.

The regulations specify the required elements of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g. meeting minutes or summaries, correspondence, etc.).

Instructions for filing a protest with the Director of the BLM regarding the Proposed LUPA/FSEIS may be found online at <https://www.blm.gov/programs/planning-and-nepa/public-participation/filing-a-plan-protest> and at 43 CFR 1610.5-2. All protests must be in writing and mailed to the appropriate address, as set forth below, or submitted electronically through the BLM ePlanning project website. Protests submitted electronically by any means other than the ePlanning project website protest section will be invalid unless a protest is also submitted in hard copy. Protests submitted by fax will also be invalid unless also submitted either through ePlanning project website protest section or in hard copy. All protests submitted in writing must be mailed to one of the following addresses:

Regular Mail:
Director (210)
Attn: Protest Coordinator
P.O. Box 71383
Washington, D.C. 20024-1383

Overnight Delivery:
Director (210)
Attn: Protest Coordinator
20 M Street SE, Room 2134LM
Washington, D.C. 20003

All protests must be filed within 30 days of the date that the Environmental Protection Agency publishes this Notice of Availability in the Federal Register.

Before including your address, phone number, email address, or other personal identifying information in your protest, be advised that your entire protest – including your personal identifying information – may be made publicly available at any time. While you can ask us in your protest to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

The BLM Director will make every attempt to promptly render a decision on each protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director shall be the final decision of the Department of the Interior on each protest. Responses to protest issues will be compiled and formalized in a Director's Protest Resolution Report made available following issuance of the decisions.

Upon resolution of all land use plan protests, the BLM will issue a Record of Decision (ROD). The ROD will be available to all parties at <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=93521>

Unlike land use planning decisions, implementation-level decisions included in this Proposed LUPA/FSEIS are not subject to protest under the BLM planning regulations, but are subject to an administrative review process, through appeals to the Office of Hearings and Appeals, Interior Board of Land Appeals pursuant to 43 CFR, Part 4 Subpart E. Implementation decisions generally constitute the BLM's final approval allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations once the BLM resolves the protests to land use planning decisions and issues a ROD.

Sincerely,

A handwritten signature in black ink, appearing to be 'Joe Stout', written over a horizontal line.

Joe Stout
Acting State Director

Enclosure:
Attachment 1 Protest Regulations

Attachment 1

Protest Regulations

[CITE: 43CFR1610.5-2]

TITLE 43--PUBLIC LANDS: INTERIOR
CHAPTER ■--BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR
PART 1600--PLANNING, PROGRAMMING, BUDGETING--Table of Contents
Subpart 1610--Resource Management Planning
Sec. 1610.5-2 Protest procedures.

- (a) Any person who participated in the planning process and has an interest which is or may be adversely affected by the approval or amendment of a resource management plan may protest such approval or amendment. A protest may raise only those issues which were submitted for the record during the planning process.
- (1) The protest shall be in writing and shall be filed with the Director. The protest shall be filed within 30 days of the date the Environmental Protection Agency published the notice of receipt of the final environmental impact statement containing the plan or amendment in the Federal Register. For an amendment not requiring the preparation of an environmental impact statement, the protest shall be filed within 30 days of the publication of the notice of its effective date.
- (2) The protest shall contain:
- (i) The name, mailing address, telephone number and interest of the person filing the protest;
 - (ii) A statement of the issue or issues being protested;
 - (iii) A statement of the part or parts of the plan or amendment being protested;
 - (iv) A copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party or an indication of the date the issue or issues were discussed for the record; and
 - (v) A concise statement explaining why the State Director's decision is believed to be wrong.
- (3) The Director shall promptly render a decision on the protest.
- (b) The decision shall be in writing and shall set forth the reasons for the decision. The decision shall be sent to the protesting party by certified mail, return receipt requested. The decision of the Director shall be the final decision of the Department of the Interior.

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EXECUTIVE SUMMARY

This Final Supplemental Environmental Impact Statement (FSEIS) supplements the 2005 Final Environmental Impact Report and Statement for the West Mojave (WEMO) Plan, A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment (2005 WEMO EIS). The 2005 WEMO EIS evaluated a proposed habitat conservation plan and federal land use plan amendment in a collaborative, multi-agency analysis. The Bureau of Land Management's (BLM's) component was implemented in the resulting West Mojave Plan (WEMO Plan), which was adopted through a Record of Decision (ROD) dated March, 2006.

The FSEIS considers five alternatives, including a no action alternative, to evaluate the environmental impacts associated with the BLM's West Mojave Route Network Project (WMRNP). The WMRNP is an undertaking which includes a combination of route network designations, implementation strategies, changes to grazing allotments, and travel management-related plan amendments to the California Desert Conservation Area (CDCA) Plan. The analysis in the FSEIS revisits and updates the 2005 WEMO Final EIS analysis of environmental impacts associated with off-road vehicle (ORV/OHV) use including soils, air, cultural, riparian, Unusual Plant Assemblages (UPAs), certain biological resources, and environmental impacts associated with the grazing program, including soils and riparian and UPA resources.

ES.1 Introduction

CDCA Plan and Amendments

The conservation program established by the CDCA Plan, as amended by the 2006 WEMO Plan, 2016 Desert Renewable Conservation Plan (DRECP) Land Use Plan Amendment (LUPA), and other amendments applies to the BLM-administered public lands in the WEMO Planning Area. The WMRNP amendment to the Motorized Vehicle Access (MVA) Element of the CDCA Plan, the route designation process that would be incorporated into the CDCA Plan, if approved, and the changes to grazing allotments would be applicable only to the BLM-administered public lands within the WEMO Planning Area.

Relation to CDCA Plan Elements

The CDCA Plan of 1980 addressed public-land resources and resource uses within 25 million acres in southern California. The CDCA Plan includes 12 plan elements, including a MVA Element. The MVA Element of the CDCA Plan addresses both access and vehicular use of public lands in southern California, and identifies management guidelines and objectives. The MVA Element of the CDCA Plan contains language that has been judicially determined to restrict motorized vehicle (OHV) routes to those that existed in 1980. OHVs are defined by 43 CFR 8340.0-5 as any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain (See Appendix C.2 and D.3). It also includes goals and objectives that, either in practice or through amendment, have been updated since 1980 to implement current policy.

The CDCA Plan has been amended numerous times since 1980. In 2006, the BLM approved a comprehensive amendment covering the WEMO area of the CDCA. The WEMO Plan Amendment was evaluated in a Final EIS that was approved by BLM in a 2006 ROD. The

WEMO Plan is a federal land use plan amendment that presented (1) a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel and over 100 other sensitive plants and animals and the natural communities of which they are a part, and (2) a streamlined program for complying with the requirements of the Federal and California Endangered Species Acts (ESA and CESA, respectively). Only the BLM public land portion of the 2006 WEMO Plan was approved; the state portion of the 2006 WEMO Plan was not approved. The 2006 WEMO Plan includes modification of the vehicle management program and livestock grazing program to promote the adopted conservation strategy. The 2006 WEMO Plan designated an OHV route network in applicable areas of the public land within the West Mojave Planning Area of the CDCA. Routes that are part of the route network and are regularly available for vehicular use are designated as OHV Open and OHV Limited routes as per the CDCA Plan, MVA Element (CDCA 1999, p.77).

The 2006 WEMO Plan includes modification of vehicle management decisions, including the identification of a designated OHV route network, in applicable areas of the more than 3 million acres of public land within the WEMO Planning Area of the CDCA. Routes that are part of the route network and are regularly available to the public for vehicular use are designated as OHV Open routes as per the CDCA Plan. The ROD for the WEMO Plan approved the designation of 5,098 miles of OHV routes. In August of 2006, eleven environmental organizations sued the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (FWS) claiming the BLM's designation of an off-highway vehicle route network throughout the WEMO planning area violated Federal Land Policy and Management Act of 1976 (FLPMA). The plaintiffs also claimed that the Environmental Impact Statement for the West Mojave Plan violated the National Environmental Policy Act of 1969. The United States (U.S.) District Court for the Northern District of California (N.D. Cal.) Summary Judgment of September 2009 left in place most of the WEMO Plan and found no Endangered Species Act violations. However, the court ruling did fault the methods used to identify and designate the nearly 5,100 miles of off-road routes throughout the WEMO Plan area. Subsequently, a court Remedy Order of January 2011 (*Center for Biological Diversity, et al. v. BLM, et al.*, 3:06-CV-04884 SI (N.D. Cal.)) remanded the 2006 WEMO Plan and directed the BLM to prepare a revised OHV route network that complies with the designation criteria in 43 CFR 8342.1 and to revisit grazing decisions within six months of the ROD.

The 2006 WEMO Plan modifications to the 1980 CDCA Plan (as amended) livestock grazing program include, among others:

- Elimination of the majority of ephemeral sheep grazing within sheep grazing allotments located in Desert Wildlife Management Areas (DWMAs, now designated as desert tortoise Areas of Critical Environmental Concern [DT ACECs] through the DRECP);
- Elimination of ephemeral grazing within cattle and horse grazing allotments when forage is inadequate;
- Elimination of ephemeral grazing and temporary non-renewable grazing authorization within cattle grazing allotments located in DT ACECs;
- Measures to remove grazing through temporary closures in cattle grazing allotments in DT ACECs when forage is inadequate; and

- Measures to allow voluntarily relinquishment of allotments located in DT ACECs and other special status species habitat.

The 2016 DRECP LUPA is a federal land use plan amendment to the CDCA Plan. The DRECP addressed a larger land area than the WEMO Planning Area, but the WEMO Planning Area is entirely encompassed within the DRECP area. To the extent specific land use decisions actually apply to resources and uses within the WEMO Planning Area, the land use planning decisions made in the DRECP apply to the entire WEMO Planning Area.

Specific decisions made in the 2016 DRECP LUPA which are relevant to the WMRNP are:

- Land use designations throughout the WEMO Planning Area were modified. This included designation of new ACECs, modification of the boundaries of existing conservation areas, establishment of new categories of land use designations, elimination of previous categories of land use designations, and modification of the goals and objectives for development, use, and conservation of resources within designated areas. A description of the changes to land use designations is provided in Appendix D.
- The boundaries of OHV Open Areas were modified. The revised Open Areas boundaries are described in Table 3.6-2.
- 15 vacant grazing allotments have been made unavailable for livestock grazing and the forage allocated to these allotments has been re-allocated to wildlife and ecosystem functions.

The DRECP did not make changes to the CDCA Plan Livestock Grazing Element goals, but did add additional goals to maintain and enhance various resource values that are relevant to the Livestock Grazing Element (listed beginning on pp. II.3-137 of the 2015 DRECP FEIS).

The FSEIS evaluates no action and four action alternatives that include alternative route networks, as well as language changes within the CDCA Plan. The five alternatives include variations in (1) the land-use plan level decisions in the MVA Element and Recreation Element of the CDCA Plan that establish the travel management framework for the West Mojave Planning Area, (2) non-land use plan route designations that provide a transportation and travel network and the strategies to implement the network and (3) the land-use plan decisions in the Livestock Grazing Element of the CDCA Plan that establish the locations and levels of livestock grazing in DT ACECs within the West Mojave Planning Area.

ES.2 Alternatives

No Action and four action alternatives have been developed and are considered in the WMRNP FSEIS. These alternatives are as follows:

Alternative 1—No Action

- Goals and Objectives as adopted in the 1980 CDCA Plan, 2006 WEMO Plan, 2016 DRECP LUPA, and other CDCA Plan amendments
- Area-wide increased minimization of resource impacts in critical habitat
- Case-by-case minimization of resource impacts
- Restoration focused implementation

- 5,677 miles of OHV Open and OHV Limited routes, and 9,557 miles of OHV Closed routes (including 27.6 miles of non-motorized and non-mechanized routes, and 9,529 miles of transportation linear disturbances)
- No change to livestock grazing

Alternative 2

- Through-use and enhanced resource protection oriented Goals and Objectives
- Area-wide increased strategy for minimization of resource impacts and user conflicts across all public lands
- Route designation strategy focused on designation of routes as transportation linear disturbances
- 4,912 miles of OHV Open and OHV Limited routes, and 10,332 miles of OHV Closed routes (including 98 miles of non-motorized and non-mechanized routes, and 10,224 miles of transportation linear disturbances)
- Grazing allotments unavailable for livestock grazing in DT ACECs

Alternative 3

- Destination- and Touring oriented Goals and Objectives
- Area-wide increased strategy for minimization of resource impacts and user conflicts across all public lands
- Network-enhancement focused implementation with multiple routes accessing areas of interest
- 10,280 miles of OHV Open and OHV Limited routes, and 4,954 miles of OHV Closed routes (including 177.8 miles of non-motorized and non-mechanized routes, and 4,776 miles of transportation linear disturbances)
- No change to livestock grazing

Alternative 4—Draft Proposed Action

- Destination- and Touring-use oriented Goals and Objectives
- Area-wide increased minimization across all public lands
- Balanced minimization strategies, emphasis on transportation linear disturbance or avoidance
- 5,955 miles of OHV Open and OHV Limited routes, and 9,280 miles of OHV Closed routes (including 200 miles of non-motorized and non-mechanized routes, and 9,080 miles of transportation linear disturbances)
- No change to livestock grazing

Alternative 5— Final Proposed Action (Preferred Alternative)

- Same goals, objectives, and minimization strategies as Alternative 4

- 6,247 miles of OHV Open and OHV Limited routes, and 8,988 miles of OHV Closed routes (including 247.8 miles of non-motorized and non-mechanized routes, and 8,740 miles of transportation linear disturbances)
- No change to livestock grazing

As discussed in Sections 2.1.1 and 2.1.2, each of the alternatives is composed of LUP-level decisions and implementation-level decisions. The Final Proposed Action includes elements of each of the action alternatives evaluated in the Draft SEIS (DSEIS), modified as described above. The Final Proposed Action includes measures to minimize impacts, and integrates some elements of Alternatives 1, 2, 3, and 4 in order to enhance community values, address Desert Advisory Council (DAC) issues, and respond to specific agency comments, consistent with the Final Proposed Action goals and objectives. Additional mitigation has been incorporated where appropriate to address these changes, as well as to conform to mitigation requirements required by the CDCA Plan, as amended. The Final Proposed Action also reflects ongoing data collection, and GIS updates.

The alternatives analyzed in Chapter 4 of the DSEIS included four alternatives for each of the Plan Amendments and four route implementation strategies, including route networks. Alternative 5, or the Final Proposed Action in this FSEIS and Plan Amendment, provides a combination of the current alternatives. BLM-proposed activity plans are included as appendices within this FSEIS, and tier from the proposed WMRNP Plan Amendment.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Air Quality ¹	<p>The magnitude of air emissions is generally the same for all alternatives. The No Action alternative, over the long-term, shows a substantial reduction in areas that would be susceptible to fugitive dust emissions. Transportation linear disturbances under the No Action Alternative total 9,556 miles, resulting in a reduction in fugitive dust emissions and beneficial impact due to re-vegetation and rehabilitation of disturbed soil areas. Mileage of OHV Open and OHV Limited routes near sensitive receptors and residences is only slightly more than in Alternative 2, and grazing impacts do not appreciably differ.</p>	<p>The magnitude of air emissions is slightly less than Alternatives 4, and 5, and less than Alternative 3. Alternative 2, over the long-term, shows a substantial reduction in areas that would be susceptible to fugitive dust emissions, modestly greater than No Action. Transportation linear disturbances under Alternative 2 total 10,285 miles, resulting in the highest reduction in fugitive dust emissions among the alternatives. Alternative 2 has the lowest mileage of OHV Open and OHV Limited routes near sensitive receptors and residences, and grazing impacts do not appreciably differ.</p>	<p>The magnitude of air emissions is the most amongst all alternatives. Alternative 3, over the long-term, shows a moderate reduction in areas that would be susceptible to fugitive dust emissions, which would be less than the other alternatives. Transportation linear disturbances under Alternative 3 total 4,944 miles, resulting in the lowest reduction in fugitive dust emissions among the alternatives. Alternative 3 has the highest mileage of OHV Open and OHV Limited routes near sensitive receptors and residences, and grazing impacts do not appreciably differ.</p>	<p>The magnitude of air emissions is slightly greater than Alternative 2, but less than Alternative 3 and slightly less than Alternative 5. Alternative 4, over the long-term, shows a substantial reduction in areas that would be susceptible to fugitive dust emissions, which would be less than No Action and Alternative 2 but greater than Alternative 3. Transportation linear disturbances under Alternative 4 total 9,276 miles, resulting in a reduction in fugitive dust emissions which is roughly similar to the No Action Alternative. Mileage of OHV Open and OHV Limited routes near sensitive receptors and residences is approximately the same as the No Action Alternative, and grazing impacts do not appreciably differ.</p>	<p>Alternative 5, over the long-term, similar to Alternative 4, shows a substantial reduction in areas that would be susceptible to fugitive dust emissions, which would be less than Alternative 3, but slightly greater than Alternative 4. Transportation linear disturbances under Alternative 5 total 8,987 miles, resulting in a reduction in fugitive dust emissions which is roughly similar to the No Action Alternative. Mileage of OHV Open and OHV Limited routes near sensitive receptors and residences is approximately the same as the No Action Alternative, and grazing impacts do not appreciably differ.</p>
<p>¹None of the alternatives would lead to a change in the OHV use or miles traveled in the planning area, and therefore none of the alternatives would result in any increase or decrease in direct or indirect air quality emissions from OHV vehicles.</p>					

**WEST MOJAVE (WEMO) ROUTE NETWORK PROJECT
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT**

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Greenhouse Gas Emissions	None of the alternatives would lead to a change in the OHV use or miles traveled in the planning area, and therefore none of the alternatives would result in any increase or decrease in direct or indirect GHG emissions from OHVs or livestock grazing.				

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
<p>Geology, Soil, and Water Resources</p>	<p>The mileage of OHV Open and OHV Limited routes near desert washes and riparian areas in the No Action Alternative is slightly higher than in Alternative 2. Soil and riparian impacts would decrease as a result of livestock grazing measures adopted in the 2016 DRECP LUPA. Riparian impacts do not substantially vary between alternatives since most natural water sources used by livestock are excluded by fencing.</p>	<p>The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes in close proximity to washes, riparian areas, springs, and erosion-prone areas. Therefore, it would have the lowest magnitude of direct, adverse impacts to geology, soil, and water resources, and the lowest contribution to cumulative impacts. The magnitude of erosion and compaction impacts would be lower for Alternative 2 than for all other alternatives. Riparian impacts are the same as No Action.</p>	<p>The route network under Alternative 3 would have the highest mileage of OHV Open and OHV Limited routes in close proximity to washes, riparian areas, springs, and erosion-prone areas. Therefore, it would have the largest magnitude of direct, adverse impacts to geology, soil, and water resources, and the largest contribution to cumulative impacts. Riparian impacts are the same as No Action.</p>	<p>The mileage of OHV Open and OHV Limited routes near desert washes and riparian areas in Alternative 4 is approximately the same as the No Action Alternative. The magnitude of erosion and compaction impacts would be the same for Alternative 4 as the No Action, and would be higher than Alternative 2. Riparian impacts are the same as No Action.</p>	<p>The mileage of OHV Open and OHV Limited routes near desert washes and riparian areas in Alternative 5 is approximately the same as the No Action Alternative. The magnitude of erosion and compaction impacts would be the same for Alternative 5 as the No Action, and would be higher than Alternative 2. Riparian impacts are the same as No Action.</p>

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Vegetation	<p>The mileage of OHV Open and OHV Limited routes in close proximity to sensitive vegetation communities, special status plants, and UPAs in the No Action Alternative is slightly higher than in Alternative 2. Grazing impacts would be higher than under Alternative 2, even with measures adopted in the 2016 DRECP LUPA, because more forage in sensitive species habitat would potentially be available for livestock grazing. Grazing impacts would not substantially vary between other Alternatives.</p>	<p>The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes in close proximity to identified vegetation resources. It would also have the most protective minimization and mitigation measures applied to use of those routes, and the most protective goals and objectives to be used in evaluating future routes. Therefore, it would have the lowest magnitude of direct, adverse impacts to vegetation, and the lowest contribution to adverse cumulative impacts. Grazing impacts would be lower under this alternative than other Alternatives because forage in sensitive species habitat would immediately become unavailable for livestock grazing.</p>	<p>The route network under Alternative 3 would have the highest mileage of OHV Open and OHV Limited routes in close proximity to identified vegetation resources. It would also have the least protective minimization and mitigation measures applied to use of those routes, and the least protective goals and objectives to be used in evaluating future routes. Therefore, it would have the largest magnitude of direct, adverse impacts to vegetation resources, and the largest contribution to adverse cumulative impacts. Grazing impacts are more than Alternative 2 and the same as No Action.</p>	<p>The mileage of OHV Open and OHV Limited routes in close proximity to sensitive vegetation communities, special status plants, and UPAs in Alternative 4 is approximately the same as in the No Action Alternative. Grazing impacts are more than Alternative 2 and the same as the No Action Alternative and Alternatives 3 and 5.</p>	<p>The mileage of OHV Open and OHV Limited routes in close proximity to sensitive vegetation communities, special status plants, and UPAs in Alternative 5 is approximately the same as in the No Action Alternative and Alternative 4. Grazing impacts are more than Alternative 2 and the same as the No Action Alternative and Alternatives 3 and 4.</p>

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Wildlife	<p>The mileage of OHV Open and OHV Limited routes in close proximity to special status wildlife areas in the No Action Alternative is slightly higher than in Alternative 2.</p> <p>Grazing impacts to wildlife are the same as impacts for vegetation; they would be higher than Alternative 2.</p>	<p>The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes in close proximity to identified wildlife areas. It would also have the most protective minimization and mitigation measures applied to use of those routes, and the most protective goals and objectives to be used in evaluating future routes. Therefore, it would have the lowest magnitude of direct, adverse impacts to wildlife, and the lowest contribution to adverse cumulative impacts.</p> <p>Grazing impacts to wildlife are the same as impacts for vegetation; they would be lower under Alternative 2 than the other alternatives.</p>	<p>The route network under Alternative 3 would have the highest mileage of OHV Open and OHV Limited routes in close proximity to identified wildlife areas. It would also have the least protective minimization and mitigation measures applied to use of those routes, and the least protective goals and objectives to be used in evaluating future routes. Therefore, it would have the largest magnitude of direct, adverse impacts to wildlife resources, and the largest contribution to adverse cumulative impacts.</p> <p>Grazing impacts to wildlife are the same as impacts for vegetation; Alternative 3 impacts would be higher than under Alternative 2.</p>	<p>The mileage of OHV Open and OHV Limited routes in close proximity to special status wildlife areas in Alternative 4 is slightly higher than in the No Action Alternative.</p> <p>Grazing impacts to wildlife are the same as impacts for vegetation; Alternative 4 impacts would be higher than under Alternative 2.</p>	<p>The mileage of OHV Open and OHV Limited routes in close proximity to special status wildlife areas in Alternative 5 is higher than in the No Action Alternative and slightly higher than in Alternative 4.</p> <p>Grazing impacts to wildlife are the same as impacts for vegetation; Alternative 5 impacts would be higher than under Alternative 2.</p>

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Socioeconomics	<p>The mileage of OHV Open and OHV Limited routes available to support recreation and authorized users under the No Action Alternative is slightly higher than in Alternative 2.</p> <p>Grazing impacts from the No Action alternative have been adverse to specific lessees, particularly in the sheep grazing community. Impacts would not substantially vary between No Action and Alternatives 3, 4 and 5 but would be lower than under Alternative 2.</p>	<p>The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes available to support recreation and authorized users of BLM lands. Although access for these users would still be available, this alternative would increase the density of recreational use, possibly having a slight adverse impact on recreation-focused businesses. Access for authorized users would also be maintained, but it would require a greater length of travel for some users, again having a slight adverse impact.</p> <p>Impacts under Alternative 2 are higher than under the other Alternatives because it would result in an additional loss to individual livestock grazing lessees and the local tax base.</p>	<p>The route network under Alternative 3 would have the largest mileage of OHV Open and OHV Limited routes available to support recreation and authorized users of BLM lands. The increase in the mileage of OHV Open and OHV Limited routes would be a beneficial impact to recreation-focused businesses and other authorized users, as compared to the No Action Alternative.</p> <p>Impacts are the same as No Action.</p>	<p>The mileage of OHV Open and OHV Limited routes available to support recreation and authorized users in Alternative 4 is slightly higher than in the No Action Alternative.</p> <p>Impacts are less than the No Action due to the incorporation of additional street-legal only routes in residential and populated areas.</p>	<p>The mileage of OHV Open and OHV Limited routes available to support recreation and authorized users in Alternative 5 is higher than in the No Action Alternative slightly higher than in Alternative 4.</p> <p>Impacts are less than the No Action due to the incorporation of additional street-legal only routes in residential and populated areas.</p>

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Recreation ²	The mileage of OHV Open and OHV Limited routes available to support recreation under the No Action Alternative is slightly higher than in Alternative 2.	The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes available to support recreation. Although access for these users would still be available, this alternative would increase the density of recreational use in areas that remain open, thus having an adverse impact on the recreation experience.	The route network under Alternative 3 would have the largest mileage of OHV Open and OHV Limited routes available to support recreation. The increase in the mileage of OHV Open and OHV Limited routes would allow recreational users to be more dispersed, increasing their recreational experience and serving as a beneficial impact as compared to the No Action Alternative.	The mileage of OHV Open and OHV Limited routes available to support recreation in Alternative 4 is slightly higher than in the No Action Alternative.	The mileage of OHV Open and OHV Limited routes available to support recreation in Alternative 5 is higher than in the No Action Alternative and slightly higher than Alternative 4.
² There are no substantial grazing impacts under any of the alternatives to recreation resources.					

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Livestock Grazing	<p>The mileage of OHV Open and OHV Limited routes available to support authorized users under the No Action Alternative is slightly higher than in Alternative 2. Livestock grazing would continue on 19 active allotments under the terms and conditions contained in the Final Grazing Decisions for active allotments in the WEMO Planning Area.</p>	<p>The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes available to support the operations of grazing permittees and lessees. Although access for these users would still be available, this alternative may increase the length of routes those operators need to travel to support their operations, thus having an adverse impact on grazing operations. This impact would contribute incrementally to adverse cumulative impacts to grazing due to resource protections and other authorized uses. Livestock grazing would be discontinued on 3 active grazing allotments in portions within DT ACECs.</p>	<p>The route network under Alternative 3 would have the largest mileage of OHV Open and OHV Limited routes available to support the operations of grazing permittees and lessees. By increasing the mileage of OHV Open and OHV Limited routes within grazing allotments, this alternative would have a beneficial impact on the operators of those allotments. Overall impacts to the allotments due to other factors, such as resource protections and other authorized projects, would continue to have an adverse cumulative impact to grazing. Livestock grazing would continue on 19 active allotments under the terms and conditions contained in the Final Grazing Decisions for active allotments in the WEMO Planning Area.</p>	<p>The mileage of OHV Open and OHV Limited routes available to support grazing in Alternative 4 is slightly higher than in the No Action Alternative. Livestock grazing would continue on 19 active allotments under the terms and conditions contained in the Final Grazing Decisions for active allotments in the WEMO Planning Area.</p>	<p>The mileage of OHV Open and OHV Limited routes available to support grazing in Alternative 5 is slightly higher than in the No Action Alternative. Livestock grazing would continue on 19 active allotments under the terms and conditions contained in the Final Grazing Decisions for active allotments in the WEMO Planning Area.</p>

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Energy Production, Utility Corridors, and Other Land Uses ³	The mileage of the existing authorized or permitted routes are the same in all alternatives.	The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes available to support access for any new authorized users for energy production, utility corridors, mining, communications sites, and other facilities. Although access for these users would still be available, this alternative may increase the length of routes those users need to travel to support their new operations. This impact would contribute, incrementally, to adverse cumulative impacts to these land uses due to resource protections and other authorized uses.	The route network under Alternative 3 would have the largest mileage of OHV Open and OHV Limited routes available to support access for new authorized users for energy production, utility corridors, mining, communications sites, and other facilities. By increasing the mileage of OHV routes, this alternative would have a beneficial impact on the operators of those new facilities. Overall impacts to these operations due to other factors, such as resource protections, would continue to have an adverse cumulative impact to other land uses.	The mileage of OHV Open and OHV Limited routes available to support authorized users in Alternative 4 is slightly higher than in the No Action Alternative.	The mileage of OHV Open and OHV Limited routes available to support authorized users in Alternative 5 is slightly higher than in Alternative 4.
<p>³There are no substantial grazing impacts under any of the alternatives to energy production, utility corridors, and/or other land uses.</p>					

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Cultural Resources	<p>The mileage of OHV Open and OHV Limited routes in close proximity to known cultural resources under the No Action Alternative is slightly higher than in Alternative 2.</p> <p>Grazing impacts would be the same as Alternatives 3, 4 and 5 and somewhat higher than under Alternative 2 due to the modest potential for additional damage of cultural resources by livestock on the three actively grazed allotments in DT ACECs.</p>	<p>The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes in close proximity to identified cultural resources. It would also have the most protective minimization and mitigation measures applied to use of those routes, and the most protective goals and objectives to be used in evaluating future routes. Therefore, it would have the lowest magnitude of direct, adverse impacts to cultural resources, and the lowest contribution to cumulative impacts.</p> <p>Grazing impacts would be lower under Alternative 2 than under the No Action and other alternatives because any potential for additional damage of cultural resources by livestock on the three currently grazed allotments in DT ACECs would be eliminated.</p>	<p>The route network under Alternative 3 would have the highest mileage of OHV Open and OHV Limited routes in close proximity to identified cultural resources. It would also have the least protective minimization and mitigation measures applied to use of those routes, and the least protective goals and objectives to be used in evaluating future routes. Therefore, it would have the largest magnitude of direct, adverse impacts to cultural resources, and the largest contribution to cumulative impacts.</p> <p>Grazing impacts are the same as the No Action Alternative.</p>	<p>The mileage of OHV Open and OHV Limited routes in close proximity to known cultural resources in Alternative 4 is slightly higher than in the No Action Alternative. Grazing impacts are the same as the No Action Alternative.</p>	<p>The mileage of OHV Open and OHV Limited routes in close proximity to known cultural resources in Alternative 5 is slightly less than in Alternative 4. Grazing impacts are the same as the No Action Alternative.</p>

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Visual Resources ⁴	The mileage of OHV Open and OHV Limited routes in the most sensitive VRM classes (Class I and II) is slightly higher than in Alternative 2, slightly lower than Alternative 4 and 5, but much lower than Alternative 3.	The mileage of OHV Open and OHV Limited routes in the most sensitive VRM classes (Class I and II) is lowest in Alternative 2. Although remaining OHV routes would continue to have an adverse impact on the visual character of the desert, transportation linear disturbances would lead to a beneficial impact by allowing routes to re-vegetate and rehabilitate. The route network under Alternative 2 would have the largest mileage of closed routes, and would therefore have a beneficial impact on visual resources, as compared to the other alternatives.	The mileage of OHV Open and OHV Limited routes in the most sensitive VRM classes (Class I and II) is highest in Alternative 3. The route network under Alternative 3 would have the lowest mileage of transportation linear disturbances, and would therefore have an adverse impact on visual resources, as compared to the No Action Alternative.	The mileage of OHV Open and OHV Limited routes in the most sensitive VRM classes (Class I and II) is slightly higher than in the No Action Alternative and 2, but much lower than Alternative 3.	The mileage of OHV Open and OHV Limited routes in the most sensitive VRM classes (Class I and II) is slightly higher than in the No Action Alternative and 2 only, but much lower than Alternative 3.
⁴ There are no substantial grazing impacts under any of the alternatives to visual resources.					

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
<p>Special Designations and other Inventoried Areas</p>	<p>The mileage of OHV Open and OHV Limited routes in ACECs, California Desert National Conservation Lands (CDNCL), DT ACECs, national monuments, Wilderness Areas, WSAs, and Lands Managed for Wilderness Characteristics (LMWCs) is slightly higher than in Alternative 2, slightly lower than Alternative 4 and 5, but much lower than Alternative 3. Grazing impacts would be higher to special designation areas than under Alternative 2, even with measures adopted in the 2016 DRECP LUPA.</p>	<p>The mileage of OHV Open and OHV Limited routes in ACECs, CDNCL, DT ACECs, national monuments, Wilderness Areas, WSAs, and LMWCs is lowest in Alternative 2. This alternative would also have the most protective minimization and mitigation measures applied to use of those routes, and the most protective goals and objectives to be used in evaluating future routes. Therefore, it would have the lowest magnitude of direct, adverse impacts to special designation areas, and the lowest contribution to cumulative impacts. Grazing impacts would be lower to special designation areas under this alternative than other Alternatives because DT ACECs would immediately become unavailable for livestock grazing or damage.</p>	<p>The mileage of OHV Open and OHV Limited routes in ACECs, CDNCL, DT ACECs, national monuments, Wilderness Areas, WSAs, and LMWCs is highest in Alternative 3. This alternative would also have the least protective minimization and mitigation measures applied to use of those routes, and the least protective goals and objectives to be used in evaluating future routes. Therefore, it would have the largest magnitude of direct, adverse impacts to special designation areas, and the largest contribution to cumulative impacts. Grazing impacts to special designation areas are more than Alternative 2 and the same as the No Action Alternative.</p>	<p>The mileage of OHV Open and OHV Limited routes in ACECs, CDNCL, DT ACECs, national monuments, Wilderness Areas, WSAs, and LMWCs is slightly higher than in Alternatives 1 and 2, but much lower than Alternative 3. Grazing impacts to special designation areas are the same as No Action Alternative.</p>	<p>The mileage of OHV Open and OHV Limited routes in ACECs, CDNCL, DT ACECs, national monuments, Wilderness Areas, WSAs, and LMWCs is slightly higher than in Alternatives 1, 2 and 4, but much lower than Alternative 3. Grazing impacts to special designation areas are the same as No Action Alternative.</p>

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Noise ⁵	The mileage of OHV Open and OHV Limited routes near sensitive receptors and residences is only slightly more than in Alternative 2, and much less than in Alternative 3.	The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes within close proximity to sensitive human receptors, residences, and wildlife receptors. Therefore, it would have the lowest magnitude of direct, adverse impacts resulting from noise, and the lowest contribution to cumulative impacts.	The route network under Alternative 3 would have the largest mileage of OHV Open and OHV Limited routes within close proximity to sensitive human receptors, residences, and wildlife receptors. Therefore, it would have the largest magnitude of direct, adverse impacts resulting from noise, and the largest contribution to cumulative impacts.	The mileage of OHV Open and OHV Limited routes near sensitive receptors and residences is approximately the same as in the No Action Alternative.	The mileage of OHV Open and OHV Limited routes near sensitive receptors and residences is approximately the same as in the No Action Alternative.
⁵ There are no substantial grazing impacts under any of the alternatives to noise resources.					

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel and Transportation Management ⁶	The route network under all alternatives has been designed to ensure connectivity with route networks in adjacent jurisdictions, and to ensure access to public land holdings and authorized users. The No Action Alternative did not inventory at least 40% of the planning area in the 2006 WEMO Plan. After the route inventory was updated, the No Action Alternative would increase the current level of connections and use, and would therefore have fewer impacts on travel and transportation management. There would continue to be limited routes required under No Action and Alternatives 3 and 4 that would no longer be needed under Alternative 2, but they do not substantively affect the overall travel network.	Alternative 2 has been designed to maintain connections with adjacent jurisdictions and ensure access to private land and authorized users. However, by closure of some unauthorized routes to increase resource protections, this alternative may increase the length of routes that some users may travel to use these areas. As a result, this alternative would have a slight adverse, direct impact to travel and transportation management. Miles of limited routes may eventually be slightly lower under Alternative 2 than the other alternatives if routes are not needed for other purposes.	Alternative 3 would result in the widest network of OHV Open and OHV Limited routes, with multiple routes occurring near points of interest, maximizing connections to adjacent jurisdictions and access to private land and authorized uses. As a result, this alternative would have a direct, beneficial impact to travel and transportation management.	Like all alternatives, Alternative 4 has been designed to ensure connectivity with route networks in adjacent jurisdictions, and to ensure access to public land holdings and authorized users. However, this alternative has been designed to incorporate public scoping regarding access to specific locations and users. As a result, Alternative 4 would be beneficial to travel and transportation management.	Like all alternatives, Alternative 5 has been designed to ensure connectivity with route networks in adjacent jurisdictions, and to ensure access to public land holdings and authorized users. However, this alternative has been designed to incorporate specific comments received during the DSEIS public comment period regarding access to specific locations and uses. As a result, Alternative 5 would be the most beneficial to travel and transportation management.
⁶ There are no substantial grazing impacts to Travel and Transportation Management (TTM) resources.					

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Paleontological Resources	<p>The mileage of OHV Open and OHV Limited routes in areas with High/Very High potential for paleontological resources is slightly higher than in Alternative 2. Grazing impacts would be the same as Alternatives 3, 4, and 5, and somewhat higher than under Alternative 2 due to the modest potential for additional damage of paleontological resources by livestock on the three actively grazed allotments in DT ACECs.</p>	<p>The route network under Alternative 2 would have the lowest mileage of OHV Open and OHV Limited routes in areas with High/Very High potential for paleontological resources. It would also have the most protective minimization and mitigation measures applied to use of those routes, and the most protective goals and objectives to be used in evaluating future routes. Therefore, it would have a lower magnitude of adverse impacts to paleontological resources, and the lowest contribution to cumulative impacts. Grazing impacts would be lower under Alternative 2 than under the No Action and other alternatives because any potential for additional damage of paleontological resources by livestock on the three currently grazed allotments in DT ACECs would be eliminated.</p>	<p>The route network under Alternative 3 would have the highest mileage of OHV Open and OHV Limited routes in areas with High/Very High potential for paleontological resources. It would also have the least protective minimization and mitigation measures applied to use of those routes, and the least protective goals and objectives to be used in evaluating future routes. Therefore, it would have the largest magnitude of direct, adverse impacts to paleontological resources, and the largest contribution to cumulative impacts. Grazing impacts are the same as the No Action alternative.</p>	<p>The mileage of OHV Open and OHV Limited routes in areas with High/Very High potential for paleontological resources in Alternative 4 is slightly higher than in the No Action Alternative. Grazing impacts are the same as the No Action alternative.</p>	<p>The mileage of OHV Open and OHV Limited routes in areas with High/Very High potential for paleontological resources in Alternative 5 is slightly higher than in Alternative 4. Grazing impacts are the same as the No Action alternative.</p>

CHAPTER ONE INTRODUCTION

The BLM's West Mojave Route Network Project (WMRNP) proposes a land-use plan amendment to the 1980 California Desert Conservation Area Plan, as amended (CDCA Plan), and activity-plan strategies to implement the land use plan amendment. The proposed land use plan amendments and activity-level strategies associated with the WMRNP were developed in response to litigation associated with the 2006 WEMO Plan, as well as recent transportation and travel management guidance.

Four action alternatives evaluated in the Draft SEIS (DSEIS) include variations in (1) the land-use plan level decisions in the Motor Vehicle Access (MVA) Element and Recreation Element of the CDCA Plan that establish the travel management framework for the West Mojave Planning Area, (2) non-land use plan route designations that provide a transportation and travel network and the strategies to implement the network and (3) the land-use plan decisions in the Livestock Grazing Element of the CDCA Plan that establish the locations and levels of livestock grazing in desert tortoise Desert Wildlife Management Areas (DWMAs, now designated by the Desert Renewable Energy Conservation Project (DRECP) as desert tortoise Areas of Critical Environmental Concern [DT ACECs]) within the West Mojave Planning Area.

The analysis in the FSEIS revisits and updates the 2005 WEMO Final EIS analysis of environmental impacts associated with OHV use including soils, air, cultural, riparian and water-associated Unusual Plant Assemblages (UPAs), and certain biological resources, and environmental impacts associated with the grazing program, including soils and riparian and other water-associated UPAs. The analysis also uses data developed to support the 2016 DRECP Land Use Plan Amendment (LUPA) that amended the CDCA Plan. The land use plan amendment and travel network alternatives evaluated are consistent with the land use designations and goals and objectives of the approved CDCA Plan.

1.1 Overview of the Environmental Impact Statement

1.1.1 Site Location and Description of the WMRNP Amendment

The West Mojave (WEMO) Planning Area is located to the northeast of the Los Angeles metropolitan area (See Figure 1.1-1). The planning area currently totals 9.4 million acres, of which approximately 3.1 million acres are BLM administered public lands. The BLM land use plan for the planning area is the CDCA Plan. The BLM amended the CDCA Plan in 2006 with the WEMO Plan Amendment and in 2016 with the DRECP LUPA to establish the conservation program that applies to the BLM-administered public lands in the planning area. If approved, the WMRNP amendment to the Livestock Grazing, Motorized Vehicle Access (OHV use), and Recreation Elements of the CDCA Plan, and the route designation process updates that would be incorporated into the CDCA Plan, would be applicable only to the BLM-administered public lands within the planning area.

The current inventory of routes within the planning area identified approximately 15,235 miles of linear features outside of OHV Open Areas on public lands. These linear features either are currently being used as OHV or primitive routes, or historically have been used for these purposes and still show some evidence of that use.

1.1.2 Management and Planning Framework

The management and planning framework for the West Mojave Planning Area is presented in Appendix D. That framework includes the applicable legislation and policies that govern BLM's management of the planning area, the applicable land use plans and their relationship to Travel and Transportation Management and grazing, and the Court's Summary Judgment Order on September 28, 2009, and Remedy Order on January 28, 2011.

1.1.3 Court Actions

Shortly after the completion of the 2006 WEMO Plan, a lawsuit was filed challenging the route designation process and other procedural aspects of the 2003 West Mojave Desert Off Road Vehicle Designation Project and the 2006 WEMO Plan (*Center for Biological Diversity, et al. v. BLM, et al.*, 3:06-CV-04884 SI (N.D.Cal.)). The United States District Court for the Northern District of California (the Court) issued a Summary Judgment Order on September 28, 2009 finding that BLM's travel management plan was legally inadequate, and a Remedy Order on January 28, 2011 setting forth the means by which BLM was to resolve the legal infirmities identified by the court.

The Remedy Order only partly vacated the 2006 WEMO ROD, citing the potential for unpredictable or irreversible environmental consequences if the full ROD was completely vacated. The court determined that (1) the "decision tree" used to evaluate and designate routes was flawed because it did not comply with regulations requiring BLM to protect resources, promote public safety, and minimize conflict, and consider various "minimization criteria" (Summary Judgment Order, September 28, 2009, p.4 lines 18-19), found in 43 CFR 8342.1, when designating routes, (2) the plan authorized numerous Off-Highway Vehicles (OHV) routes that were not in existence in 1980, which was inconsistent with the governing land use plan which limits OHV routes to those existing in 1980, (3) the EIS did not contain a reasonable range of alternatives to the proposed action because all alternatives considered the same 5,098 mile OHV route network and because its discussion of the No Action alternative was incomplete, (4) the EIS was flawed because its analysis of impacts on soils, cultural resources, certain biological resources, and air quality was incomplete (Remedy Order, January 28, 2011, p.2), and (5) the grazing decisions which had been tiered to the analysis in the 2005 WEMO EIS remained in effect, but were to be reconsidered within six months after the revised Final EIS and ROD were adopted by the BLM. These issues are discussed in more detail in Sections 1.3 and 1.5 below.

The Court directed BLM to reconsider the route designation process and network under the Federal Land Policy and Management Act of 1976 (FLPMA) and issue a revised decision that complies with FLPMA and BLM's regulations that establish "minimization criteria" for OHV routes, in 43 CFR 8342.1. BLM was also directed to prepare a supplemental National Environmental Policy Act (NEPA) document that reconsiders the "No Action" alternative and considers a broader range of alternatives, including at least one alternative that analyzes a less extensive network for the West Mojave Planning Area (Remedy Order, January 28, 2011, p.4, lines 2 thru 4). Further, the Court directed the BLM to conduct additional analysis of those environmental impacts from the route network and grazing program for which the court found a failure to comply in its September 28, 2009 Summary Judgment Order (Remedy Order, January 28, 2011, p.3-4).

Accordingly, BLM initiated the WMRNP SEIS, tiered from the 2005 WEMO Final EIS, to inform BLM's evaluation of a plan amendment proposal and alternatives for its grazing program and transportation and travel management program, and associated non-land use plan transportation and travel management implementation strategy and route network alternatives, within the West Mojave Planning Area, to address deficiencies identified by the Court, and to serve as BLM's NEPA compliance document. The previous DSEIS was issued on March 6, 2015, and was available for public review for a 90 day public review period, followed by an additional 120 day public review period. The revised DSEIS published in the *Federal Register* on March 16, 2018 considered public comments made during those review periods, provided an additional 90 day public review period that ended on June 14, 2018, and incorporated additional data and requirements associated with the 2016 DRECP LUPA. This FSEIS considers public comments made on the 2018 DSEIS, and includes analysis of a Proposed Action route network.

1.1.4 Route Inventory for the WMRNP

The court also requested BLM to further clarify its No Action alternative, and to treat the baseline for planning analysis consistently throughout the document. In 2012, the BLM began two efforts that would provide a comprehensive understanding of existing routes within the West Mojave Planning Area. An intensive open-route signing project and subsequent monitoring project was conducted in the field using GPS handheld equipment that could directionally track routes as they were being driven and would help to assure map accuracy. At the same time, high quality aerial photography from 2009 was being reviewed by GIS personnel at 1:2000 resolution and was used to provide a digital record (completed in 2013) of all the OHV Open and Limited routes and any unauthorized routes. The result of these two concurrent inventories identifies a total of all primitive routes (ground transportation linear features—see glossary) in the planning area.

The 2012-2013 inventory of routes identified approximately 15,000 miles of linear features outside of OHV Open Areas on public lands. These linear features either are currently being used as OHV or primitive routes, or historically have been used for these purposes and still show some evidence of that use. The total inventory rose to 16,003 miles in the March 16, 2018 DSEIS, due to a GIS drawing error that resulted in approximately 768 miles more than the most accurate baseline to date, which after corrections is currently a total of approximately 15,235 miles. Thus, the final route inventory for the WMRNP Final SEIS and LUPA is 15,235 miles. The additional 235 miles in the final route network are the result of additional right-of-ways, street-legal only routes, access to private lands for homeowners, and a small increase in route connectivity for user safety and other TTM route designation criteria.

This total is approximately 8,000 miles more than the WEMO Plan inventory which was based on the data collected in 2001 (and analyzed in 2005) for the 2006 WEMO Plan, and is discussed further in Chapter 2. Based on a sample review of the aerial 2005 data and the current aerial (2013) data, the additional miles of primitive routes in the inventory has not changed notably since 2005. BLM's sample review of the recent and earlier route inventories indicates that these additional routes are not the result of an expansion of the route inventory since the 2006 WEMO Plan ROD. BLM has identified several reasons why the current inventory is more extensive than the inventory reflected in the 2006 WEMO Plan.

During the 2013 inventory efforts, the data that BLM was collecting (both in the field and using the aerial photography) clearly did not match data from the 2006 WEMO Plan. This discrepancy was apparent in the extensive 2001 inventories of the redesign areas known as Motorized Access Zones (MAZs), and was even more apparent in the approximately 50 percent of the planning area that was not inventoried in 2001 and which instead relied on previous inventory data (2005 WEMO Final EIS, p. 2-143-145).

Routes from the 2006 WEMO Plan were inaccurate due to mapping errors based on source data, magnetic alignment and tracing errors. Other routes were “in the wrong place”, possibly the result of the equipment used in 2001, resulting in route signs not matching up with the maps that indicated where the approved plan said a route should be.

The 2013 inventory incorporates many access roads to private lands and rights-of-way for which data is now available. These routes may not be intended for public use in many cases. They can include spur routes off of main routes that were often not included in the 2001 inventory and may include spur routes to private lands and to telephone poles or other right-of-way facilities that may or may not have been issued an official authorization for such use. Use that is specifically authorized for use can be the source of route proliferation if not appropriately designated and managed.

Some routes not identified in the 2006 WEMO Planning inventory showed signs of partial reclamation. These routes have been included in the route inventory to designate these linear features as within the transportation linear disturbances asset classification category.

Previously undocumented routes that were identified in the 2013 inventories include routes in areas with source data that was older than 2001. Many areas had not been revisited comprehensively since the 30-year old inventories that had been conducted for the 1985-1987 planning effort. Some areas had “gaps”, e.g., places where route inventories were never collected and documented, or which relied exclusively on the 1:24,000 or 1:50,000 USGS topographic maps (flown circa 1950 – 1980).

Large land acquisition and disposal efforts occurred after the 1985-87 inventory, resulting in a net increase of over 165,000 additional public land acres outside of Wilderness or OHV open areas. At the time of acquisition, route inventories were not taken.

The current inventory includes the entire 15,235 miles of primitive routes because it reflects the condition and use patterns on the ground. Most of the primitive routes in the current inventory are not in the designated OHV network as approved by the 2006 WEMO Plan because they were not identified or known at the time. They constitute non-designated routes that have been in various levels of use for some time. The discrepancy between the 5,098 miles of routes approved by the 2006 WEMO Plan and the 15,235 miles of routes identified in the current inventory existed before the 2006 WEMO Plan was approved. The inventory that existed before and at the time the 2006 WEMO Plan was approved was not sophisticated enough to identify the discrepancy.

A relatively small number of the 15,235 miles of identified routes are actual permitted routes that were not included in the original 2006 WEMO inventory and analysis. They are currently being utilized by permittees. These routes have been added to the network as authorized/administrative routes, consistent with the 2006 WEMO Plan implementation direction. Previously designated non-motorized or non-mechanized routes were not addressed in the 2006 travel network, but

comprise a minimal number of miles, as identified in the Chapter 4 impacts analysis. The entire 15,235 miles of routes forms the inventory of routes from which alternatives were designed. The preliminary No Action route network (5,098 miles) was adjusted by certain decisions issued by the court, and include valid existing rights (e.g., those authorized/administrative routes/access to mining/private lands) and street-legal only routes to total 5,677 miles. This number, 5,677 miles of routes, forms the basis for the comparison of impacts between alternatives.

1.2 Purpose and Need

The purpose and need of the WMRNP is to provide a framework for transportation management, and specific travel management implementation strategies in the CDCA Plan Limited Access Areas of the West Mojave Planning Area. This framework and these strategies address (1) conflicts and threats to sensitive resources, (2) current and anticipated future transportation and travel needs, (3) appropriate recreational access, and (4) consistency with the CDCA Plan, as amended by the 2006 WEMO Plan, and the 2016 DRECP LUPA. One of the planning issues to be addressed in the 2006 WEMO Plan is to “provide appropriate motorized vehicle access to public lands for commercial, recreational, and other uses in a manner that is compatible with species conservation”. An additional livestock grazing alternative in addition to those analyzed in the 2006 WEMO Plan and the 2016 DRECP LUPA is under consideration, as Alternative 2. This alternative would make allotments in DT ACECs unavailable for livestock grazing. The FSEIS also analyzes OHV access and use and grazing impacts on specific resources in response to the Court’s statements of inadequacy, as summarized in the Court Remedy Order (January 28, 2011, p.3-4) and further discussed in Section 1.1.3.

Since the development of the 2006 WEMO route network, new BLM policies, including BLM Manual 1626 (Travel and Transportation Management Manual) and BLM Handbook H-8342 (Travel and Transportation Handbook), have been developed. In addition, other new circumstances affecting travel and transportation management have occurred, including legislative boundary modification associated with Wilderness, national monuments, grazing allotments, and military bases; receipt of new information on routes, route impacts, and route uses; and the litigation on the 2006 WEMO Plan Amendment. These changes also include adoption of the 2016 DRECP LUPA.

By regulation, a land use plan may be amended to consider new findings, data, new or revised policy, changes in circumstances or to address a proposed action that may result in a change in the scope of resource use or a change in the terms, conditions, and decisions of the approved plan (43 CFR 1610.5-5). The WMRNP will provide managers with a consistent way of implementing the CDCA Plan transportation management strategy that is adopted for the WEMO Planning Area, to achieve land use plan goals and objectives moving forward.

1.2.1 Purpose and Need for Plan Amendment Decisions

The 2012 Travel Management guidance (H-8342) makes clear distinctions between the land-use planning decisions to adopt a travel management framework, and non-land use planning decisions to implement the travel management planning framework, including the designation of specific routes. The CDCA Plan had already made some of these transportation and travel management decisions in designating all public lands within the CDCA into broader landscape

categories which define whether and how OHV use is allowed. All areas within the CDCA, including all lands within the West Mojave Planning Area, are designated as open for OHV use, limited OHV use, or closed to OHV use as defined by 43 CFR 8340.0-5 (f), (g), and (h) or designated as a transportation linear disturbance as defined by BLM Manual 1626, Sec. 4.3. The route designation is one of several decisions required to govern travel and transportation comprehensively. The BLM designated routes include all route-specific decisions and recorded in the national ground transportation linear feature dataset(s). Definitions and the designation criteria used in this decision making process stem from those provided for OHV areas in 43 CFR 8340.0-5(f), (g), and (h).

f) OHV Open Route. OHV travel is permitted where there are no special restrictions or no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting the timing or season of use, the type of OHV, or the type of OHV user.

g) OHV Limited Route. OHV travel on routes, roads, trails, or other vehicle ways is subject to restrictions to meet specific resource management objectives. Examples of restrictions include numbers or types of vehicles; time or season of use; permitted or licensed use only; or other restrictions necessary to meet resource management objectives, including certain competitive or intensive uses that have special limitations.

h) OHV Closed Route. OHV travel is prohibited on the route. Access by means other than OHVs, such as by motorized vehicles that fall outside of the definition of an OHV or by mechanized or non-mechanized means, is permitted. The BLM designates routes as closed to OHVs if necessary to protect resources, promote visitor safety, reduce use conflicts, or meet a specific resource goal or objective.

The CDCA Plan amendment being considered for the West Mojave Planning Area in this FSEIS only applies to those areas that are categorized as open or limited OHV use. Within limited OHV areas, routes may be designated as OHV Open, OHV Limited with restrictions on use, or OHV Closed, as identified in 43 CFR 8341.1 and 8342.1(a-d).

“The authorized officer shall designate all public lands as either open, limited, or closed to off-road vehicles. All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands; and in accordance with the following criteria:

- Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of Wilderness sustainability.
- Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

- Areas and trails shall not be located in officially designated Wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.”

The specific plan amendments, and their supporting rationale, are described in Section 2.1.1. In general, the purpose and need for these amendments is to:

- Conform to current TTM-related regulations and guidance;
- Provide a framework for future management of the transportation network;
- Update specific access parameters that are currently established in the CDCA Plan; and
- Update specific grazing parameters that are currently established in the CDCA Plan.

BLM implementation of the proposed amendments of the CDCA Plan would require approval by the BLM’s California State Director through a Record of Decision (ROD). This approval process would include the amendment of the CDCA Plan to adopt the provisions of the 2006 West Mojave Plan that were left in place, except as modified herein. Upon approval of the ROD, BLM will adopt any necessary CDCA Plan amendment. The decisions that would be necessary to implement each alternative are listed in Section 2.1.1 and 2.1.2.

Conforming to Current TTM-Related Regulations and Guidance

The MVA Element in the CDCA Plan states “at the minimum, use will be restricted to existing routes of travel.” This language was not specifically updated in the 2006 West Mojave Plan. In the Summary Judgment Order, the Court stated that BLM has the authority to amend the Plan to lift this restriction, as long as those amendments satisfy NEPA, FLPMA, and all other applicable statutes and regulations.

BLM has determined that a restriction of OHV routes to those that existed in 1980 does not comply with requirements of the following policy and regulations applicable to transportation planning:

- BLM regulations in 43 CFR 8342.1, which requires designation of public lands as open, limited, or closed to off-road vehicle use. All designations shall be based on the protection of resources of the public lands, safety of all users, and minimization of conflicts among the various uses of the public lands, and in accordance with the designation criteria provided in the regulation;
- BLM Handbook 1601-1, Appendix C, Comprehensive Trails and Travel Management, which consists of Off-Highway Vehicle Management Areas as open, limited, or closed;
- BLM Handbook 8342, Travel and Transportation Management Handbook, which describes how BLM is to comprehensively manage travel and transportation on public land; and
- BLM Manual 1626, Travel and Transportation Management Manual, which provides detailed policy, direction and guidance for the comprehensive management of travel and transportation on BLM-administered lands.

In order to modify the CDCA Plan to comply with the regulations and policies cited above in the West Mojave Planning Area, BLM has identified a need to replace the existing CDCA Plan language.

Providing a Framework for Future Management of the Travel Network

The new Travel Management guidance recommends adoption of smaller geographical units—Travel Management Areas (TMAs) based on commonalities, such as geography, patterns of use, common transportation issues, ease of management, and resource values. TMA objectives may also be adopted in the land use plan amendment to facilitate the implementation of proposed travel management strategies. The WMRNP plan amendment adopts initial travel management objectives for each TMA.

Updating Specific Access Parameters in the CDCA Plan

Consistent with the BLM 2012 Travel Management Handbook (BLM 2012) and 2016 Travel and Transportation Management Manual (BLM 2016), the proposed plan amendment would provide the framework for a comprehensive transportation and travel network on public lands in the West Mojave Planning Area, including consideration of both public and other (e.g., commercial and private) access needs and opportunities on public lands as part of the comprehensive transportation and travel network, recognizing the changing nature of access needs, and the relevance of non-motorized and non-mechanized as well as motorized travel on public lands.

As one element of the proposed changes, planning-level access parameters of the MVA element that may further minimize impacts from the network are under consideration, including lakebed designations and measures for stopping, parking, and camping areas adjacent to designated routes. Recreation Element access parameters that may further minimize impacts from the network are also under reconsideration, including the designation of competitive event corridors and guidelines for permitting competitive events. Boundary modifications to open, limited, and closed areas are being considered only insofar as legislative changes have occurred since the release of the 2006 West Mojave Plan. No other boundary changes to open, limited, or closed areas are proposed in this FSEIS.

Updating Specific Grazing Parameters in the CDCA Plan

The BLM grazing program was analyzed in the 2006 WEMO Plan, and the decisions from the planning effort led to grazing that was substantially curtailed in DT ACECs, formerly labelled DWMAs, with additional measures included for the allotments that are still available or potentially available for grazing. Grazing allotments that were vacant with no permittees or lessees were eliminated for livestock grazing use in the 2016 DRECP LUPA. Also, a mechanism for voluntary relinquishment of active leases was adopted in the WEMO Plan. In addition to these measures, a strategy of eliminating livestock grazing from desert tortoise recovery areas was recommended in the 1994 Recovery Plan. Although no longer specifically recommended in the 2011 Revised Recovery Plan, elimination of livestock grazing from public land within DT ACECs may be consistent with the recovery plan recommendation of “continuing to minimize impacts to tortoises from livestock grazing within tortoise recovery areas” (*Revised Recovery Plan for the Mojave Population of the Desert Tortoise*, May 6, 2011, Section 2.16, p. 78). Therefore, BLM is considering whether to further modify the BLM grazing program in the

WEMO Planning Area by reducing or eliminating grazing in DT ACECs through this land use planning effort.

1.2.2 Purpose and Need for Implementation Decisions

Plan-level decisions include the adoption of an overall travel management strategy and TMAs that identify the geographic extent of each implementation area. The particular implementation strategies for minimizing impacts from the network, identifying, managing, monitoring, mitigating, and eliminating routes in a route network are not plan-level decisions. Some implementation-level decisions are also area-wide, including general approaches and priorities for monitoring, mitigation, and law enforcement, which may quickly change as on-the-ground circumstances change. Other implementation-level decisions are location or route-specific, including route designations, route-specific minimization measures, and specific area outreach strategies. Implementation-level decisions may be made concurrent with or subsequent to plan-level travel management strategies.

By BLM policy, the process for designating travel routes is currently found in Bureau guidance issued in 2005 and subsequent releases, including the 2012 handbook and 2016 manual, as identified above. These guidance documents were released too late to be incorporated into the 2006 West Mojave Plan but have been considered in this planning effort. A broader range of alternatives would be considered, including at least one alternative that analyzes a less extensive route network for the West Mojave Planning Area than the No Action alternative. The route designations would exclude areas newly closed as a result of Wilderness legislation, would provide mechanisms for future route designations as lands are acquired by BLM, and would provide mechanisms to designate routes as available for use or as transportation linear disturbances, as deemed necessary and in conformance with regulations, plans, and NEPA requirements.

Concurrent implementation-level travel management plans were developed for the West Mojave Planning Area. Travel Management Plans (TMPs) have been created based on consideration of additional public input on the DSEIS travel management framework, on the route network alternatives and other draft implementation strategies, environmental effects, and proposed measures to mitigate impacts. Based on the input by the public and others on the DSEIS and alternatives, a proposed TMP has been developed for each proposed TMA from the DSEIS alternatives. The TMPs are being circulated with the FSEIS. TMPs were constructed for each TMA as allowed in the BLM's Travel and Transportation Handbook and guidance to determine the implementation level decisions needed for route management. The TMPs serve as guidelines for the BLM field management to prescribe management actions for ongoing route designation and other features related to routes such as: ground-disturbing activities, staging areas, data/inventory management, restoration, signing, monitoring, adaptive management, classification as transportation linear disturbances, easements, provisions and processes, law enforcement, standard operation procedures, and all other management actions related to travel management within the planning area (See Appendix G).

Future changes to the travel management implementation plans, refinement of TMA boundaries, and additional implementation plan objectives may be considered based on changing needs and issues, subsequent activity-plan monitoring, and implementation focus within the TMA, consistent with the parameters adopted in the WMRNP plan amendment.

1.3 Planning Issues

The planning issues addressed in this FSEIS have been developed from a variety of sources, including the original 2006 WEMO Plan, the issues identified by the Court in remanding the 2006 Plan to BLM for re-evaluation, transportation and travel management guidance issues, issues identified by other agencies and the public during EIS scoping, and other issues identified by BLM staff since 2006.

The Summary Judgment and Remedy Orders issued by the Court identified specific issues which require consideration by BLM in amending the CDCA Plan and conducting its analysis of impacts. In the Summary Judgment Order, the Court determined that:

- (1) The “decision tree” that the BLM used to designate OHV routes was flawed because it did not comply with regulations mandating that the BLM consider various “minimization criteria” when designating OHV routes;
- (2) Because the Plan authorizes numerous OHV routes that were not in existence in 1980, the Plan is inconsistent with the governing land use plan which limits OHV routes to those existing in 1980;
- (3) The Environmental Impact Statement was flawed because it did not contain a reasonable range of alternatives to the proposed action because all alternatives considered the same 5,098 mile OHV network, and because its discussion of the “no action” alternative was incomplete;
- (4) The EIS was flawed in that its analysis of route designation and/or grazing impacts on cultural resources, certain biological resources, and air quality, is incomplete; and
- (5) The court upheld the grazing program because it was more protective than the CDCA Plan itself.

The Court found that a remand to the BLM and partial vacatur of the 2006 WEMO ROD was warranted. During the Remedy Phase of the litigation, the Court ordered the BLM to:

- (1) Prepare a revised OHV route network that complies with the “minimization criteria”;
- (2) Either return to the 1980 OHV network or amend the CDCA Plan to lift the restriction on post-1980 routes;
- (3) Conduct a supplemental NEPA analysis; and
- (4) Revisit the grazing decisions within six months of the new ROD.

The court orders raise certain other planning issues in the West Mojave Route Network Project, including:

- Consistency with other agency planning goals and transportation networks,
- TMA adoption to facilitate implementation of adopted strategies,
- Consistency with the CDCA Plan goal to “provide a network of roads, primitive roads, and trails that serves the transportation needs for commercial and recreational and casual use of public lands while providing appropriate protection of natural and cultural resources appropriate to motorized vehicle access to public lands for commercial,

recreational and other purposes in a manner that is compatible with species conservation,”

- Compatibility with agency goals for and interagency consultations in consideration of sensitive resource values,
- Consideration of CDCA Plan and transportation and travel management issues and needs, including those identified in scoping and those not addressed in the 2006 WEMO Plan,
- Consideration of changes to CDCA Plan Limited Area site-specific designations to respond to planning issues,
- Consideration of changes to CDCA Plan Limited Area regional parameters, such as for Stopping, Parking and Camping in the WEMO Planning Area to respond to planning issues or in response to resource impacts,
- Consideration of implementation strategies that allow new issues as well as new transportation and travel management needs to be addressed as needed, and
- Clearly documented analysis and decision-making.

1.4 Planning Criteria

Planning criteria consist of the rules and other factors used to inform decisions about data collection, analysis, and decision-making during planning. Planning criteria include all applicable federal laws, regulations, executive orders, policies, and applicable portions of land use plans that BLM is required to follow. Policies include those in the Land Use Planning Handbook, H-1601-1 and Manual Section 1626, Travel and Transportation Management, and Handbook 8342, Transportation and Travel Management. The West Mojave Planning Area is entirely within the California Desert Conservation Area; some of the planning criteria are specific to the WMRNP planning effort. These planning criteria are listed below.

- Cooperate with local, State and federal agencies on the development of data and analyses for transportation management to promote network compatibility and cohesiveness.
- Cooperate with local, State and federal land management and regulating agencies, the California Desert Advisory Council, major land owners, conservation and interest groups, and the public to develop and refine data, issues, and analyses in support of viable and acceptable travel management decisions consistent with other West Mojave goals and objectives.
- Provide for ongoing consultation with American Indian Tribes and develop strategies for protecting recognized traditional uses.
- Include public participation as an integral part of the planning process.
- Inventory all routes of travel in the planning area, including washes that are being used as routes of travel as thoroughly and accurately as possible, and document the inventory to facilitate future update and modification.
- Identify a network that meets user needs, conservation goals, statutory and regulatory requirements, and BLM policy.

- Utilize and document the use of 43 CFR 8340.0-1 for designating public lands as open, limited or closed to the use of off-road vehicles and for establishing controls governing the use and operation of off-road vehicles in such areas.
- Utilize and document the use of 43 CFR 8342.1 to (1) provide for the protection of public land resources, (2) promote the safety of all users of the public lands, (3) minimize conflict among various uses of the public lands; and in accordance with the following criteria (See Appendix D-2 for criteria).
- Incorporate, where applicable and appropriate, management decisions brought forward from existing planning documents.
- Incorporate new information in the designation of routes, including resources data and wilderness designations, and the evaluation of impacts from grazing and the route network.
- Provide rationale for designating routes and a mechanism to change route designations should the rationale no longer be applicable, based on monitoring of use.
- Provide mechanisms to implement the route network that can be adjusted based on changes in the on-the-ground conditions.
- Identify the need and opportunity to cooperate with and apply strategies across jurisdictional boundaries through memoranda of understanding, interagency agreements and other mechanisms for better network cohesion and compliance, and to increase network utility across jurisdictions.
- To the extent consistent with public land laws, coordinate the WMRNP planning and management activities with the land use planning and management programs of other Federal departments and agencies, and of local and State governments, and of Indian Tribes, by considering the policies of their approved resource management programs.
- Make the Plan consistent with State and local plans to the maximum extent consistent with Federal law and the purposes of FLPMA.
- Ensure that Geographic Information System (GIS) and metadata information will meet Federal Geographic Data Committee standards, as required by Executive Order 12906. Follow all other applicable BLM data standards.

1.5 Court Issues Addressed in the SEIS

The SEIS has been developed specifically to ensure that issues identified by the Court in the 2009 Summary Judgment are addressed. The issues raised and the manner in which those issues have been addressed in the WMRNP, are summarized in Table 1.5-1.

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Sufficiency of Description of No Action Alternative</i></p> <p>Summary Judgment Order, Pg. 43, line 28 through Pg. 44, line 5.</p>	<p>The WEMO 2006 EIS did not sufficiently explain that the routes contained in the No Action Alternative included post-1980 routes, was larger than both the 1980 and 1985-1987/ACEC networks, and was smaller than the 2001-2002 inventoried network.</p>	<p>Appendix D of the FSEIS discusses the evolution of the route designations in the area since 1980, and how that process has resulted in the routes in the current network which are the basis of the designated route network in the No Action Alternative, and the basis for the comparison of impacts between alternatives. This description specifies that the No Action Alternative includes post-1980 routes, and describes how the No Action has changed over time based on the lack of clarity in the “existing routes” language and the incorporation of many partial inventories. Chapter 3.1 also discusses the relationship of the No Action Alternative to the larger universe of routes that constitutes the inventory of routes. All routes within the inventory will be designated in the WMRNP to determine whether they will or will not be available for use.</p>
<p><i>Sufficiency of Description of No Action Alternative</i></p> <p>Summary Judgment Order, Pg. 44, line 11 through Pg. 45, line 1.</p>	<p>The discussions of the No Action network throughout the WEMO 2006 EIS were not consistent. Instead of alternatives being compared only to the No Action Alternative, they were also compared to the 1985-1987 network, the 2001-2002 inventory, and the 2003 WEMO EA network. The Court stated that a single No Action network needs to be defined, described, and then used as the basis for comparison for all impacts.</p>	<p>The route network in the No Action Alternative is used consistently in the route analysis and discussion of impacts in Chapter 4 of the FSEIS. A single configuration of network designations was entered into the GIS database for each alternative, including the No Action Alternative. The GIS analysis then compared this single configuration to each of the sensitive resources included in the analysis, and generated metrics showing the coincidence and proximity of the routes to the resources. These metrics are presented in tables in Chapter 4, and the text in Chapter 4 summarizes the results. There is no discussion presented regarding relative impacts of the 1980, 1985-87/ACEC, 2001-2002, or 2006 networks, as these are not relevant to the comparison of the current network to the potential alternative networks, and the potential impacts of the alternative networks.</p>
<p><i>Inclusion of Post-1980 Routes in Alternatives</i></p> <p>Summary Judgment Order, Pg. 36, lines 13-18, and Pg. 43, lines 10-14.</p>	<p>The Court states that BLM can designate additional routes that did not exist in 1980 (Summary Judgment Order, Pg. 36, lines 13-16). However, to do so, BLM must actually amend the language that restricts the network to pre-1980 routes. That amendment would need to be done in accordance with NEPA and FLPMA, and would have to explain why inclusion of post-1980 routes is justified.</p>	<p>Chapter 1.2 describes BLM’s determination that the language restricting motorized routes to those existing in 1980 does not conform to BLM regulations in 43 CFR 8342.1, BLM Handbook 1601-1, or BLM Handbook 8342. Therefore, this FSEIS proposes to revise that language to conform to current regulations and policy. Thus, the BLM proposes to modify the MVA Element and to eliminate the current “Limited to existing routes” language and replace it with language to reflect that use will be “restricted to designated routes of travel”. This FSEIS acts as the mechanism for complying with NEPA and FLPMA in evaluating the impacts associated with this change in the language. Chapter 2.6 explains why developing alternatives that do not conform the CDCA Plan language to current regulations and guidance are not considered for analysis.</p>

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Criteria Used for Route Designations</i></p> <p>Summary Judgment Order, Pg. 24, line 20 through Pg. 25, line 11.</p>	<p>The Court provides an extensive analysis of the Decision Tree used in the WEMO 2006 EIS to demonstrate that it did not consider these factors (Summary Judgment Order, Pg. 18-30). According to the Court’s analysis, the only resource impacts considered in the Decision Tree include impacts to sensitive species. The Court’s analysis of the Decision Tree concludes that it does not address impacts to other resources, and even with respect to sensitive species, the analytical methodology heavily favors maintaining existing routes unless it can be shown that those routes are redundant. Also, the Court studied the route-specific designation forms to see if the other criteria were ever applied in making a route designation, and determined they were not.</p>	<p>The process used by BLM to evaluate impacts associated with the various route network alternatives is discussed in Appendix D of the FSEIS. This process included identifying and updating resource data, verifying its usefulness, consolidating all locations of 32 potentially affected resources for which such geographic data existed into the GIS database, and then comparing these locations to the route location. Appendix E of the FSEIS provides tables listing these resources, and Appendix D discusses how the 43 CFR 8342.1 criteria were used in order to establish a designation for each route within each alternative. This analytical output was augmented to factor in other, potentially affected resources and factors, including site-specific knowledge and other non-GIS database sources.</p>
<p><i>Reasonable Range of Alternatives</i></p> <p>(Same Mileage of Routes in Each 2006 WEMO Alternative)</p> <p>Summary Judgment Order, Pg. 40, line 11 through pg. 42, line 4.</p>	<p>As discussed in the Court’s Summary Judgment Order (Pg. 39), the alternatives considered in the WEMO 2006 EIS only varied in terms of type of designation (open or limited), and in terms of management prescriptions. The route network itself, on which OHV use was allowable, comprised the same 5,098 mile network in all seven alternatives analyzed.</p>	<p>Table 2.3-2 of the FSEIS shows the extent of the route network designated under each of the alternatives analyzed in the FSEIS. The different networks were developed by choosing a set of objectives; establishing minimization triggers to indicate a potential effect with respect to the 43 CFR 8342.1 based on proximity between route and resource or related factor for each of the 32 resources; and additional recreation and use data relevant to objectives, and then running a GIS analysis which generated the route designations for each alternative. The output was then augmented to factor in other resources not available in GIS and route knowledge, public input, and network needs. As can be seen in Table 2.3-2, the Alternative objectives, sensitivity analysis for minimization, and particular strategies selected to minimize effects resulted in a wide range of network sizes.</p>

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Soils</i></p> <p>Summary Judgment Order, Pg. 48, lines 16-18.</p>	<p>The Court acknowledged that the WEMO 2006 EIS contained a detailed discussion of the general impacts of OHV use on soils. However, the Court held that the EIS did not provide any discussion of the particular impact the proposed OHV route network would have on the soils that exist in the area (Summary Judgment Order, Pg. 48). The Court specified that the WEMO 2006 EIS does not need to have a route-by-route discussion of soil impacts, but should contain some specificity with regard to the resources present and the proposed route network.</p>	<p>The previous discussion of the general impacts of OHV use and grazing on soil was reviewed, and is updated in Chapter 4.3 of this FSEIS. The GIS analysis evaluated each of the alternative route networks, and made proposed route designations based on the potential for soil erosion along each route by analyzing the degree of slope crossed by the route, as well as by considering areas with documented soil erosion issues.</p>
<p><i>Grazing</i></p> <p>Summary Judgment Order, Pg. 48, lines 17-18. Pg. 42, footnote 33.</p>	<p>Although the Court’s Summary Judgment Order is substantially focused on OHV use, the suit filed by the Plaintiffs also alleged deficiencies in the analysis of grazing. The issue of grazing was addressed in limited portions of the Summary Judgment Order, and was held to be deficient in a few areas, including soils. The Summary Judgment Order (Pg. 48, lines 17-18) stated that the “. . . WEMO 2006 EIS should contain some discussion of the particular impacts on soils of the proposed Plan, both with regard to the designated OHV network, and livestock grazing”. Finally, the Summary Judgment Order refers to the Plaintiff’s claim that BLM should evaluate a wider range of grazing alternatives (Pg. 42, footnote 33) and concludes with “On remand, the BLM will consider a host of factors, including grazing issues, in its alternatives analysis.”</p>	<p>Table 2.3-3 of the FSEIS shows the extent of the grazing program that would be authorized under each of the alternatives analyzed in the FSEIS. Alternatives are considered that address further limitation of the grazing program in the WEMO Planning Area through the elimination of grazing on additional allotments for watershed and wildlife conservation. Impacts of grazing on resources, including soils, riparian, and other water-related areas including UPA, were evaluated and addressed through allotment-specific Environmental Assessments (EAs) conducted since 2006. The analyses from these EAs have been revisited, have been updated and incorporated into this document, and have been augmented based on the results of the analysis of FSEIS alternatives. Grazing allotments that were vacant were made unavailable for livestock grazing in the 2016 DRECP LUPA. The current status of the grazing allotments, and the conclusions from their EAs, are discussed in Section 3.7. The acres that would be reallocated from grazing purposes to wildlife conservation and ecosystem enhancement are discussed in Table 2.3-3, by alternative.</p>

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Cultural and Historical Resources</i></p> <p>Summary Judgment Order, Pg. 50, lines 10-24.</p>	<p>With respect to cultural resources, the WEMO 2006 EIS acknowledged that OHV use may have significant effects on such resources, but also stated that there was inadequate baseline data to determine the actual effect. The WEMO 2006 EIS also stated that the significance of the effect would be evaluated when specific actions were proposed, and that those activities would not be approved until compliance with Section 106 of the National Historic Preservation Act (NHPA) and consultation with the State Historic Preservation Office (SHPO) and Tribes had been completed. The Court agreed with the Plaintiffs' argument that this analysis is insufficient. The Court reviewed the Decision Tree and the Administrative Record, and found no indication that cultural resource impacts were considered in the route designation process. The specific WEMO 2006 EIS language cited by the Court was "the effect of BLM routes of travel on public land cultural resources has not been fully determined because information needed to assess effect is incomplete at the present time". The court determined that there was no evidence that a good faith effort was made to collect the needed information.</p>	<p>One of the 30 potentially affected resource factors included in the GIS analysis for the WMRNP was cultural resources, with a trigger mechanism based on each route and the associated stopping/parking/camping parameters, by alternative. Upon initiation of this FSEIS, BLM also initiated consultation with the State Historic Preservation Officer (SHPO) regarding measures needed to address the Court's and SHPO's concerns related to the cultural resource issues in the WEMO 2006 EIS. As a result of this consultation, BLM and the SHPO agreed to a program that includes the following:</p> <ul style="list-style-type: none"> • Update of the records searches for each travel route; • Consultation with tribes and interested parties; • Update of the BLM GIS cultural resources database; • Completion of the predictive model for each of the WEMO Subregions; • Class III surveys for specific undertakings that meet the requirements specified in the Programmatic Agreement; • Site visits at NRHP listed and one or more additional unevaluated sites in each subregion, as well as sites identified by tribes and interested parties as being sensitive; • Development of a methodology for effects determinations; • Development of protection, monitoring, and reporting procedures; and • Development of a Programmatic Agreement pursuant to 36 C.F.R. §800.14 (b). <p>BLM also currently utilizes the Supplemental Procedures for Livestock Grazing Permit/Lease Renewals: A Cultural Resources Amendment to the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer to address the NHPA Section 106 compliance for processing grazing permit renewals for existing livestock allotments. These measures are discussed in Section 3.9 of this FSEIS.</p>

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Unusual Plants Assemblages (UPAs) and Riparian and Water Resources</i></p> <p>Summary Judgment Order, Pg. 51, lines 15-19. Remedy Order Pg. 15</p>	<p>The Court’s conclusion regarding water-based UPA and riparian and water resources referred back to the Plaintiffs’ discussion of soil resources. Similar to soils, the WEMO 2006 EIS generally discussed the impact of OHV use and grazing on these UPA/riparian resources. However, the WEMO 2006 EIS did not discuss any impacts of the specific route network on any specific UPA/riparian resources. Similar to soils, the Court does not require a route-by-route discussion, but does require a discussion that is specific to the area and alternatives. The Remedy Order also required BLM to implement additional information gathering and monitoring regarding riparian areas and UPAs, including new proper functioning condition (PFC) assessments for all of the springs and seeps in the WEMO area.</p>	<p>The specific locations of designated water-related UPA, known riparian areas, and surface water resources were incorporated into the GIS database used to analyze the route network alternatives. These locations were incorporated into 3 of the 32 location-specific natural and cultural resources for which geographic data were compared to the route networks, and for which mitigation and designation triggers were developed. A general discussion of impacts to these resources from motorized vehicle use and grazing is provided in Chapter 4. The results of the GIS analysis are also presented in Chapter 4, including a summary of the length of routes in close proximity to known UPA, riparian, and water resources for each alternative. Finally, updated information on the current condition of each riparian area has been evaluated through Proper Functioning Condition (PFC) assessments conducted since the 2006 WEMO Plan. The results of those assessments are provided in Chapter 3. These assessments continue and as new data is collected, the results will be integrated into the baseline and analysis, including for grazing. The findings that result from these PFC assessments that identify impacts from grazing will trigger management actions that would mitigate identified impacts, if any.</p>

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Sensitive Species – Mojave Fringe-Toed Lizard</i></p> <p>Summary Judgment Order, Pg. 51, lines 13-20.</p>	<p>The Court’s rejection of the Mojave fringe-toed lizard analysis was based on a comparison of two statements in the WEMO 2006 EIS. In the Species Account for the lizard, the text stated that there is no recent data on population status and density. However, the effects analysis stated that the primary routes would cover about one-fourth of the occupied habitat, and still concluded that the routes would not impact the species. The Court held that, after acknowledging that there was limited data and that the routes covered one-fourth of the habitat, the conclusion that there were no impacts was not supported by any factual basis. In addition to the findings of the Summary Judgment Order, the Remedy Order (Pg. 14-15) required BLM to implement additional information gathering and monitoring regarding the status of the Mojave fringe-toed lizard and its habitat.</p>	<p>Mojave Fringe-toed lizard (MFTL) monitoring began in the West Mojave in the spring of 2012 in three Mojave River parcels. In 2013 monitoring was expanded to the remaining MFTL ACEC parcels including three other Mojave River parcels and a representative location in Twentynine Palms Marine Corps Air Ground Combat Center (29 Palms MCAGCC). In addition, monitoring was conducted in Edwards North, Cuddeback Dry Lakebed, Big Rock Creek Wash and Piute Butte the same year. The results of the surveys are discussed in Section 3.4, and the results have been incorporated into the analysis of the route network.</p>

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Air Quality</i></p> <p>Summary Judgment Order, Pg. 53, line 24 through Pg. 54, line 1. Remedy Order Pg. 9, lines 19-22. Remedy Order Pg. 14.</p>	<p>The Court evaluated several objections raised by the Plaintiffs with respect to the sufficiency of the air quality analysis. Of these, the Court held that BLM only analyzed the impact of air emissions on OHV Open and OHV Limited routes, but did not analyze the impacts of OHV emissions that would occur within open areas. Further discussion of air quality was provided in the Court’s Remedy Order dated January 28, 2011.</p> <p>The WEMO 2006 EIS concluded that, because the projected population growth in the planning area is lower than the projections used in the regional transportation plans and conformity statements, precursor emission levels would be lower than the budget established in the regional plans, and the WEMO 2006 EIS conforms to the State Implementation Plan. Because all emission levels were below de minimis levels, BLM concluded that no further conformity analysis was necessary and a formal conformity determination was not required. On pg. 9, lines 19-22 of the Remedy Order, the Court vacated the finding of consistency with the Clean Air Act, because it did not include an analysis of emissions from Open Areas. In addition, the Order (Pg. 14) required BLM to implement additional information gathering and monitoring regarding air quality in and around the Open Areas.</p>	<p>BLM coordinated with the California Desert Air Working Group (CDAWG), which included the five air districts within the WEMO Planning Area, to supplement its air quality analysis and develop a strategy to comply with the Remedy Order. To demonstrate compliance with the Remedy Order, BLM contracted with the MDAQMD to compile the results from the 46 ambient air monitoring stations in a report to BLM (included in Appendix E). The report concluded that OHV Open Areas are not a significant contributor to either total unpaved road dust or fugitive windblown dust subcategories, and are thus not a significant contributor to regional PM10 emissions. A detailed evaluation of the MDAQMD report is presented in Section 3.2 of this EIS. The WEMO Plan Conformity Analysis was re-visited for this FSEIS, based on the additional information provided in the Air Quality Analysis report, and the results are presented in Section 4.2 of this FSEIS.</p>

Table 1.5-1. Court Issues Addressed in the FSEIS

Court-Identified Issue	Description	Action Taken in the FSEIS
<p><i>Cumulative Analysis</i></p> <p>Summary Judgment Order, Pg. 54, lines 11-16.</p>	<p>The Court’s Summary Judgment Order did not conduct a specific analysis of the cumulative impact analysis in the WEMO 2006 EIS. The Court concluded that, because the specific impact analysis (especially with respect to soils, cultural resources, and water and riparian resources) was deficient, the cumulative analysis was also deficient. Since these analyses are to be re-done, the Court chose not to address the Plaintiffs specific arguments.</p>	<p>The specific analysis deficiencies cited in the Court’s Summary Judgment Order have been addressed in this FSEIS as discussed throughout this table. The cumulative analysis has also been modified from that done in the 2005 WEMO Final EIS by updating the lists of other past, present, and reasonably foreseeable future projects and activities in the area, and incorporating additional recent information on known impacts from those projects and activities.</p>

CHAPTER TWO ALTERNATIVES

This FSEIS supplements the 2006 WEMO Plan and has been developed to be consistent with the goals and objectives of the CDCA Plan, as amended, which remain in effect where pertinent to public lands. The conservation goals of the 2006 West Mojave Plan are to develop a regional biological strategy to conserve plant and animal species and their habitats and to prevent future listings; and to provide an equitable and cost-effective process for complying with threatened and endangered species laws. More specific conservation objectives and strategies associated with the various plant and animal species are outlined in Chapter 2 of the 2006 WEMO Plan. This chapter describes the Land Use Plan (LUP)-level decisions and implementation-level activity decisions that are analyzed in Chapter 4 of this FSEIS.

New disturbance limitations were adopted for many sensitive areas in the 2006 WEMO Plan, which also established a general limitation on new road construction across broad landscapes. A few of the conservation objectives and strategies associated with various species also imposed specific parameters for transportation management in identified locations. The 2006 WEMO Plan also made changes to grazing allotments to achieve conservation goals and objectives. In 2016, the disturbance limitations and specific conservation strategies in the WEMO Plan were further expanded in the DRECP LUPA, which also amended the CDCA Plan. These updates have been reflected in the development of the route network alternatives and a plan amendment that would modify grazing allotments, which are analyzed in Chapter 4.

The No Action Alternative (Alternative 1) and four action alternatives (Alternative 2, 3, 4, and 5) are described in this chapter and the effects of each are analyzed in Chapter 4. Alternatives 2 through 4 were developed for analysis and consideration in the DSEIS, which was issued for public comment in March, 2015, and re-opened for an additional public comment period in September, 2015. Alternative 4 was re-developed as the Draft Proposed Action and was evaluated, along with three other alternatives, in the 2018 Draft SEIS (DSEIS) following BLM's adoption of the DRECP LUPA in 2016. Alternative 5 was developed following agency review of public comments on the 2018 DSEIS. Most of the elements of Alternative 5, including the proposed goals and objectives, plan amendments and implementation strategies, are the same as Alternative 4. The only difference between Alternative 5 and Alternative 4 is a revision of the proposed route network, based on public comments and designation changes that adhere to Travel and Transportation Manual 1626 and 43 CFR 8342.

These alternatives provide both a framework for route designation and an implementation-level transportation network and strategies to manage the risks and evaluate impacts of the transportation system on resources and resource uses. In addition, one alternative in this chapter and analyzed in Chapter 4, Alternative 2, evaluates elimination of livestock grazing within DT ACECs.

The range of alternatives also addresses the Court's direction that at least one of the alternatives analyzes a less extensive route network. This is accomplished in Alternative 2.

2.1 Land-Use Plan Management, CDCA Plan Amendment, and Implementation Decisions to be Made

The WMRNP requires both LUP-level decisions and implementation-level activity decisions to be made to accomplish the Purpose and Need.

2.1.1 Land-Use Plan - Level Decisions

The WMRNP is in response, in part, to the US District Court's Summary Judgment and the Remedy orders that are available on BLM's West Mojave website at (<https://www.blm.gov/programs/planning-and-nepa/plans-in-development/california/west-mojave-route-network-plan/court-documents>). The Court vacated the route designation portion of the 2006 WEMO Plan and ordered BLM to revisit certain aspects of the 2006 WEMO Plan and its route designation decisions. In addition, Wilderness legislation passed subsequent to the 1994 California Desert Protection Act (CDPA) has yet to be incorporated into the MVA Element of the CDCA Plan. Thirdly, BLM has adopted a Bureau-wide TTM System which provides for more inclusive travel management decisions. Finally, the CDCA Plan includes some mitigation measures for access and use impacts that are being revisited. BLM is considering here the extent to which these are still appropriately plan-level decisions.

The Motor Vehicle Access LUP-level decisions are being made at two levels:

- A. Establishment of the general travel management framework goals and objectives for access and use management in the West Mojave Planning Area. This includes establishment of Travel Management Areas (TMAs) as the geographical basis for implementation of the route management plans, and establishing the goals and objectives to be accomplished with the resulting transportation network; and
- B. Adoption of specific Plan Amendment decisions that are necessary to address 2006 WEMO Plan inconsistencies with the CDCA Plan's MVA Element, and/or would support the goals and objectives of the CDCA Plan as amended. Some of the planning-level decisions identified in the Proposed Action or alternatives specifically respond, in part, to the US District Court findings and remanded portions of the 2006 WEMO Plan, as discussed later in this chapter.

The Livestock Grazing LUP-level decisions include:

- A. A Livestock Grazing Program Plan Amendment is being considered that would eliminate remaining grazing in DT ACEC and critical habitat in response to the Summary Judgment Order that required BLM to consider a host of factors, including grazing issues, in its alternatives analysis.

Specific planning decisions to be made in the WMRNP include LUP-level decisions which are amendments to the CDCA Plan. The LUP-level decisions are summarized in Table 2.1-1.

Table 2.1-1. Summary of LUP-Level Decisions in the West Mojave Route Network Project

Component	Affected Section of CDCA Plan ¹	Summary of Plan Amendment
Plan Amendment Decisions to be Made Under All Action Alternatives		
PA I: Change the CDCA Plan language that limits the WEMO route network to existing routes of travel as of 1980.	Pg. 77, Limited Area, reference to “existing routes of travel”. Similar language on Page 81, Interim Management. Also, Table 1, Line 14.	Modifies the MVA Element to eliminate the current “Limited to existing routes” language and replaces it with language to reflect that use will be “restricted to designated routes of travel”.
Plan Amendment Decisions Which Would be Varied Among Alternatives		
PA II: Designate Framework by adopting TMAs and associated objectives.	Not designated in current CDCA Plan	TMAs would be identified, in accordance with BLM’s TTM Handbook, to facilitate travel management planning.
PA III: Update parameters for organized competitive event access and corridors.	Pg. 71, parameters for management of competitive events.	The Plan amendment would update specific parameters for the management of organized competitive OHV events.
PA IV: Modify general use designations related to washes, sand dunes, and dry lakes.	Pg. 78, discussion of Washes, Sand Dunes, and Dry Lakes, and Table 9.	The Plan amendment would update the descriptions of approved uses to specific wash, dune, and dry lake areas.
PA V: Change the 2006 WEMO Plan limitations on OHV use into the Rand Mountains-Fremont Valley Management Area.	2006 WEMO Plan ROD, Pg. 15-16.	Eliminate the requirement for a permit, obtained through a formal process, to enter the designated network in the Rand Mountains-Fremont Valley Management Area.
PA VI: Change the CDCA Plan and WEMO Plan limits on stopping and parking adjacent to designated routes in the WEMO Planning Area.	Pg. 78, Stopping and Parking	The CDCA Plan’s limitation on stopping and parking more than 300 feet from the centerline of routes of travel would be modified to meet OHV access and use resource protection objectives.
PA VII: Reallocate Animal Unit Months (AUMs) and modify allotment boundaries for those allotments in DT ACECs.	Pg. 58, Allocations for livestock grazing	Eliminate remaining livestock grazing in DT ACECs through Alternative 2.

¹ – Describes location of current text in the CDCA Plan (1999 reprint) or 2006 WEMO Plan for which modification is being considered. No changes to the specific language within the 2016 DRECP LUPA are proposed, and no changes other than those specified in this table are being considered.

The Proposed Action and other action alternatives include Plan Amendment decisions to address inconsistencies between the CDCA Plan, the 2006 WEMO Plan, and current regulations and policy, as well as to provide a consistent basis for analysis of alternatives. The No Action alternative would not resolve these inconsistencies; existing plan decisions would stay in place. Other CDCA Plan Amendment decisions are also being considered under the Proposed Action and other action alternatives in order to meet specific motor vehicle use goals and objectives of the alternatives and to address other aspects of the Court orders. In addition, one of the action alternatives considers elimination of grazing in remaining DT ACEC by reallocating forage from

livestock to wildlife use and ecosystem function. The rationale for and specific description of each plan amendment decision are provided in the following subsections.

Of the following plan amendments, none would be made under the No Action Alternative (Alternative 1). The amendment in PA I would be the same under each of the action alternatives (Alternatives 2, 3, 4, and 5), while the other amendments (PA II through PA VII) would vary among the action alternatives. The variation among amendments PA II through PA VII is described in Section 2.3, Comparison of Alternatives.

PA I: Limiting Route Network to 1980 Baseline

The current language in the CDCA Plan within “Limited” areas provides a 1980 inventory that is interpreted to be the universe of routes from which “approved routes” can be identified. The CDCA Plan’s MVA Element discussion of allowable vehicle use in OHV “Limited” areas reads as follows:

“At the minimum, use will be restricted to existing routes of travel. An existing route of travel is a route established before approval of the Desert Plan in 1980, with a minimum width of two feet, showing significant surface evidence of prior vehicle use or, for washes, history of prior use.”

The language creates an unmanageable situation 35 years after the approval of the CDCA Plan. For one thing, the 1980 route network continues to be in dispute due to the limitations of the source data. Also, there is much confusion over the interpretation of the sentence “At the minimum, use will be restricted to existing routes of travel.” Also, the 1980 network has undergone substantial changes, both planned and unplanned, and applied to a public land base that is significantly different than it was in 1980 as a result of major acquisitions, donations, and exchanges.

Ultimately, the language in the CDCA Plan no longer serves current transportation and travel management needs, and there is no assurance it responds appropriately to sensitive issues. The existing routes language as it is currently interpreted is also in conflict with how route designation was conducted in the 2006 WEMO Plan, in various ACEC Plans, and in approving rights-of-way and other permits since the approval of the 1980 CDCA Plan. In response, BLM proposes to revise the CDCA Plan to be consistent with current regulatory and management policy regarding designation of routes for motorized vehicle access (OHV Open and OHV Limited use), and to provide a mechanism for designating, limiting, or classifying transportation linear disturbances as new issues arise, on-the-ground information or needs change, and new public lands are acquired.

Based on a review of the Court’s Summary Judgment order, BLM has determined that the language in the 1980 CDCA Plan restricting travel to existing routes does not conform to the procedures required in BLM’s TTM Handbook. The TTM Handbook establishes procedures for making route designations, including establishing new routes, and makes no reference to restricting BLM from establishing new routes. Also, BLM’s other management responsibilities under FLPMA, including providing access for minerals exploration and issuing rights-of-way, leases, and other grants for new and existing facilities, demands consideration of new routes to provide access to those activities and facilities. The CDCA Plan recognized FLPMA access needs and made a distinction between public access and authorized access. The TTM Handbook recognizes the interconnected nature of transportation and travel, whether for public access or

access for specified users, uses, or to access non-public lands. Now, in compliance with the requirements of the Court, the current planning action considers modifying the CDCA Plan language that appears not to be in conformance with the current TTM guidance and which appears inconsistent with BLM's other management responsibilities under FLPMA.

As a result, the BLM proposes to modify the MVA Element and to eliminate the current "Limited to existing routes" language and replace it with language to reflect that use will be "restricted to designated routes of travel". The specific routes, as well as additional mechanisms and thresholds for their modification, would be identified and updated in travel management plans and through other mechanisms to keep the plans current. Broader network thresholds may be established at the LUP level for the entire network, and at the LUP or Activity Plan level for particular TMAs, or other appropriate polygons.

PA II: Designate Framework by Adopting TMAs and Associated Objectives

The 2012 BLM TTM Handbook specifies that BLM can delineate TMAs that meet the LUP objectives for each alternative. TMAs may be developed based on areas with unique or shared circumstances, high levels of controversy, or complex resource considerations. TMAs are an optional planning tool to frame transportation issues and help delineate travel networks to address specific uses and resource concerns. Based on the large size of the WEMO Planning Area, BLM proposes to identify TMAs to facilitate the development of activity plans. Each TMA would ultimately have an established set of objectives that govern the designation of the transportation network, as well as future changes to the network, based on the alternative selected for that TMA. Alternatives 2 and 3 evaluate establishment of eight TMAs, while Alternatives 4 and 5 evaluate establishment of nine TMAs.

PA III: Update Parameters for Competitive Event Access

The 1980 CDCA Plan allows organized competitive events to be permitted on routes, subject to specific parameters, and based on multiple use class. The intent was to readdress the use of routes for competitive events when route designation occurred (CDCA Plan, Recreation Element, p. 71).

The language regarding designation of specific routes for competition ("C" routes) is being updated in the CDCA Plan and being relocated from the Recreation Element to the MVA Access Element to be consistent with current policy, and to consider route designations on a route-specific level, consistent with minimizing impacts per 43 CFR 8342.1. The previous CDCA Plan language linking competitive events to multiple use class is no longer applicable, as multiple use classes were eliminated under the DRECP LUPA. The language would be updated in Alternatives 2, 3, 4, and 5 but would remain as it is under the No Action Alternative.

The 2006 WEMO Plan eliminated two of the three remaining long-distance race courses in the WEMO Planning Area: the Barstow-to-Vegas motorcycle race course and the Johnson Valley to Stoddard Valley race course. The Johnson Valley to Parker Race Course was left in place. The availability of these race courses for competitive events would be reconsidered for specific route designations in light of the current on-the-ground situation in conformance with 43 CFR 8342.1 designation criteria.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

The 2006 WEMO Plan modified access parameters to allow OHV travel only in those washes that are designated as “open routes” (OHV Open use) and signed as appropriate (2005 WEMO FEIS, p. 2-156). Previously use of washes was based on the Multiple Use Class (MUC) of the area within which they were located (CDCA Plan, 1999 rewrite, p. 78). This approach is consistent with minimizing impacts per 43 CFR 8342.1 on a route-specific basis. Specific route designations for routes within washes are being considered within the context of the designation criteria.

Access on most dry lakes is subject to the access parameters of the surrounding lands. In limited areas within the WEMO Planning Area, generally specific route designations would be identified for routes, including for routes across dry lakes. However, based on the unique geography of these areas, “routes of travel” cannot be readily delineated across many lakebeds. Therefore, many dry lakes within the CDCA, including in the WEMO Planning Area are designated as either OHV Open or OHV Closed to vehicular travel regardless of the access parameters of the surrounding lands in which the lake beds are located. The lakebeds which were so identified are listed in Table 9 of the CDCA Plan, MVA Element (1999 reprint, p. 78). Since that time, the lakebeds in the Parish’s Daisy ACEC were “closed”.

Four additional lakebeds are now being considered for lakebed-specific designations, based on changes in condition. The dry lakes are Koehn, Cuddeback, Coyote (the one northeast of Calico lakebed), and Chisholm Trail (south of Calico Ghost Town). Under the No Action Alternative, there would be no changes to access across dry lakes, as designated in the CDCA Plan and amended by the 2006 WEMO Plan. Koehn lakebed would remain designated as OHV Open use, Cuddeback and Coyote lakebeds would remain designated consistent with the surrounding area. Under Alternative 2, Koehn Lakebed would be OHV Closed use, and Cuddeback and Coyote dry lakebeds would remain “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”. Under Alternatives 3, 4 and 5, Koehn Lakebed would remain “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and Cuddeback and Coyote dry lakebeds would be designated as OHV Open use, subject to specific minimization measures. Chisholm Trail dry lakebed would be closed to all types of human use as a result of potential adverse effects to public health concerns due to historic mining.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

The 2006 WEMO Plan adopted limitations on vehicle access into the Rand Mountains-Fremont Valley Management Area, by requiring a user education orientation program session developed in consultation with local jurisdictions and a permit to access this area. This was adopted as a trial measure to assess its effectiveness to minimize resource impacts in the area. Other measures implemented included substantial fencing on major through routes and restoration of non-designated routes. In the intervening years, the use of this strategy has come under review. Under this plan amendment, the permit system in the Rand Mountains-Fremont Valley Management Plan is being considered for elimination and replacement by alternative compliance strategies, based on operational experience. Under the No Action Alternative and Alternative 2, the area would be managed consistent with parameters outlined in 2.2.1.2.4 of the 2005 WEMO

FEIS, including the continued implementation of a visitor use permit program for those desiring to use vehicles in the Rand Mountains. Under Alternatives 3, 4, and 5, the permit system established for motor-vehicle access to the Rand Mountains-Fremont Valley Management area would be replaced with an intensively managed route network with an OHV Limited use designation.

PA VI: Modify Stopping and Parking Limitations

The CDCA Plan MVA Element specified that stopping, parking, and camping along routes of travel is limited to within 300 feet of the centerline of the route. The 2006 WEMO Plan modified these parameters to further limit stopping and parking in DWMA's to within 50 feet of the centerline of the route, and camping within DWMA's would need to occur adjacent to routes in previously disturbed areas.

BLM is now considering alternatives that would allow the 300-foot planning area-wide limitation to be changed, and clarify camping limitations, to minimize impacts from the route network on a planning area-wide basis. Under the No Action Alternative, the parameters would remain the same as in the 2006 WEMO Plan, which includes a 50 foot limit of the centerline of the route within DWMA's (now DT ACECs) and 300 foot limit of the centerline of the route outside of DT ACECs. Alternative 2 would establish a limit of 50 feet of the centerline of the route outside of DT ACECs. Alternatives 3, 4, and 5 would establish a limit of 100 feet of the centerline of the route outside of DT ACECs with use limited to previously disturbed areas.

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

The 2006 WEMO Plan modified the CDCA Plan Livestock Grazing Element to provide for desert tortoise recovery, by making livestock grazing unavailable or further restricting grazing in DT ACEC. Under Alternative 2, livestock grazing would be discontinued in DT ACECs designated by the BLM and Critical Habitat Units (CHUs) designated by the USFWS, with the exception of a small horse allotment, the Valley Well Allotment. Through this land-use planning change, lands would no longer be available for livestock grazing in portions of three active allotments, consistent with 43 CFR 4130.2 (a). The affected active allotments in DWMA's and CHU include portions of Ord Mountain, Cantil Common, and Shadow Mountain allotments. These allotments would have their boundaries adjusted to remove the DT ACECs and CHU from the allotments. The AUMs in the DT ACEC and CHU portions of the allotments would be reallocated from livestock forage to wildlife use and ecosystem functions. No changes to livestock grazing allotments would be made in the No Action Alternative or Alternatives 3, 4, or 5.

2.1.2 Implementation-Level Decisions

LUP-level decisions establish the decision space for transportation access implementation decisions. Implementation-level strategies include the following:

- Activity plans for each TMA include:
 - Specific goals and objectives, strategies, and priorities for action;
 - On-the-ground access upgrades or modifications other than route designations;

- The adopted route network; and
 - Actions to implement all elements of the activity plans and of supporting implementation plans, including but not limited to ACECs, CDNCLs, DT ACECs, national monuments, Wilderness, Wilderness Study Areas, and Lands Managed for Wilderness Characteristics.
- Supporting activity plans, such as monitoring, law enforcement, and route rehabilitation plans (See Appendix G for a list of compliant methods for route rehabilitation and restoration).
 - Mechanisms for changes within the scope of the activity plan objectives.

The transportation and travel network integrated into each of the activity plans will identify routes, trails, and primitive routes on public lands outside of OHV Open Areas that meet the goals and objectives of the LUP, consistent with CDCA Plan goals and objectives for the conservation of sensitive plant and animal species. The activity plans include the area-specific transportation networks and associated strategies for the management of travel on public lands within the WEMO Planning Area outside of OHV Open Areas. The designated transportation route network that is ultimately adopted in any specific area will depend on many factors, including the LUP framework and activity plan goals and objectives, feedback from the public and other interested parties, and the specific measures selected to minimize impacts and to other resource values. The proposed activity plan for each of the TMAs is in Appendix G.

On February 12 2016, President Obama designated the Mojave Trails and Sand to Snow National Monuments. BLM has the responsibility for the care and management of the objects described in the Presidential Proclamations under the Antiquities Act of 1906. The Proclamations directed the BLM to prepare a management plan for each national monument, and BLM specifically must develop a transportation plan for the Mojave Trails National Monument. Both national monuments are partially within the WEMO Planning Area. Route designations made through this process in the national monuments are meant to serve as a baseline route network that may be revisited during the national monument planning processes. The BLM created a new TMA for the portions of each national monument that are within the WEMO Planning Area. This has allowed the BLM to ensure that baseline route designations are consistent with the care and management of national monument objects. More specific goals and objectives may be found in Appendix G.

2.1.2.1 The Use of the “Baseline” of Routes in the Development of Alternatives

As discussed in Section 1.1.3, the court requested that BLM clarify the source of the baseline route network used for identifying and evaluating the impacts of the Proposed Action, No Action Alternative, and other action alternatives. The court agreed that the baseline should reflect the status quo, which is the actual route inventory existing on the ground. The court directed that the discussion of the baseline should describe how it came to be different from the 1980 route network, but that it need not be defined as the 1980 network.

To define the baseline, the BLM began two efforts in 2012 that would provide a comprehensive baseline of routes for the West Mojave Planning Area. BLM updated the inventory of linear features by tracing features from United States Department of Agriculture’s (USDA) one meter-resolution National Agriculture Imagery Program (NAIP) aerial photography into the Ground

Transportation Linear Features (GTLF) geospatial database. The inventory consisted of the WEMO Plan network (as corrected), and other linear features that currently exist on the ground, to ensure that all existing features were included in the analysis. Note that this inventory reflects the on-the-ground features existing as of 2013, and thus includes features that existed in 1980 or were developed after 1980 through BLM authorization. In addition, the inventory includes features which resulted from unauthorized routes. It also reflects substantial improvement in technical accuracy, as most of the “new” features are simply the result of better photography since 1980 and were not detected at that time. The total mileage and acreage associated with the inventoried routes is presented in Table 2.1-2.

Table 2.1-2. Baseline - Inventoried Linear Disturbance

Use Description	Mileage/Acreage
Total Mileage	15,235
Direct Acreage (based on 12 foot width of routes)	21,870.9

1 – This total represents approximately 0.7 percent of the 3.1 million acres of public land in the planning area.

Despite the language in the 1980 CDCA Plan that motorized vehicle use would be restricted to existing routes of travel, the resulting baseline includes many routes that were not part of the 1980 route network. The inventory is also larger than previous inventories associated with the 1985-1987/ACEC network, the 2001-2002 inventory, and the 2006 WEMO Plan. The inventory is approximately 7,235 miles more than the inventory for the 2006 WEMO Plan indicated, as identified in the 2006 WEMO Plan and discussed further in Chapter 3. As discussed in Section 1.1.4, the increase in the inventory over previous inventories is due to several factors, including public land acquisitions, improved aerial photography technology, improved electronic data storage, and correction of previous mapping errors based on magnetic alignment. BLM’s sample review of the recent and earlier route inventories indicates that these routes have been in existence for some time.

The previously undocumented routes that were found in the linear disturbance inventory, but were not identified in any previous inventory were considered transportation linear disturbances in the No Action Alternative regardless of when those routes may have been physically created, unless they have been determined to be limited to authorized users, under current permit or other authorizing instrument. This is consistent with the requirement in the 2003 Decision Record for the Western Mojave Off Road Vehicle Designation Project that routes are considered transportation linear disturbances unless they are signed as “open”. Based on these assumptions the miles of actual classification as transportation linear disturbances as a result of the 2006 WEMO Plan is substantially higher than the number that was actually reported in the 2006 WEMO Plan.

Decisions as to whether and how to implement designations as transportation linear disturbances are being made on all linear disturbances based on 2009 aerial photography compiled as of January 31, 2013. Route inventory corrections identified between January 31, 2013 and the 2018 DSEIS have been incorporated into the FSEIS.

Routes that are discovered or developed after adoption of this amendment will be evaluated for addition, exclusion, limitation, development, or reclamation, based on the parameters of the adopted LUP amendment and travel management plan. Routes that are considered for inclusion in the route network in the future, must be consistent with the regulations of 43 CFR 8342.1, current BLM policies, goals of the CDCA Plan, as amended, applicable travel management plans and other pertinent area plans, and include compliance with other laws and regulations including but not limited to ESA and NHPA compliance.

Allowances for vehicle stopping, parking, and camping along routes of travel greatly increase the potential for new ground disturbance and the calculated acreage of disturbance. This is a problematic acreage to quantify in the baseline, because it is based on pre-2006 WEMO Plan “existing routes” in many areas, where the route network had not been clarified as major land acquisitions occurred over time. Following the 2006 WEMO Plan, with the establishment of DWMAAs as ACECs and their associated stopping and parking limits, the potential area of disturbance was reduced in the DWMA areas. Following the 2016 DRECP LUPA, DWMAAs have been replaced by DT ACECs, but the stopping, parking and camping limitations applied to DWMAAs in 2006 WEMO still apply in those areas.

The percentage of actual use in the camping, parking and stopping zone is less than 1 percent of the designated zone planning area-wide. In many regions, group campers utilize previously disturbed areas along the route that may have level ground, campfire rings and fewer obstacles to vehicle access and parking, particularly for larger and heavier RVs and two-wheel drive vehicles. In other areas, dispersed camping along the route results in negligible permanent disturbance.

Each of the alternatives analyzed in the FSEIS were developed by identifying the resource protection and transportation access and use objectives to be accomplished by the alternative, as discussed in Section 2.2. Then, for each alternative, the three components of the alternative were developed as follows:

- The travel management framework that would achieve the alternative-specific objectives for access and use management in the WEMO Planning Area was established. This included delineation of TMAs to serve as the geographical basis for implementation of the route management plans;
- The language of the CDCA Plan Amendment that is required to bring the CDCA Plan into conformance with other policy and guidance, and to meet the objectives of the alternative, was developed; and
- The travel network, including appropriate minimization and mitigation for each individual route segment in the inventory to meet the objectives of the alternatives, was developed.

The selected alternative will be used to replace Section 2.2.6 of the 2006 WEMO Plan.

2.1.2.2 Conservation and Management Actions (CMAs) Conformance

The route designations made under the WMRNP are required to conform to the applicable LUP, which includes:

- Land use allocations, including the goals and objectives established for those allocations in the CDCA Plan, as amended;

- The Conservation and Management Actions (CMAs) adopted in the DRECP LUPA; and
- The management objectives established for special designation areas in their applicable management plans.

For each resource, CMAs were adopted as part of the DRECP LUPA to govern activities with respect to their location, affect to species, procedures to be used, and type of analysis required before the activity can be authorized. CMAs are the specific set of avoidance, minimization, and compensation measures, and allowable and non-allowable actions for siting, design, pre-construction, construction, maintenance, implementation, operation, and decommissioning activities on BLM land. CMAs are required for different resources and land allocations.

The designation of routes under the WMRNP does not authorize new ground disturbance. Thus, it does not conflict with any LUP or CMA requirements for the project area and would not require mitigation/compensation to be used for existing ground disturbance. Future re-routes, if needed to address routes that have unacceptable resource impacts or are needed to re-establish connectivity, would be implemented following the procedures required in the CMAs and guided by the TMPs. The applicability of the individual CMAs to the WMRNP is addressed in Appendix H.

The CMAs include avoidance and setback distances from protected resources, and disturbance cap limitations for specified areas. In general, the resources addressed by setback and disturbance cap limitations are associated with vegetation, wildlife, soil, and riparian resources. Because newly designated routes that result in new ground disturbance are also subject to the CMAs, their location must be evaluated to verify conformance with setback distances and effect on disturbance cap limitations. In addition, the disturbance cap limitations are cumulative and have already been reached or exceeded by past actions, including development of a route network prior to WEMO 2006. In areas where disturbance caps have already been reached or exceeded, any new authorized uses resulting in new ground disturbance or designation of re-routes will be evaluated in accordance with applicable CMAs.

2.2 Descriptions of No Action and Four Action Alternatives

Section 2.2 outlines plan-level goals and objectives for each alternative, and include both travel management and grazing program management. Each of the alternatives is composed of LUP-level decisions and implementation-level decisions. Implementation-level alternatives are outlined in Section 2.3 of this Chapter. Network-wide travel management minimization measures may also be plan-level decisions, if they are related to stopping, camping and parking, wash routes, and lakebeds. Although these are plan-level decisions in the CDCA, including the WEMO Planning Area, as they cover the entire planning area, they are reiterated in Section 2.3, because they can also be site-specific implementation decisions.

Implementation Decisions for Route Designation/Minimization Considered under All Alternatives

Although all alternative networks are compared to the No Action route network (e.g., the 2006 WEMO route network as modified by the court and new legislation), all routes in the inventory were reviewed against the 43 CFR 8342.1 criteria for possible inclusion in each action alternative, within the parameters of the alternative goals and objectives (see Table 2.2-2).

Moreover, the preliminary designations for routes reflect the overall goals and objectives of each Action Alternative, and mediate against adding new routes to the network. Goals and objectives are also tailored to each alternative in the proceeding subsections. The minimization triggers used to initially identify the GIS version of route designations involved the use of a series of resource-based criteria to determine potential need for minimization measures, and which would be most appropriate to accomplish the objectives of each alternative. Route-specific public scoping comments were available in GIS during the review process, and for routes which have multiple user conflicts, the designation would generally be deferred to the non-motorized or non-mechanized use over the OHV user under the action alternatives, to further minimize impacts to surrounding wildlife habitat.

In addition to resources for which minimization triggers were developed, the GIS geodatabase in which route and resource information were evaluated contained data for numerous other specific resources (see Table 2.2-4). This additional data was available to BLM resource specialists for consideration when identifying minimization measures to individual routes and features. In addition, the data allows the adverse impacts of the designated travel network within each alternative to be quantified. These quantitative impacts are presented in the impact analysis of each alternative in Chapter 4 of this FSEIS.

Network-Wide Minimization under the No Action Alternative

The following network-wide minimization measures, summarized in Table 2.2-1, were utilized in the development of the alternatives to minimize impacts.

Table 2.2-1. Network-Wide Minimization Measures Under Each Alternative

Issue	No Action Alternative	Alternative 2	Alternative 3	Alternatives 4 and 5
Minimization of T&E impacts	0.5% allowable ground disturbance within DT ACECs, outside of DT ACECs and CDNCLs other limitations may apply.	0.5% allowable ground disturbance within DT ACECs, outside of DT ACECs and CDNCLs other limitations may apply.	0.5% allowable ground disturbance within DT ACECs, outside of DT ACECs and CDNCLs other limitations may apply.	Consultation with Fish and Wildlife Service and issuance of a biological opinion. 0.5% allowable ground disturbance within DT ACECs, outside of DT ACECs other ground disturbance limitations may apply.
Minimization of Sensitive Species impacts	1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs.	1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs. No limit on ground disturbances outside DT ACECs and CDNCLs or other biological sensitivity	1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs. No limit on ground disturbances outside DT ACECs and CDNCLs or other biological sensitivity	1% allowable new ground disturbance within Mohave ground squirrel (MGS) Core Areas, and specific Sensitive plant species ACECs.

Table 2.2-1. Network-Wide Minimization Measures Under Each Alternative

Issue	No Action Alternative	Alternative 2	Alternative 3	Alternatives 4 and 5
			areas, but may be extended as adopted in other programmatic strategies below.	
Minimization of Air Quality impacts	1% allowable ground disturbance parameters in CDNCL. Additional ground disturbance limits have been adopted in special areas.	Consultation with AQMD and SIP Conformity Evaluation. 1% allowable ground disturbance parameters in CDNCL. Additional ground disturbance limits have been adopted in special areas.		
Minimization of Cultural impacts	Programmatic Agreement with CA SHPO and ACHP.			
Designation of Newly developed routes ¹ (allowable ground disturbance limitations)	1% allowable new ground disturbance limits in areas identified above. Very limited opportunities to modify network without a plan-wide review, except for valid existing rights and new authorized activities.	Subject to additional minimization in DT ACECs, MGS Core Areas, specific ACECs and CDNCLs.	Subject to 1% allowable new ground disturbance parameters, which may be further tightened through other programmatic analyses.	
Designation of Previously Closed Routes	All routes closed under the 2006 WEMO Plan would remain designated as transportation linear disturbances, except for valid existing rights overlooked or subsequently approved.	Routes that were closed under the 2006 WEMO Plan were re-evaluated for designation in Alternative 2, but only made available for use in a limited number of cases.	Routes that were evaluated and designated as closed under the 2006 WEMO Plan were initially designated as transportation linear disturbances, and were subjected to a route-specific review.	

Table 2.2-1. Network-Wide Minimization Measures Under Each Alternative

Issue	No Action Alternative	Alternative 2	Alternative 3	Alternatives 4 and 5
Designation of Newly Identified Routes	All routes that were not identified or evaluated under the 2006 WEMO Plan and designated open or close would be treated as transportation linear disturbances.	Routes that were not evaluated under the 2006 WEMO Plan were evaluated for designation in Alternative 2, but only made available for use in a limited number of cases based on key network or resource needs or issues, and subject to minimization unless there were no conflicts with Alternative 2 designation criteria.	No initial designation was assigned to newly identified routes; preliminary designations resulted from the initial GIS analysis, and those with conflicts were highlighted. The site specific review focused on these issues and other site-specific input.	Newly identified routes within sensitive areas were initially designated as transportation linear disturbances. Outside of designated critical habitat and other specified sensitive areas, no initial designation was assigned to newly identified routes. They were treated the same as currently designated routes. Preliminary designations resulted from the initial GIS analysis, and those with conflicts were highlighted. This network was then subject to route-specific review.
Stopping and Parking Minimization Measures	Limited to adjacent to designated OHV Open and Limited routes and within 50 feet either side of route centerline inside DT ACECs and CDNCLs, and limited to 300 feet either side of route centerline outside DT ACECs and CDNCLs.	Limited to within 50 feet from the route centerline both inside and outside DT ACECs and CDNCLs.	Limited to previously disturbed areas within 50 feet from the route centerline inside DT ACECs and CDNCLs, and previously disturbed areas within 100 feet from the route centerline outside DT ACECs and CDNCLs.	
Camping/ Second Vehicle Staging Minimization Measures	Limited to previously disturbed areas within 50 feet inside DT ACECs and CDNCLs; outside of DT ACECs and CDNCLs must occur within 300 feet of centerline of routes designated open.	Limited to previously disturbed, adjacent areas within 50 feet from the route centerline both inside DT ACECs and CDNCLs, and outside DT ACECs and CDNCLs.	Limited to previously disturbed areas adjacent to routes within 50 feet from the route centerline inside DT ACECs and CDNCLs, and previously disturbed areas adjacent to routes within 100 feet from the route centerline outside DT ACECs and CDNCLs.	

Table 2.2-1. Network-Wide Minimization Measures Under Each Alternative

Issue	No Action Alternative	Alternative 2	Alternative 3	Alternatives 4 and 5
Designation of Long-Distance Competitive Race Course Corridors and “C” routes.	The Barstow to Las Vegas and Johnson Valley to Stoddard Valley Race Courses would be eliminated and the Johnson Valley to Parker Course would be retained. Other Competitive events on “C” routes only. Not available on other OHV Open and Limited routes.	Speed events limited to OHV Open Areas, and on designated “C” routes outside of DT ACECs and CDNCLs seasonally only. Non-speed OHV events in DT ACECs and CDNCLs limited to routes designated in permit, with seasonal limitations. Non-OHV events are route specific, available on OHV Open and OHV Limited Routes unless otherwise specified in the permit.	Speed events limited to designated “C” routes outside of OHV Open Areas. Non-speed OHV events in DT ACECs, CDNCLs, and ACECs are limited to routes designated in the Permit. Seasonal or monitoring limitations are location specific. Non-OHV permitted events are available on OHV Open and OHV Limited Routes unless otherwise specified. All events are subject to NEPA compliance and permit requirements, and may require consultation with other agencies.	
Designation Parameters on OHV Use of Washes	Allowed in washes designated as OHV Open routes only.	OHV use limited to those designated in the travel network.		
OHV Use of Lakebeds (those specifically designated in CDCA Plan)	As specified in Table 8 of the CDCA Plan. Those not specified in the CDCA Plan are limited to designated through routes, as further constrained in applicable ACEC Management Plans.	Add Koehn, Cuddeback, Coyote, and Chisholm Trail lakebeds to the list of designated Lakebeds. Close Koehn Lakebed; keep as OHV Limited use on Cuddeback and Coyote lakebeds to designated through routes or authorized activities. Chisholm Trail Lakebed will be closed to all access.	Add Koehn, Cuddeback, Coyote, and Chisholm Trail lakebeds to the list of designated Lakebeds. OHV Limited use on Koehn Lakebed as authorized in a land-use or special-recreation permit. Designate Cuddeback and Coyote Lakebeds as OHV Open use, subject to appropriate minimization measures. Chisholm Trail Lakebed will be OHV Closed use.	

¹ Newly developed routes are routes that would require mechanical equipment or hand tools to be established on the ground and are not present in 2005 aerial imagery or the 2013 inventory used to develop the WMRNP plan.

Table 2.2-2. Goals and Objectives under each Action Alternative

Issue	Alternative-Specific Goals and Objectives		
OHV Use	Under Alternative 2, provide for constrained OHV Use in a manner that recognizes the overall sensitivity of the WEMO Planning Area, while addressing the needs of all desert users, private landowners, and other public agencies.	Under Alternative 3, provide for a wide range of dispersed motor-vehicle access opportunities in the WEMO Planning Area considering relative resource sensitivities, current uses, implementation strategies, and local community and regional goals and objectives, while addressing the needs of all desert users, private landowners, and other public agencies.	Under Alternatives 4 and 5, provide for a wide range of dispersed recreation opportunities and diverse experiences in the WEMO Planning Area outside of designated OHV Open Areas considering local community and regional goals and objectives, relative resource sensitivities, current uses, and implementation strategies.
Desert resources	Under all action alternatives, avoid adverse impacts to desert resources to the degree possible when designating or amending areas or routes for motorized vehicle access.		
Wildlife Conservation	Under all action alternatives, enhance wildlife habitat by restoring/rehabilitating translinear disturbances.		
Special Status Species – Wildlife	Under all alternatives, focus restoration/rehabilitation efforts within the range of Special Status Species such as Desert Tortoise Critical Habitat or habitat occupied by other Special Status Species.		
Special Status Species - Plants	Under all alternatives, incorporate Special Status Plant Species into restoration/rehabilitation efforts by including Special Status Plant Species seeding as appropriate and as funding allows.		
Pollinators	Under all alternatives, incorporate seeds/plantings of pollinator plants into restoration/rehabilitation efforts as appropriate and as funding allows.		
Communication to public	Under all action alternatives, use maps, signs and published information to communicate the allowable motorized vehicle access routes. Ensure all information materials are understandable and easy to follow.		
CDCA Plan limits on route designation	Under all action alternatives, eliminate the parameter for route designation in the CDCA Plan that limits route designations to those routes existing in 1980, which is inconsistent with maintaining an access system that updates route designations as new decisions are made. The system would be updated consistent with the overall goals and objectives of the CDCA Plan, as amended, as provided for in associated TMPs.		
Energy and Mineral exploration and development	Under all action alternatives, continue to provide opportunities for exploration and development on public lands by identifying appropriate access through the route designation process, consistent with 43 CFR 8342.1 and other regulations, including to critical mineral resources, potential energy resources, and minerals of local and State importance.		

Table 2.2-2. Goals and Objectives under each Action Alternative

Issue	Alternative-Specific Goals and Objectives		
Range of recreation opportunities	Under Alternative 2, limit the range of recreation opportunities and experiences outside of OHV Open Areas consistent with access goals, to enhance sensitive resource values and emphasize quality recreation opportunities and experiences focused on specific destinations, rather than enhanced dispersed use.	Under Alternative 3, provide for a wide range of quality recreation opportunities and experiences emphasizing dispersed undeveloped use. Focus access limitations to specifically avoid or minimize impact to sensitive resource values.	Under Alternatives 4 and 5, provide for a wide range of quality recreation opportunities and experiences emphasizing dispersed undeveloped use. Identify access limitations to specifically avoid or minimize impact to sensitive resource values, or to further limit the range of recreation opportunities and experiences outside of OHV Open Areas in lower use areas as appropriate to enhance sensitive resource values and regional watershed and habitat values.
Management of recreation use	Under all action alternatives, manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.		
Management approach	Under all action alternatives, adjust management approach to accommodate changing access needs, visitor use patterns and preferences.		
Stopping, parking, and camping	Under Alternative 2, further limit stopping, parking, and camping outside of DT ACECs and CDNCLs to 50 feet.	Under Alternative 3, further limit stopping, parking, and camping outside of DT ACECs and CDNCLs to 100 feet from centerline, which would be a decrease of 200 feet from the 2006 WEMO Plan limitations. Within DT ACECs and CDNCLs, stopping and parking would be 50 feet from the centerline of a route.	Under Alternatives 4 and 5, further limit stopping, parking, and camping outside of DT ACECs and CDNCLs to 100 feet from centerline of a route, which would be a decrease of 200 feet from the 2006 WEMO Plan limitations. Within DT ACECs and CDNCLs, stopping and parking would be the same as the No Action Alternative.
Dry lakebeds	Under Alternative 2, implement the Parish’s Phacelia lakebed closures, and close one dry lake to vehicular use (Koehn Dry Lake) that was designated as “Open” in the 2006 WEMO Plan. Close Chisholm Trail lakebed to all types of use.	Under Alternatives 3, 4 and 5, retain the Parish’s Phacelia lakebed closures adopted in the 2006 WEMO Plan, and close Koehn Dry Lake to vehicular use, except by authorization. Open two other lakebeds (Cuddeback and Coyote), which are currently restricted to designated routes across the lakebed and close Chisholm Trail dry lakebed to all types of use.	

Table 2.2-2. Goals and Objectives under each Action Alternative

Issue	Alternative-Specific Goals and Objectives		
Other parameters for Competitive “C” routes	Under Alternative 2, restrict the system of “C” routes available outside of OHV Open Areas through the SRP process to the current specified designated routes, consistent with the CDCA Plan, and further restrict the use of such routes seasonally to avoid sensitive resources, by TMA.	Under Alternative 3, allow for designation of competitive-use “C” routes outside of OHV Open Areas, consistent with adopted ACEC parameters, TMA goals, and route designation parameters.	Under Alternatives 4 and 5, allow for designation of competitive-use “C” routes outside of OHV Open Areas, consistent with adopted ACEC parameters, consistent with TMA goals.
Livestock grazing	Under Alternative 2, livestock grazing would be eliminated from all portions of the DT ACECs. Allotment boundaries would be adjusted the permitted use (AUMs) would be allocated on the remaining portions of those allotments outside of the DT ACEC.	Under Alternatives 3, 4, and 5, the livestock grazing element contained in the CDCA Plan, as amended by the 2016 DRECP LUPA, would not be amended, and the existing, adopted strategies for allowing the donation of grazing permits and leases back to BLM and making the land available for mitigation by reallocating the forage from livestock to wildlife use and ecosystem function and for managing grazing in allotments that would continue to be grazed would not be eliminated.	
Future implementation strategies	Under all action alternatives, apply disturbance parameters and mitigation to future implementation strategies and adjustments to the route network within designated ACEC and CDNCL, as outlined in the 2016 DRECP LUPA.		
Relationship to 2006 WEMO Plan Recreation Element objectives	Alternative 2 would further constrain the objectives associated with key changes to the CDCA Plan Access and Recreation Elements made in the 2006 WEMO Plan, including adjustments to network-wide motor vehicle stopping, camping and parking parameters within DT ACEC, to vehicle use of washes and on specific lake beds, and to competitive use of routes and designated competitive-event corridors.	Alternatives 3, 4, and 5 would further constrain some of the objectives and loosen restrictions on others, on a site-specific or subarea-wide basis.	

A summary of the TMAs under each Alternative is shown in Table 2.2-3.

Table 2.2-3. Summary of Travel Management Areas under Each Alternative

Travel Management Area	No Action Alternative	Alternatives 2 and 3	Alternative 4 and Alternative 5 the Proposed Action*
1	No TMAs	Broadwell Lake, Afton Canyon, Mojave Trails National Monument, and Barstow subregions	
2		Sierras, Darwin, and North and South Searles subregions	
3		Juniper Flats, Rattlesnake Canyon, Wonder Valley, and Joshua Tree, and Sand to Snow National Monument subregions	
4		Jawbone, Middle Knob and Lancaster subregions	
5		Black Mountain, Coolgardie, Fremont Peak, Harper Lake, Mitchel Mountains, Calico Mountains, and Cronese Lake subregions	
6		El Mirage (including Edwards Bowl area), Iron Mountain, Victorville, and Kramer Hills Subregions	
7		Ridgecrest, El Paso, Rands and Red Mountain subregions	Rands and Red Mountain subregions
8		Stoddard Valley, Ord Mountains, Newberry/Rodman, and Johnson Valley subregions	
9		No TMA 9	Ridgecrest and El Paso subregions

*Alternative 4 (Draft) and Alternative 5 (Proposed Action) TMAs are shown in Figure 2.3-6.

A summary of resource triggers for route designation criteria is shown in Table 2.2-4.

Table 2.2-4. Resource Triggers for Route Designation Criteria

Criterion	Resource Factor	Resource Triggers for Considering Further Minimization or Mitigation		
8342.1(a)	Soil Resources	High potential for erosion based on 10 percent or greater slope for 50 percent of route length, significant erosion issues documented, and/or high erosion potential based on Wind Erodibility Group or Hydrologic Soil Group		
	Watershed, soils, air quality, vegetation	Route disturbance exceeds area disturbance parameters		
	Riparian Areas	Route within 50 feet of riparian resources		
	Springs	Route passes within 300 feet of a spring		
	Desert washes	Route parallel to and predominantly within a wash		
	Protected Vegetation Resources	Route within an ACEC designated for protection of vegetation resources		
	Special Status Plant Species	Route passes through special status plant species habitat		
	Air Quality	For Alternative 2, route within 1 mile of sensitive receptor, or within 300 feet of a residence.	For Alternatives 3, 4, and 5, route within ¼ mile of sensitive receptor, or within 300 feet of a residence	
	Cultural Resources	For Alternative 2, route within 300 feet of a cultural resource	For Alternatives 3, 4, and 5, route within 100 feet of a cultural resource	

Table 2.2-4. Resource Triggers for Route Designation Criteria

Criterion	Resource Factor	Resource Triggers for Considering Further Minimization or Mitigation	
	Grazing	Route within 30 feet of a range improvement	
	Safety	Route within 100 feet of abandoned mine or other identified safety issue	
	Lands managed for wilderness characteristics	Route within an area managed for wilderness characteristics	
8342.1(b)	Tortoise Habitat	Route within a DT ACEC or high density modelled habitat	
	Protected Wildlife Resources	Route within an area designated for protection of wildlife resources	
	Golden Eagles	Route within ½ mile of golden eagle nest. The analysis also considered whether the cumulative disturbance within a 1-4 mile radius of nests exceeded 20 percent as required by DRECP LUPA-BIO-IFS-25	
	Mohave Ground Squirrel	Route within Mohave Ground Squirrel Core Area	
	Wildlife Corridors	Route passes through an identified wildlife corridor	
	Special Status Wildlife Species	Route passes through special status wildlife species habitat	
8342.1(c)	Route Connections	Route ends at a jurisdictional boundary or at private property	
	Designated Trail	Route intersects a designated trail	
	Special Recreation Permits	Route used for or intersects Special Recreation Permit area	
	Multiple User Conflicts	Route has multiple users which conflict with each other	
	Highly disturbed areas in DT ACECs and CDNCLs	Route is located in a highly disturbed area within a DT ACEC and CDNCLs	
	Rural Residential Conflicts	Route overlain by County Special District, Small Tracts Act easement, or within an area of substantial residential density relative to public land acreage	
	Disturbance Conflicts	Route in an area that exceeds disturbance parameters.	
	ACEC and CDNCLs	Route is currently designated in an ACEC/Activity Plan	
	Noise	For Alternative 2, route within 1 mile of sensitive receptor, or within 300 feet of a residence.	For Alternatives 3, 4, and 5, route within ¼ mile of sensitive receptor, or within 300 feet of a residence
8342.1(d)	Visual Resource Management (VRM) Class	Most of route is located in VRM II, and route was previously unknown or undesignated	
	Wilderness	Route intersects with Wilderness or Wilderness Study Area boundary	
	ACEC and CDNCL	Route is within or intersects with ACEC or CDNCL boundary	

General implementation direction for all action alternatives is shown in Table 2.2-5. In addition, more parameters for each TMA are included in the TMPs.

Table 2.2-5. Implementation Strategies for All Action Alternatives

Timing	Activity
Travel Management	
Year 1	Sign Open Route Network
Year 1	Install Informational Kiosks and Interpretive Signing
Begin Year 1, then Ongoing	Maintain Open Route Network, Signs, Kiosks, and other Features
Begin Year 1, then Ongoing	Develop and publish maps and brochures
Year 1	Develop Electronic/Interactive Maps
Year 2	Identify and place fencing in areas of concern
Begin Year 2, then Ongoing	Maintain fences, repair vandalism, make outreach a high priority at the time of fence installation
Begin Year 2, then Ongoing	Identify and place additional fencing as needed to counteract effects on DT ACECs.
As needed when impacts are identified	Rehabilitation priorities to be established based on immediacy of risk and the number of resources affected. Focus on routes within DT ACECs and CDNCLs, ACECs affecting listed cultural sites, riparian areas, areas with sensitive receptors, areas with sensitive species, and areas with erosion issues.
As needed when changes occur	Minor route network changes to generally be identified and covered in TMPs, considering minimization triggers and responses, necessary to avoid sensitive resources or impacts, private access and new rights-of-way needs, address small acquisitions, increase the quality of a recreation experience, and realignment needs.
As needed when changes occur	Major route network changes require associated subregion or TMA goals evaluation and NEPA review, and would include those which substantially alter transportation patterns in a subregion, are inconsistent with the alternative goals, large acquisitions with multiple access options, and addition of substantial routes to the current network that are not part of larger project review.
Grazing Program	
6 months	Within 6 months of issuing of WMRNP ROD, reconsider existing grazing decisions.
Year 1	Implement the approved livestock grazing strategy.
Ongoing	Determine if studies are needed to assess grazing impacts and determine any adaptive management prescriptions that may be required.

2.2.1 No Action Alternative

Under this alternative, no plan amendments would be made to the CDCA Plan, as amended by the 2006 WEMO Plan and the 2016 DRECP LUPA. The No Action Alternative is the travel management and grazing management strategy in effect. It is the strategy approved in the 2006 WEMO Plan, as modified by the US District Court (the Court) Remedy Order for specific routes, and reflecting recent changes that have resulted from legislation, or from identified valid existing rights. It does not address policy inconsistencies identified by the Court in its Summary Judgment Order, including the limitation of the routes in the route network to existing routes as of 1980.

Goals and Objectives under the No Action Alternative

The No Action alternative would incorporate all goals and objectives associated with motor vehicle access and grazing management currently contained in the CDCA Plan, and which were not modified by plan amendment in the 2006 WEMO Plan or 2016 DRECP LUPA.

Access-Related Goals, Objectives, and Strategies

The MVA Element of the CDCA Plan goals include:

1. Provide for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners, and other public agencies.
2. When designating or amending areas or routes for motorized vehicle access in conformance with as defined by 43 CFR 8340.0-5 (f), (g), and (h), to avoid adverse impacts to desert resources to the degree possible.
3. Use maps, signs and published information to communicate the allowable motorized vehicle access routes. Ensure all information materials are understandable and easy to follow.
4. Use the existing parameters for route designation in the CDCA Plan, including the parameter that states that use of routes is, at the minimum, restricted to those routes existing in 1980. The MVA Element of the CDCA Plan provides rules or parameters on implementation of access management decisions. This includes a parameter which defined the routes from which route designations could be made to “At the minimum, use will be restricted to existing routes of travel” at the time of the CDCA Plan approval in 1980. The Plan acknowledged in the MVA Element that identification or mapping was still needed to indicate of what the “existing route network” consisted.

Besides the MVA Element, other elements of the CDCA Plan address access. The Geology, Energy, and Minerals (GEM) Element of the CDCA Plan included the following goal:

1. Continue to recognize ways of access and opportunities for exploration and development on public lands, including to critical mineral resources, potential energy resources, and minerals of local and State importance.

The CDCA Plan also makes indirect reference to several access-dependent objectives throughout the Recreation Element of the CDCA Plan. Vehicle access is recognized as one of the most important recreation issues in the Desert, including the identification of specific routes for recreational use. Key objectives of the Recreation Element that are dependent on the travel management network include:

1. Provide for a wide range of quality recreation opportunities and experiences emphasizing dispersed undeveloped use.
2. Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.
3. Adjust management approach to accommodate changing visitor use patterns and preferences.
4. Make available the accessible use and enjoyment of desert recreation opportunities.

Key changes to the CDCA Plan's Recreation Element objectives made in the 2006 WEMO Plan include:

1. Adjust network-wide motor vehicle stopping, camping and parking parameters within DT ACECs and CDNCLs, vehicle use of washes, use of specific lakebeds, and competitive use of routes and designated competitive-event corridors as outlined in the 2005 WEMO FEIS.
2. Provide reasonable, safe, and environmentally sound access for visitors, local residents, licensed and permitted activities, and property owners through coordination and collaboration on travel systems with other agencies, state and local governments and interested stakeholders.
3. Through current and future Travel and Transportation Management Plans, provide a network of roads, primitive roads, trails that serves the transportation needs for commercial, recreational, and casual uses of public lands while providing appropriate protection of natural and cultural resources.

Key changes and additions to the CDCA Plan's Recreation Element objectives made in the 2016 DRECP LUPA include:

1. Provide reasonable, safe, and environmentally sound access for visitors, local residents, licensed and permitted activities, and property owners through coordination and collaboration on travel systems with other agencies, state and local governments and interested stakeholders.
2. Designate Roads, Primitive Roads, and Trails to meet the regional goals and objectives:
 - a. Maintain network of roads, primitive roads, and trails to protect sensitive resources and provide for an acceptable level of health and safety risk given the type of use;
 - b. Utilize the latest best management practices for the construction, reconstruction or maintenance and adopt new best management practices as they emerge; and
 - c. Utilize route designations as developed in existing, and future, TMPs, including, but not limited to the WEMO Plan.
3. Protect road, primitive road and trail access to Special Recreation Management Areas, Extensive Recreation Management Areas, OHV Open Areas, Level 1, 2, and 3 Recreation Facilities, Points of Interest as identified on Desert Access Guides and other Recreation Guides, and authorized mineral use.

Livestock Grazing Goals, Objectives, and Strategies

The Livestock Grazing Element of the CDCA Plan provides overarching guidance. The goals of the CDCA Plan Livestock Grazing Element are to:

1. Use range management to maintain or improve vegetation to meet livestock needs and to meet other management needs set forth in the Plan.
2. Continue the use of the California Desert for livestock production to contribute to satisfying the need for food and fiber from public land.

3. Maintain good and excellent range condition and improve poor and fair range condition by one condition class through development and implementation of feasible grazing systems or Allotment Management Plans (AMPs). Adjust livestock use where monitoring data indicate changes are necessary to meet resource objectives.

The CDCA Plan also analyzed seven alternatives with respect to the number of livestock allotments, the livestock to be grazed on each allotment, the type of allotment (perennial, ephemeral, or a combination), the amount of forage in each allotment dedicated to livestock, to wildlife, and to wild horses and burros, and the resulting livestock carrying capacity.

Key changes to the CDCA Plan Livestock Grazing Element made in the 2006 WEMO Plan (see pages 2-131-133 of the 2005 WEMO FEIS) include:

1. Adopt Regional Standards and Guidelines for the management of the grazing program. The adoption of Regional Standards and Guidelines are dependent upon the approval by the Secretary of the Interior.
2. Make the majority of ephemeral sheep/cattle grazing allotments in DWMA unavailable for grazing use, to include: Portions of the Buckhorn Canyon, East and West Stoddard, and Monolith-Cantil Allotments, and the entire Gravel Hills, Superior Valley and Goldstone Allotments.
3. Discontinue ephemeral grazing within cattle grazing allotments when forage is below 230 lbs. per acre (a change from the CDCA Plan 200 lbs. per acre threshold).
4. Discontinue the use of ephemeral grazing and temporary non-renewable grazing authorization within cattle grazing allotments located in DWMA.
5. Provide for voluntarily relinquishment of allotments located in DWMA and other special status species habitat, and, upon relinquishment, make such allotments unavailable for grazing.
6. Manage grazing in remaining active allotments consistent with the CDCA Plan Livestock Grazing Element goals and planning objectives adopted in the 2006 WEMO Plan, including additional objectives for management of grazing in active allotments within DWMA and CHU, unless and until the specific allotments are changed through plan amendment, either in this document or through future amendment.
7. The establishment of lower utilization thresholds based on native plant community (Range Type), Range Condition and Season of Use. Maximum utilization thresholds range from 25 to 40 percent based on the factors above.
8. New cattle guards would be designed and installed to prevent entrapment of desert tortoises. Existing cattle guards would be modified to prevent entrapment of desert tortoises.
9. Establish designated livestock exclusion areas when ephemeral production is less than 230 lbs/acre for allotments within a DWMA. Livestock exclusion would be from March 15 to June 15.

The CDCA Plan Livestock Grazing Element goals were not modified in the 2006 WEMO Plan or the 2016 DRECP LUPA. However, key additions to the CDCA Plan Livestock Grazing Objectives were made in the 2006 WEMO Plan, and are included in the No Action Alternative

and all other alternatives. These changes have resulted in the discontinuation of sheep grazing over large portions of the planning area, further limitations on ephemeral cattle and sheep grazing in the planning area, and the reallocation of livestock forage to wildlife use and ecosystem function in multiple vacant and inactive allotments within sensitive species habitat.

The 2006 WEMO Plan also adopted a voluntary relinquishment mechanism, designated as LG-29, for specified allotments. That mechanism was later replaced by language from the Consolidated Appropriations Act of 2012 (PL-112-74), which specifically addresses livestock grazing in the CDCA and WEMO Planning Area. PL-112-74 allowed for the donation of grazing permits and leases back to BLM and made the land available for mitigation by reallocating the forage from livestock to wildlife use and ecosystem function consistent with any applicable Habitat Conservation Plan, Section 10(a)(1)(B) permit, or Section 7 consultation under the Endangered Species Act (ESA).

The DRECP LUPA also did not make changes to the CDCA Plan Livestock Grazing Element goals, but did add additional goals to maintain and enhance various resource values that are relevant to the Livestock Grazing Element (listed beginning on pp. II.3-137 of the 2015 DRECP FEIS). The DRECP LUPA also analyzed and made changes to the Livestock Grazing Element objectives that affect allotments within the WEMO Planning Area, as outlined on page II.3-200 of the 2015 DRECP FEIS. These specific changes include:

1. Make Pilot Knob, Valley View, Cady Mountain, Cronese Lake, and Harper Lake allotments, allocations unavailable for livestock grazing and change to management for wildlife conservation and ecosystem function. Reallocate the forage previously allocated to grazing use in these allotments to wildlife use and ecosystem functions.
2. The following vacant grazing allotments within the CDCA will have all vegetation previously allocated to grazing use reallocated to wildlife use and ecosystem functions and will be unavailable for motorized travel and to future livestock grazing: Buckhorn Canyon, Crescent Peak, Double Mountain, Jean Lake, Johnson Valley, Kessler Springs, Oak Creek, Chemehuevi Valley, and Piute Valley.
3. Allocate the forage that was allocated to livestock use in the Lava Mountain and Walker Pass Desert allotments (which have already been relinquished under the 2012 Appropriations Act) to wildlife use and ecosystem function and eliminate livestock grazing on the allotments.

Plan Amendment under the No Action Alternative

A description of the plan amendments considered under the WMRNP is provided in Section 2.1.1 and Table 2.1-1. Under the No Action Alternative, no plan amendment changes would be made for the WEMO Planning Area.

Implementation Decisions for Route Designation/Minimization under the No Action Alternative

The No Action Alternative is the access strategy approved in the 2006 WEMO Plan, as modified by the US District Court (the Court) Remedy Order for specific routes, and serves as the alternative against which all other alternatives are compared. The access network included in the No Action Alternative is the adopted 2006 WEMO Plan network that is currently in use by the

public, with minor modifications to correct route discrepancies identified during the inventory process. The focus of this alternative is to support the biological resource goals and objectives of the 2006 WEMO Plan, while also meeting other FLPMA multiple use objectives of the CDCA Plan. It provides for access on public lands consistent with a broad species conservation strategy and consideration of other natural and cultural values. The route network would be applied within the context of the current CDCA Plan, as modified by the 2006 WEMO Plan and the 2016 DRECP LUPA, with the following modifications to address current management on-the-ground:

- Travel network designations are updated to capture current authorized and administrative routes that may not have been included in the 2006 WEMO Plan route designation effort, but which are based on valid existing rights (VER) to access, or meeting minimum agency requirements for emergency fire access. These changes are consistent with Section 2.2.6.11 of the 2005 WEMO FEIS.
- R5 and R50 are transportation linear disturbances in compliance with the 2011 Court Remedy Order.
- Errors and network breaks are repaired to the extent feasible, if they do not change the overall network. These errors are specifically identified on the No Action maps.
- Routes not inventoried in 2006 are not included in the network, but would be addressed in implementation plans in the context of other strategies such as signing and law enforcement, as appropriate.
- Interim Signing and Kiosk Plans, Law Enforcement, and Route Monitoring Program approved by the Court are included in the No Action Alternative. Other signing, maintenance, law enforcement, monitoring, and rehabilitation activities would occur based on existing CDCA Plan, 2006 WEMO Plan Amendment, and ACEC plan priorities, consistent with available funding.
- 5,677 miles of OHV Open use routes are designated and managed as available for some level of OHV use in subsequent implementation activities, based on the identified adjustments. Non-motorized or non-OHV routes were not specifically designated in the CDCA Plan or the WEMO Plan as a component of transportation and travel management network. A limited number of non-OHV trails have been evaluated outside of the context of transportation management, e.g. as a component of ACEC Management Plans. These non-OHV trails would continue to be available, in the context of existing activity plans and NEPA documentation.

The No Action Alternative for the transportation network is not equivalent to the current inventory of linear transportation features. For land use planning actions, the No Action Alternative is the continuation of implementation of the management direction in the existing land use plan (BLM NEPA Manual, p.52). This is the continuation of the present level or systems of resource use (43 CFR 1610.4-5), that is, “no change” from current management direction until that direction is subsequently changed. (Council on Environmental Quality, NEPA 40 Questions, 3.A). The network associated with the No Action Alternative consists of the network designations that were made in the WEMO Plan (see WEMO Plan FEIS Appendix R), with the modifications directed by the District Court and other modifications bulleted in the previous paragraph, and corrected where minor inaccuracies were found on the maps and where OHV routes are recognized by the BLM to provide access to valid existing rights. Because there

were no routes designated in the DRECP LUPA, the DRECP LUPA does not affect the route network for the No Action Alternative.

In contrast, a baseline describes the present condition of affected resources within an identified geographic scope (BLM NEPA Manual, p.53). Here the current baseline of affected resources includes that area where routes that exist on the ground are identified by the inventory efforts for this land use plan amendment project, whether or not they have been previously identified, evaluated or designated by the BLM.

The 2005 WEMO FEIS designated approximately 5,098 miles of route as Open or Limited (ES-5, 2005 WEMO FEIS), resulting in a decrease of transportation linear disturbances from the baseline route inventory. The designated routes were identified on maps in a CD provided with the 2005 WEMO FEIS (Appendix C).

These routes are taken from the final inventory of routes identified for the 2005 WEMO FEIS and previous inventories for the 1985-1987 route designation effort, the Ord Pilot route designations, and the ACEC Plan designations. The 2005 WEMO FEIS (p. 1-16) indicates that the inventory of routes consisted of almost 8,000 miles of routes, with some additional mileage from field survey crews in 1985 and 1987, during the preparation of ACEC plans, and digital data from 1995 and 1996, but does not provide a more specific total mileage for the entire planning area. However, the document does state that in areas surveyed, approximately nine percent or more of the routes were not found on the ground. The route designation mileage totals from the 2005 WEMO FEIS were slightly modified by the changes in the 2006 WEMO Plan ROD, and the subsequent closure of two specific routes by BLM in response to the 2011 Remedy Order.

Consistent with Section 2.2.6.11 of the 2005 WEMO FEIS (FEIS p.2-167), the current network has also been updated to include VER routes that were not recognized in the 2006 WEMO Plan or which have since been approved. A records review of the lands and minerals database (LR 2000) has identified close to 300 miles of VER routes in the designated route network under the No Action Alternative. Most of these routes were permitted or otherwise authorized by the BLM before the 2005 WEMO FEIS, but this adjustment also includes ROW miles, such as those associated with major powerlines, that have been permitted since that time. This results in a refinement of the total mileage of routes in the No Action Alternative to 5,677 miles of OHV Open and OHV Limited Routes, and 9,529 miles of transportation linear disturbances.

A recurring issue with the No Action Alternative route network involves the historic data used to develop the 2006 WEMO Plan and the underlying CDCA Plan. In the CDCA Plan the route network in limited use areas was based on “existing routes of travel” (CDCA Plan, 1999 amendment, p.76). Use in class “I” and “M” limited use areas was limited to “existing routes” (Id.) While many routes were clearly known and subsequently specifically designated as open, transportation linear disturbances, or limited to OHV use in these use areas, others were not. This network of existing routes was later referred to in the 2005 WEMO FEIS (see Section 2.2.6.1). However, the network adopted in the 2006 WEMO Plan only consists of specifically designated routes throughout the entire planning area (see 2005 WEMO FEIS maps website). Many or most of these specifically designated routes within limited use areas were “existing routes of travel”. Other routes that were not designated in the 2006 WEMO Plan likely were and remain “existing routes of travel” but carry no formal open, transportation linear disturbance, or limited use designation. In any event, the FEIS maps, as with the modifications discussed earlier

in this section, depict the 2006 WEMO Plan network brought forward in the No Action Alternative for the current planning effort.

BLM now knows that many other routes physically did exist on the ground within the WEMO Planning Area at the time of the 2005 WEMO FEIS, as evidenced by a review of 2005 aerial photography. As a result of the 2005 and 2009 aerial photography and field review, an additional approximately 8,000 miles of routes have been located on the ground and included in the 2013 inventory that were not part of the approximately 8,000 miles of inventoried routes discussed in the 2005 WEMO FEIS. The inventoried miles for the WMRNP FSEIS and LUPA approximates 15,235 miles, as computed with GIS and determined by the latest statutes, laws and regulations.

The 2013 updated inventory for this planning process identified many routes that were not considered during the 2006 WEMO Planning process but that exist on the ground. These additional miles of routes include those few hundred miles of routes available to authorized users but not identified at the time of the 2006 WEMO Plan, or which have been approved for authorized users since that time. Particularly in MAZs, the focus of the route designation effort was on development of a cohesive network and conservation of biological and other sensitive resources. Some of these routes also are lightly and infrequently used, and either through natural or past reclamation activities, may have been considered to be on their way to rehabilitation even if they still show signs of disturbance. A more complete discussion of the history of route designation leading up to the 2006 WEMO Plan may be found in Appendix D.

A sample review of good quality 2005 and 2013 aerial photography indicates that the majority of these additional miles of routes appear to have been existing at the time of the release of the 2005 WEMO FEIS, and likely much earlier. However, all of the undocumented mileage of routes were not designated, or included in the inventory of undesignated routes in the 2006 WEMO Plan, and have not been subsequently designated through another planning process. The undocumented routes were also not evaluated and designated consistent with 43 CFR 8342.1, and exceed the parameters presented in the 2005 WEMO FEIS for modification of the route network, as explained in Section 2.2.6.11. Therefore, the additional mileage would not be included as part of the designated routes (open or transportation linear disturbance) in the No Action Alternative. This is the case for any of the routes (or additional mileage thereto), whether they are identified as being in the “Redesign Areas” or the “Retention of Existing Routes” areas (2005 WEMO FEIS, Section 2.2.6.1, page 2-137). Under the No Action Alternative, in order to be considered for designation as an open route, undocumented existing routes (or additional mileage thereto) would need to be analyzed through an additional designation process. Implementation strategies and priorities for routes in this category would be pursued consistent with the minimization measures for designated routes discussed below.

No Action Alternative Route Designations

The transportation network associated with the No Action Alternative is shown in Figure 2.2-1, and the mileage associated with each type of designation is presented in Table 2.2-6. A comparison of the route network mileages among alternatives is presented in Table 2.3-2.

Table 2.2-6. No Action Alternative - Miles of Routes Designated

Use Description	Mileage ¹	Percentage of Total Network
Total Motorized (OHV Open and Limited)	5677	37.3
Total OHV Open	4998.8	32.8
Total OHV Limited	678.2	4.5
Subdesignation: Administrative	15.1	0.1
Subdesignation: Authorized/Permitted	557.9	3.7
Subdesignation: Competitive "C" Route	44.4	0.3
Subdesignation: Motorcycle	37.7	0.2
Subdesignation: Seasonal	5.9	<0.1
Subdesignation: Street Legal	17.2	0.1
Total OHV Closed	9,957³	65.4
Non-Motorized ²	0	<0.1
Non-Mechanized	27.6	0.2
Transportation Linear Disturbance	9,529	62.5

¹ Total inventory of GTLF (including closed routes) is approximately 15235 miles

² Non-OHV (Non-motorized) was not used as a designation in the No Action Alternative

³ Total includes 964 miles of transportation linear features that data was not available for in 2006. Mileage is rounded to nearest whole number.

The previous route designations made in the 2006 WEMO Plan, and as modified by the Court's Remedy Order and updated to include additional VER and minor adjustments, would continue without change. The access network included in the No Action Alternative consists of 6,074 miles of OHV vehicular routes based on the route network that is currently available for use, as made in the following previous actions discussed in Section 1.1.4. The No Action Alternative now consists of:

- The network adopted in the 2006 WEMO Plan, as modified by the Court's Remedy order;
- Minor error corrections, such as routes not matching the actual pathway on the ground; and
- Additional routes with right-of-way permits or other authorization instruments identified to-date in the inventory, that underwent an analysis and approval process consistent with 43 CFR 8342.1, and provide current rights of passage.

The No Action network does not include linear features identified after the inventory for the 2006 WEMO Plan except for authorized routes identified above; other post-2006 WEMO inventory features have been designated as transportation linear disturbances for the purposes of this analysis. Although the routes were not specifically designated as transportation linear disturbances through the designation process and no particular decision was made on these routes, the 2006 WEMO route network is specified as consisting of routes designated as open or limited; all other routes are considered transportation linear disturbances, including formerly undesignated routes (unless they have independent authorization).

Post-Designation Implementation Strategies under the No Action Alternative

The process for on-the-ground implementation of route designations and grazing management under the No Action Alternative would be based on the parameters of the WEMO Plan, as modified by the four implementation plans that BLM was required to prepare in response to the Court's 2011 Remedy Order. In the 2006 WEMO Plan, specific guidelines for implementation of route designation were outlined in 2005 WEMO FEIS Chapter 2, Section 2.2.6.10 to 2.2.8, and Appendix C, and are also summarized below. Specific guidelines for implementation of grazing management were outlined in the WEMO FEIS and Appendix C, and in subsequent grazing decisions for each active allotment.

In the 2011 Remedy Order, the Court directed BLM to submit certain additional implementation plans, but left the content of those plans to the discretion of the BLM. These plans, as they currently exist, are posted on the BLM WMRNP project website (<https://www.blm.gov/programs/planning-and-nepa/plans-in-development/california/west-mojave-route-network-plan/court-documents>), and are currently being implemented by the BLM. The four plans are a Sign Implementation Plan, a Route Monitoring Plan, a Route Maintenance and Kiosk Plan, and an Enforcement Plan.

The BLM considers the plans directed by the Remedy Order to be part of the No Action alternative. The Remedy Order provided that:

- The BLM should provide the Court with a detailed implementation plan for signing all OHV Open routes in the WEMO plan area.
- The BLM shall provide the Court with a monitoring plan to determine compliance with route closures, and whether new illegal routes are being created. The monitoring plan should demonstrate that the effort will be adequate to determine compliance at a statistically significant level.
- The BLM will provide the Court and the parties with a plan for maintenance of the open route network and installation of informational kiosks at all major OHV access points. BLM will provide the Court and the parties with a plan for providing additional enforcement capability for the route network in the WEMO plan area.

The Court also directed BLM to undertake the following activities pursuant to the Remedy Order:

- The BLM shall update all BLM-produced and available maps to include accurate and updated route information, and, as necessary, include the following notice in particular type on all maps, pamphlets, kiosks, and other literature regarding WEMO OHV routes distributed by the BLM.
- The Notice reads: "Notice – Motorized use is permitted only on routes signed "open". Any route that does not have an "open" sign is not legal for motorized use. Motorized use of any closed route will result in a fine or criminal prosecution".
- The BLM shall carry out additional information gathering and monitoring regarding (a) air quality in and around open areas through air quality monitoring, (b) status of the Mojave fringe-toed lizard and its habitat, and (c) riparian areas and UPAs, including new properly functioning condition (PFC) assessments for all of the springs and seeps in the WEMO Planning Area.

- The BLM will provide the Court and the parties quarterly reports indicating the BLM’s progress in implementing the above requirements.

The Monitoring Plan directed by the Court was submitted in April, 2013, and monitoring of the route network according to the plan began in July, 2013.

Implementation of the route network would continue to proceed according to the following priorities identified in the WEMO Plan, p. 2-165:

- Pursue funding for route signing;
- Pursue funding for route rehabilitation;
- Sign the open route network;
- Maintain the open route network, with an emphasis on making the open network of routes more obvious and attractive to use than the transportation linear disturbances;
- Install informational kiosks and interpretive signing where it would be more effective;
- Develop and publish maps that are up-to-date, readily available, and have a readily understandable and useful format;
- Regularly maintain signs, kiosks, routes, maps, and brochures;
- When additional funding is received, pursue route rehabilitation in priority areas; and
- As additional funding is received, initiate two-year enforcement and visitor service patrols in specific areas. Enforcement priorities are identified in the WEMO FEIS, p. 2-71, as updated.

BLM has implemented signing, completed installation of informational kiosks pursuant to the WEMO Plan, added additional kiosks in key locations, generated maps of the route network, is maintaining the network, and continues to seek additional funds for focused law enforcement activities. BLM also continues to work on rehabilitation activities, and annually pursues additional funding, directly and with partners, to proceed with rehabilitation of routes in priority areas.

The timing of the implementation activities for the No Action Alternative is shown in Table 2.2-7. These specific implementation activities with a timeline are called out in Section 2.2.6.10 and Appendix C of the 2005 WEMO FEIS Implementation Plan and are elements of the No Action Alternative. Many of these are already implemented. If not yet implemented, their status is also included.

Table 2.2-7. Implementation Activities and Timeframes for No Action Alternative

Timing	Activity	Status *All activities assume funding is received.
Travel Management		
Year 1	Sign Open Route Network	Done
Year 1	Install Informational Kiosks and Interpretive Signing	Done
Year 1, Ongoing	Maintain Open Route Network, Signs, Kiosks, and other Features	Ongoing

Table 2.2-7. Implementation Activities and Timeframes for No Action Alternative

Timing	Activity	Status *All activities assume funding is received.
Year 1, Ongoing	Develop and publish maps and brochures	Done. Updates deferred to decision on this project.
Year 2	Identify and place fencing on the west side of Johnson Valley OHV Open Area to prevent unauthorized OHV use in the Ord-Rodman DT ACEC, and minimize use in the Cinnamon Hills area.	Done
Year 2, Ongoing	Monitor JV OHV boundary fence, repair vandalism, and make outreach a high priority at the time of fence augmentation.	Ongoing
Year 2, Ongoing	Identify and place additional fencing as needed along the boundary of Stoddard Valley and Johnson Valley OHV areas as needed to counteract effects on the Ord-Rodman DT ACEC from off-route travel.	Additional boundary fencing is anticipated in conjunction with the Johnson Valley expansion. No additional fencing identified on the east side of Stoddard Valley.
Grazing Program		
Year 1	Modify boundaries (and kind and use) of cattle and sheep allotments, as approved in the WEMO Plan.	Done
Year 1	Prohibit sheep grazing from those portions of the Stoddard Mountain Allotment that occur within the Mojave Monkeyflower Conservation Area. BLM shall work with the lessee to clearly identify monkeyflower habitat that shall be avoided.	Done
Year 1	Health assessments shall be completed for the Cronese Lake, Harper Lake, and Ord Mountain allotments. Results will be used as baseline information to develop needed corrective measures.	Done for Ord; Harper Lake and Cronese Lake allotments are not available for livestock grazing (2016 DRECP LUPA)
Year 2	Health assessments shall be completed for the Cady Mountain, Hansen Common, Rattlesnake Canyon, Rudnick Common, Tunawee Common, and Walker Pass allotments.	Cady Mtn., Hansen Common, Rattlesnake Canyon, Rudnick Common, Tunawee Common assessments complete. Walker Pass retired under the authority of the 2012 Appropriation Act.
Year 2	Provide sheep lessees notification pursuant to 43 CFR 4110.4-2 (b) before actions in Section 2.2.19.6 of the 2003 WEMO DEIS are implemented.	Done in grazing decisions.
Year 2	Implement the approved livestock grazing strategy.	Done in grazing decisions.
Year 2	Update the Ord Mountain Allotment Management Plan and install range fences in 2 locations to exclude cattle from high concentration tortoise areas found adjacent to the Ord Mountain allotment: the southern boundary of the allotment west of Cinnamon Hills, and the eastern boundary of the allotment in the vicinity of Box Canyon.	Completed interior fences that facilitate seasonal closures instead. Due to low stocking rates in the Ord Mtn. Allotment, the external range fences are now a lower priority.
Year 3	Health assessments shall be completed for cattle allotments outside of DT ACECs and the MGS Conservation Area, including Lacey-Cactus-McCloud, Olancha, Round Mountain and Whitewater Canyon.	Lacey-Cactus-McCloud, Olancha, Round Mountain and Kelso Peak assessments complete. Whitewater Canyon voluntarily relinquished.

Table 2.2-7. Implementation Activities and Timeframes for No Action Alternative

Timing	Activity	Status *All activities assume funding is received.
Year 3	Determine if studies are needed to assess cattle or sheep impacts and determine any adaptive management prescriptions that may be required. These would include new management prescriptions in the Cronese Lake, Harper Lake, and Ord Mountain allotments to implement exclusion of cattle from specific areas when the threshold is below 230 lbs/acre, and appropriate rest of certain pastures.	Done in grazing decisions, ongoing and is specific to Ord Mountain
Year 3	Modify all existing cattle guards in desert tortoise habitat to prevent entrapment of desert tortoises.	Done.
Year 10	Determine grazing compatibility with sensitive biological resources, and subsequently undertake a NEPA analysis of management alternatives to issue a grazing decision that implements compatible management provisions.	Done.

2.2.2 Alternative 2

Goals and Objectives under Alternative 2

The goals and objectives associated with each of the action alternatives are presented in Table 2.2-2. Each action alternative would supplement and amend the CDCA Plan, as previously amended by the 2006 WEMO Plan and the 2016 DRECP LUPA, to adopt a comprehensive transportation and travel management strategy for the WEMO Planning Area. Alternative 2 would also modify the livestock grazing program to provide for additional species conservation and desert tortoise recovery in the DT ACEC. The transportation management goals and objectives of this alternative have an increased focus on the use of two minimization measures: (1) designation of routes as transportation linear disturbances and (2) limitation of access routes—in order to minimize damage to resources, minimizing harassment of wildlife, and minimize conflicts. The network’s goal is to minimize by avoiding site-specific impacts to public land resources, and to utilize regional measures to minimize overall network impacts.

Plan Amendment under Alternative 2

Under Alternative 2, the plan amendment decision (PA I) that is common to all action alternatives and described in Section 2.1.1 would be made. Of the six plan amendment decisions that would vary among alternatives (PA II – PA VII), the following decisions would be made under Alternative 2:

PA II: Alternative 2 would delineate eight TMAs and associated modes of access and travel. The boundaries of the eight TMAs are shown in Figure 2.2-2, and are summarized in Table 2.2-3.

PA III: Alternative 2 would seasonally restrict the use of the currently designated “C” routes and competitive OHV races would be managed under a Special Recreation Permit for OHV use occurring outside of OHV Open Areas. Any pit areas would be limited to those areas previously dedicated as pit areas along a route, and analyzed as such in compliance with NEPA, Section

106, and ESA compliance. This would not affect non-competitive special recreation events such as dual sports.

PA IV: Alternative 2 would add Koehn, Cuddeback, Coyote, and Chisholm Trail lakebeds to the list of designated lakebeds, and would designate Koehn and Chisholm Trail Lakebeds as OHV Closed use (see Figure 2.2-3). The other two lakebeds (Cuddeback and Coyote) would remain “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”.

PA V: The Rand Mountains Fremont Valley Management Area would be managed consistent with parameters outlined in 2.2.1.2.4 of the 2005 WEMO FEIS, including the continued implementation of a visitor use permit program for those desiring to use vehicles in the Rand Mountains.

PA VI: Alternative 2 would limit camping to previously disturbed areas adjacent to OHV Open and Limited Routes within 50 feet from the route centerline, both inside and outside of DT ACECs and CDNCLs in the WEMO Planning Area. Stopping and parking would also be limited to within 50 feet either side of the route centerline in the WEMO Planning Area.

PA VII: Under Alternative 2, livestock grazing would be discontinued in DT ACECs with the exception of a small horse allotment, the Valley Well Allotment. Through this land-use planning change, lands would no longer be available for livestock grazing in portions of three active allotments, consistent with 43 CFR 4130.2 (a). The affected active allotments in DT ACECs include portions of Ord Mountain, Cantil Common, and Shadow Mountain allotments. These allotments would have their boundaries adjusted to remove the DT ACEC lands from the allotments. The AUMs in the DT ACEC portions of the allotments would be reallocated from livestock forage to wildlife use and ecosystem functions.

Implementation Decisions for Route Designation/Minimization under Alternative 2

As discussed in Section 2.2, each action alternative has a set of parameters for route designation and minimizations. Implementation strategies specific to all action alternatives are shown in Table 2.2-5. The following parameters were used for identifying the preliminary Alternative 2:

- a. Stopping, parking and camping parameters would be further limited outside of DT ACECs and CDNCLs, specific to Alternative 2 (see plan amendment VI), and used to further focus the impacts from criteria resources and the need for minimization and mitigation measures.
- b. Routes designated as “Closed” in the 2006 WEMO Plan decision would be initially designated as transportation linear disturbances under Alternative 2, and were subject to a route-specific review that determined if a route should be OHV Open, OHV Limited or OHV Closed.
- c. Routes which were undesignated in the 2006 WEMO Plan decision (i.e., features that were added as a result of the GTLF inventory update and the on-the-ground signing process) would be initially designated as transportation linear disturbances, and were subject to a route-specific review that determined if a route should be OHV Open, OHV Limited or OHV Closed. In keeping with the resource protection focus of Alternative 2, this step in the process defaulted to classification as transportation linear disturbances all features which were not designated in 2006, and which were added to the inventory for

the first time in 2013 even if they existed on the ground prior to the 2006 WEMO Plan, and were closed in the 2006 WEMO Plan as a result of policy. Final designations may have designated these routes as transportation linear disturbances, limited, or open, based on additional information.

- d. Routes in OHV Limited Areas which were designated as “Open” in the 2006 WEMO Plan, and which have no resource or other designation criteria conflicts identified, would initially remain identified as “OHV Open” (available for all travelers, including non-motorized or non-mechanized users), and were subject to a route-specific review that determined if a route should be OHV Open, OHV Limited or OHV Closed.
- e. Routes in OHV Limited Areas which were designated as “Open” in the 2006 Plan, but which may have resource or other designation criteria conflicts, were highlighted, in order to focus route-specific review the identified conflicts and to determine whether to minimize impacts through changing their route designations or to keep them available for public use and identify appropriate mitigation measures. Some of these routes would have been designated as transportation linear disturbances under the initial GIS Alternative 2, depending upon the conflict types, intensity, and numbers (cumulative effects).
- f. Routes designated as “OHV Limited” in the 2006 WEMO Plan decision would be identified as “Motorized-Authorized” or “Motorized-Administrative” (specific to the limitation), as applicable, and were subject to a route-specific review that determined if a route should be OHV Open, OHV Limited or OHV Closed. Many Motorized-Authorized routes would have undergone site-specific review and mitigation associated with a permit or other authorization. If conflicts were identified, these route features again were highlighted, in order to focus specific review for the identified conflicts. These conflicts would also be factored into determining whether routes would be available for public use and appropriate mitigation measures associated with route use. Minimization measures, including designation of routes as transportation linear disturbances, may be applied where impacts have been identified under the 43 CFR 8342.1 criteria.
- g. Under Alternative 2, the designation of route ending at a jurisdictional boundary or private property would generally be initially designated in a similar manner as those in the Proposed Action unless a range of options presented itself, consistent with the designation criteria.
- h. For routes located in a highly disturbed area outside of DT ACECs and CDNCLs, the route would be designated as transportation linear disturbances, except as needed to maintain connectivity of the network, in order to minimize impacts to air quality and prevent additional habitat disturbance to the area. Highly disturbed areas are areas which have a significant density of routes within a very small area, such as historic vehicle play or staging areas.

The minimization triggers used to initially identify the GIS version of route designations involved the use of a series of resource-based criteria to determine potential need for minimization measures, and which would be most appropriate to accomplish the objectives of Alternative 2. The minimization triggers used to help determine whether a route or feature requires minimization and mitigation under Alternative 2 were correlated to the subparts of 43 CFR 8342.1, and are provided in Table 2.2-4.

Alternative 2 Route Designations

The transportation network associated with Alternative 2 is shown in Figure 2.2-4, and the mileage associated with each type of designation is presented in Table 2.2-8. A comparison of the route network mileages among alternatives is presented in Table 2.3-2.

Table 2.2-8. Alternative 2 - Miles of Routes Designated

Use Description	Mileage ¹	Percentage of Total Network
Total Motorized (OHV Open and Limited)	4911.7	32.2
Total OHV Open	3411.6	22.3
Total OHV Limited	1500.1	9.7
Subdesignation: Administrative	88.9	0.6
Subdesignation: ATV/UTV	6.6	<0.1
Subdesignation: Authorized/Permitted	985.7	6.5
Subdesignation: Competitive “C” Route	49.1	0.3
Subdesignation: Motorcycle	21.3	0.1
Subdesignation: Seasonal	6.3	<0.1
Subdesignation: Street Legal	342.2	2.2
Total OHV Closed	10322.3	67.7
Non-Motorized	31.7	0.2
Non-Mechanized	66.2	0.4
Transportation Linear Disturbance	10224.4	67.1

1 - Total inventory of GTLF (including closed routes) is approximately 15235 miles

The Alternative 2 network places an increased focus on the use of one specific minimization measure, designation of routes as transportation linear disturbances, in order to minimize impacts to biological, cultural, and other non-biological sensitive natural resources and values, and minimize conflicts between uses. For previously existing, undocumented linear features that were identified in the 2013 inventory update, the default designation is for the feature to be designated as a transportation linear disturbance, unless a specific rationale identifies that a different designation would substantially enhance the network. This is generally the case for Alternative 2 even when a minimization trigger does not result in designation of a previously existing, undocumented route that was identified and evaluated as a transportation linear disturbance. This approach is conservative, minimizing the number of previously undocumented routes designated “open” in the network, providing a second review of the current network based on the objectives for this alternative, and focusing on the use of classification as transportation linear disturbances as the minimization measure for resolution of potential route-specific and area-specific adverse impacts identified through the evaluation process. Alternative 2 network emphasis includes:

- Additional overall minimization of surface disturbance towards the long term enhancement of watersheds, wildlife habitat, and other natural and cultural resources in the WEMO Planning Area.
- Through-access oriented designation of routes.
- Area-wide route minimization across all public lands.

- Strategy focused on classification as transportation linear disturbances.
- 4,890 miles of OHV Open and OHV Limited routes.

Network-Wide Minimization Measures under Alternative 2

The network-wide minimization measures summarized in Table 2.2-1 were utilized in the development of Alternative 2 to minimize impacts. Additional specific parameters for each TMA may be included in the TMPs.

Post-Designation Implementation Strategies under Alternative 2

Specific components to implement the planning goals and objectives, including the route designations, of each of the action alternatives are provided in Table 2.2-9. Future changes to the network would be developed consistent with these goals and objectives, and specific direction in TMPs.

If Alternative 2 is selected, then within first year after the ROD, the portions of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments located in DT ACEC would have their boundaries adjusted to remove the DT ACEC lands from the allotments. The AUMs in the DT ACEC portions of the allotments would be reallocated from livestock forage to wildlife use and ecosystem functions. In each case, BLM would issue a Proposed Grazing Decision, in accordance with 43 CFR 4160. Following a 15-day Protest Period, BLM would issue a Final Grazing Decision, with responses to any protests from the Proposed Grazing Decision. The lessees would then have 30 days to appeal to the Office of Hearings and Appeals.

2.2.3 Alternative 3

Goals and Objectives under Alternative 3

The goals and objectives associated with each of the action alternatives are presented in Table 2.2-2. The transportation network under Alternative 3 places an increased focus on strategies that increase access to serve existing management activities, provide access on historic OHV routes, and include many of the recommendations of the Desert Advisory Council and other jurisdictions, and minimize damage to resources, harassment of wildlife, and conflicts. Instead of more classification as transportation linear disturbances, the network minimizes regional and site-specific issues and conflicts by avoiding and/or reducing threats, redirecting access, by utilizing regional measures to minimize overall network impacts, and by developing other site-specific minimization measures. This alternative puts an emphasis on monitoring fewer designations as transportation linear disturbances and management of a larger network.

Plan Amendment under Alternative 3

Under Alternative 3, the plan amendment decision (PA I) that is common to all action alternatives, and is described in Section 2.1.1 would be made. Of the six plan amendment decisions (PA II – PA VII) that would vary among alternatives, the following decisions would be made under Alternative 3:

Table 2.2-9. Post-Designation Implementation Strategies for Action Alternatives

Other Resources and Uses		
Resource Conservation and Enhancement Goals	Under Alternative 2, emphasize resource conservation and enhancement goals in the development of plan parameters, transportation management plans, and implementation of the network and develop additional strategies to enhance on-the-ground capabilities.	Under Alternatives 3, 4, and 5, support resource conservation and enhancement goals while providing opportunities to experience the desert's unique resource values in the plan parameters and the development and management of the network.
DRECP LUPA Route Parameters	Under Alternative 2, incorporate adopted DRECP LUPA route parameters, in order to enhance conservation goals and objectives.	Under Alternatives 3, 4, and 5, conform to adopted DRECP LUPA route parameters, in order to enhance conservation goals and objectives and provide consistent management strategies.
Management of Special Areas	Under Alternative 2, give special attention to limiting non-essential multiple uses in special areas (WSA, ACEC, CDNCLs, NRHP listed and eligible sites, Tribal Areas, or Riparian Areas), and to the specific factors that have driven the identification and management of the areas, and associated access strategies.	Under Alternatives 3, 4, and 5, give special attention to the goals in special areas, and to the specific factors that have driven the identification and management of the areas, and associated access strategies.
Classification as Transportation Linear Disturbances	Under Alternative 2, utilize classification as transportation linear disturbances as a key measure to minimize resource and use conflicts on the remaining route network, unless otherwise identified in the goals and objectives.	Under Alternative 3, de-emphasize classification as transportation linear disturbances as a primary means to minimize resource and use conflicts on the remaining routes selected for the network, where consistent with area goals
Minimizing Conflicts	Under Alternatives 3, 4, and 5, emphasize regional, network and tiered measures to minimize conflicts, including those which are consistent with or enhance similar strategies of other jurisdictions	
Primary Travelers		
General Management of Access	Under Alternative 2, manage access to de-emphasize casual multiple-use OHV and mechanized touring, focus access to major recreational and non-recreational destinations that are not experiencing undue access-related impacts, consider a limited number of manageable loop trails that minimize loss of sensitive resources, and otherwise emphasize through-access on public lands to establish a comprehensive network.	Under Alternatives 3, 4, and 5, manage access to emphasize casual multiple-use OHV and mechanized touring, provide access to major recreational and non-recreational destinations that are not experiencing undue access-related impacts, provide through-access on public lands to establish a comprehensive network, consider some linear and loop trail opportunities in sensitive areas that do not have substantial evidence of unauthorized use and include minimization measures that minimize unauthorized use and potential impacts to sensitive resources, and provide for a reasonable amount of recreational and touring opportunities in less sensitive areas. Under Alternative 3, balance joint-use and single-use trails to enhance opportunities for unique recreational experiences, while Alternatives 4 and 5 would emphasize joint-use trails, consider additional access needs in designated SRMA to enhance recreational goals.

Table 2.2-9. Post-Designation Implementation Strategies for Action Alternatives

<p>Specific Strategies for “C” Routes</p>	<p>Under Alternative 3, expand the current “C” network to enhance riding opportunities in and around the City of Ridgecrest, and connect to the Spangler Hills Open Area in and around the City of Ridgecrest, to add topographic diversity, provide technically challenging opportunities to riders of all skill levels, facilitate long distance OHV competitive events, link the community of Ridgecrest and the Spangler Hills OHV Open Area, and partially offset Johnson Valley OHV Area competitive event opportunities lost with the expansion of the 29 Palms MCAGCC. This would include approximately 20-30 miles of routes in each of the Summit Range area and the area east of Highway 395 along with the area to the northeast of the OHV Open Area as identified in the Spangler Hills OHV Area Management Plan (1992). Identify a link between the Outlet Center Mall in Barstow to the Stoddard Valley OHV Open Area via a connector route, and identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Area, with appropriate minimization and mitigation measures. This connector was adopted in the 2006 WEMO Plan, but no specific route was ultimately delineated. Also, identify a connector loop between the two remaining pieces of the Johnson Valley OHV Area, with appropriate minimization and mitigation measures.</p>	<p>Under Alternatives 4 and 5, identify a specific speed-controlled “C” route connector for competitive use under Special Recreation Permit between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Area, with appropriate minimization and mitigation measures. Also, expand the current “C” network for competitive use under Special Recreation Permit to enhance riding opportunities in and around the City of Ridgecrest and connect to the Spangler Hills Open Area, identify a connector route between the Outlet Center Mall in Barstow to the Stoddard Valley OHV Open Area via a Competitive “C” connector route, and identify a connector route between the two remaining pieces of the Johnson Valley OHV Recreation Area, with appropriate minimization and mitigation measures. Also, limit staging and pit areas associated with “C” route Special Recreation Permit events to OHV Open Areas.</p>
<p>Emerging Uses</p>		
<p>Development and Management of the Network</p>	<p>Under Alternative 2, emphasize limiting access to authorized uses only (rights-of-way, easements, range improvements, guzzler maintenance, and mining) where classification as transportation linear disturbances is not appropriate in sensitive areas.</p>	<p>Under Alternatives 3, 4, and 5, consider emerging access and access-dependent needs in development and management of the network</p>
<p>Landscape-level Conservation Goals</p>	<p>Under Alternative 2, have the route network support current, and provide mechanisms to respond to new, landscape-level conservation goals and strategies and newly identified sensitive resources.</p>	<p>Under Alternatives 3, 4, and 5, have the route network support landscape-level conservation and use goals and strategies.</p>
<p>Landscape Settings</p>		
<p>Visual Settings</p>	<p>Under Alternative 2, maintain, and, as appropriate enhance a diverse range of visual settings in the designation and management of the back-country network, with attention to special areas and consistent with other goals and objectives</p>	<p>Under Alternatives 3, 4, and 5, maintain a diverse range of visual experiences in the development and management of the network, where appropriate, with special attention to special areas and destinations, consistent with other goals and objectives</p>

Table 2.2-9. Post-Designation Implementation Strategies for Action Alternatives

Recreational Settings	Under Alternative 2, focus on maintaining recreational settings in the designation and management of the front-country network closer to urban centers, where appropriate.	Under Alternatives 3, 4, and 5, maintain or enhance recreational settings in the development and management of the network, where appropriate.
Means of Travel Allowed to Accomplish Objectives		
Uses at Recreational Destinations	Under Alternative 2, convert from year around OHV access opportunities to seasonal or non-OHV opportunities that lead to sensitive points of interest, where appropriate.	Under Alternatives 3, 4, and 5, provide an array of diverse and unique uses at recreation destinations, where appropriate.
Competitive Events	Under Alternative 2, limit competitive OHV events to OHV Open Areas, or existing designated “C” routes, by special-recreation permit only. Further limit through closure the permitted use of these designated “C” routes seasonally. No “C” routes would be designated through DT ACECs, CDNCLs, or other ACECs. Other OHV Open and OHV Limited routes would not be available for motorized competitive events. Non-OHV events would be assessed on a case-by-case basis.	Under Alternatives 3, 4, and 5, competitive OHV events would be allowed to occur outside of OHV Open Areas under Special Recreation Permit on routes specified for such use as identified in the TMP route network strategies.
Social Conflicts Between Different Travel Types		
Through Routes	Under Alternative 2, focus on joint use of through-access routes for visitors, permittees, local residents, and property owners, consistent with other agencies, state and local governments, where feasible. Consider State and County-maintained Road plans when identifying access points to major roads.	Under Alternatives 3, 4, and 5, provide for joint use of through access for visitors, local residents, and property owners if unique user opportunities are not the focus of the area or routes, consistent with other agencies, state and local governments, where appropriate. Also, provide additional access opportunities to underserved OHV or non-OHV recreation types insofar as it is consistent with other objectives
Existing Easements	Under all action alternatives, identify existing easements for joint use routes, as needed	
Rural and Special Service District Areas	Under Alternatives 2 and 5, provide access consistent with residential use, emphasizing Street-legal vehicles in most cases, in rural residential areas. In Special Service District areas, provide access consistent with the purposes of the established Special Districts, and coordinate with jurisdictions during the designation of future Special Districts to maintain a coherent route network. Designate routes with Small Tracts Act easements consistent with BLM policy, and develop partnerships to enhance opportunities for user-specific trail development and maintenance, including for non-OHV and non-mechanized trails	
Safety, Conflicts, Resource Impacts	Under all action alternatives, utilize minimization and mitigation measures (e.g., signing, fencing, classification as transportation linear disturbances, where appropriate) to address other known safety issues, conflicts between users, and impacts to sensitive resources.	

Table 2.2-9. Post-Designation Implementation Strategies for Action Alternatives

Access Points		
General Strategies for Stopping, Parking, and Camping Areas	Under Alternative 2, consider dedicated camping, staging and/or parking areas only in order to minimize overall size and/or impact of the area where stopping, parking, and camping (SPC) occurs adjacent to routes in sensitive areas. Camping, staging, and parking areas through sensitive locations may be further restricted based on changing conditions, as needed	Under Alternatives 3, 4, and 5, emphasize SPC adjacent to routes, consistent with network parameters, unless in heavily impacted or popular areas. In heavily impacted, sensitive areas and popular areas consider dedicated SPC or other minimization measures. These may extend beyond standard SPC to limit impacts to sensitive resources, to maintain widely dispersed off-route use, or to connect popular areas to communities. Identify designated SPC areas and trailheads on previously disturbed areas that connect with the designated route network. Designated areas would include appropriate signing and access restrictions in order to limit proliferation, subject to site-specific analysis.
Route Proliferation Areas	Under all action alternatives, eliminate or reduce OHV access through route proliferation areas, and develop partnerships or pursue area-specific minimization measures to address route proliferation areas and reduce unauthorized use, as appropriate	
Access Points	Under Alternative 2, limit access points to manage sensitive resource and social impacts, and develop strategies to identify and publicize where these access points are and how to get to them.	Under Alternatives 3, 4, and 5, limit access points in high conflict areas to manage sensitive resource and social impacts, and develop strategies to identify and publicize where these access points are and how to get to them.
Race Pit Areas	Under Alternative 3, any race pit areas would be limited to those areas analyzed as such in compliance with NEPA, Section 106, and ESA compliance	Under Alternatives 4 and 5, any race staging and pitting areas for (C) routes would continue to be limited to OHV Open Area lands.
Specific Stopping, Parking, and Camping Areas	Under Alternative 3, identify SPC designated areas near the Cerro Coso Community College and the Desert Empire Fairgrounds in the City of Ridgecrest in support of the Spangler Hills OHV Area connector, and near the Outlet Mall in the City of Barstow in support of the Barstow to Stoddard Valley OHV Area connector, as needed. Under Alternative 3, SPC designated areas along Hoffman Road in the Fremont-Kramer DT ACEC, within the Superior-Cronese DT ACEC in the Coolgardie area, within the Superior-Cronese DT ACEC in the Black Mountain area, and within the Juniper Flats Subregion near the USFS boundary, and at other identified locations, would be considered. subject to site-specific analysis and consistent with the goals of this alternative and route designation criteria. Under Alternatives 4 and 5, the SPC area along Hoffman Road would be designated.	
Route Inventory System and Existing Geographic Identity and Public Knowledge		
Route Inventory	Under all action alternatives, maintain an accurate route inventory for management purposes, maintain an accurate network for the production of both general and recreation specific Transportation Management Network maps, and make maps available to the public through a wide variety of means, including electronic means.	
Use of Easements	Under all action alternatives, pursue reciprocal easements and utilized existing public easements to facilitate management of the primary access network and routes to major destinations.	

Table 2.2-9. Post-Designation Implementation Strategies for Action Alternatives

Addressing Substantial Impacts from Access	Under all action alternatives, develop site-specific minimization measures at popular and sensitive destinations that are experiencing substantial impacts from access, where appropriate.	
Non-Casual Uses		
New Rights-of-Way	Under all action alternatives, identify and direct right-of-way (ROW) and other authorized activities to existing corridors/sites (when reasonable), and emphasize joint use of routes by multiple ROW holders and/or the public, when appropriate. Continue to add existing VER to the network with appropriate limitations and mitigation, consistent with the goals of this alternative. Site-specific issues would be resolved under the terms of the authorization, in consultation with the permit or right-of-way holder	
Existing Rights-of-Way	Under Alternative 2, emphasize limited access and rehabilitation for commercial uses that are not major regional or interstate linear routes, when the authorization term expires;	Under Alternatives 3, 4, and 5, consider adding routes to the network that have previously been used for authorized uses if they enhance the network, consistent with other Plan goals, when the authorization terms expire
Boundaries for Management		
Adoption of TMAs	Under Alternatives 2 and 3, adopt eight TMAs to implement the route network.	Under Alternatives 4 and 5, adopt nine TMAs to implement the route network.
Management of Access in TMAs	Under Alternative 2, manage access in each of the TMAs to conserve sensitive resource values and areas, including sensitive biological, cultural, and other factors, consistent with the CDCA Plan as modified by the 2006 WEMO Plan and adopted 2016 DRECP LUPA	Under Alternatives 3, 4, and 5, manage access in each of these TMAs to provide public lands access while minimizing impairment to sensitive resource values and areas, including sensitive biological factors, cultural, and other factors, consistent with all of the CDCA Plan, as modified by the 2006 WEMO Plan and the 2016 DRECP LUPA. Also, manage access in each of the TMAs to enhance special areas and identified recreation management goals and facilities within or adjacent to them, consistent with other area goals. Under Alternatives 4 and 5, work with Caltrans to identify and sign designated OHV crossings along major transportation routes at Subregion boundaries.

PA II: Alternative 3 would delineate eight TMAs and associated modes of access and travel. The boundaries of the eight TMAs are shown in Figure 2.2-3, and are summarized in Table 2.2-3.

PA III: Under Alternative 3, there would be “C” routes available for competitive OHV races managed under a Special Recreation Permit year-round outside of ACECs and CDNCLs, including outside of DT ACECs (see Table 2-2 of the 2005 WEMO FEIS) in three distinct areas to enhance riding opportunities out of the smaller Spangler Hills OHV Area and partially offset the loss of similar riding opportunities in the Johnson Valley OHV Area, and to connect the Spangler Hills OHV Area to the community of Ridgecrest. These three areas are: to the northeast of the Spangler Hills OHV Open Area; the Summit Range plus the area east of Highway 395; and the urban interface area between the community of Ridgecrest and the Spangler Hills OHV Open Area.

PA IV: Alternative 3 would add Koehn, Cuddeback, and Coyote, and Chisholm Trail Lake lakebeds to the list of designated Lakebeds. Koehn Lakebed would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”. Cuddeback and Coyote lakebeds would be designated OHV Open use, subject to area specific minimization measures, and Chisholm Trail lakebed would be designated as closed to all types of human use as a result of potential adverse effects to public health due to historic mining.

PA V: In Alternative 3, the permit system established for motor-vehicle access to the Rand Mountains-Fremont Valley Management area would be replaced with a limited designated network that is intensively managed. Initial management parameters would be identified in the TMPs. Other general ACEC parameters would remain unchanged from the No Action alternative.

PA VI: Alternative 3 would continue to limit camping to previously disturbed areas adjacent to routes within 50 feet from the route centerline inside DT ACECs and CDNCLs. Stopping and parking would continue to be limited to within 50 feet of the centerline within DT ACECs and CDNCLs, except as site-specifically designated. Outside of DT ACECs and CDNCLs, camping would be further limited to previously disturbed areas adjacent to routes within 100 feet from the route centerline, while stopping and parking would be limited to within 100 feet of centerline, except as site-specifically designated.

PA VII: Livestock grazing in active allotments in DT ACEC would not change; allotments would be managed as modified in the DRECP LUPA. See Table 2.3-3 for a comparison of acres between alternatives that would be available for grazing.

Implementation Decisions for Route Designation/Minimization under Alternative 3

Routes and linear features in the 2013 route inventory were reviewed against the 43 CFR 8342.1 criteria for possible inclusion in the Alternative 3 travel network. The designations for routes in this alternative reflect the overall goals and objectives of Alternative 3, and provide all routes equal consideration for inclusion in the route network, including those that were not included in the inventories used for the 2006 WEMO Plan, and therefore were not evaluated under the designation criteria and considered while developing the 2005 WEMO FEIS route network. The following parameters were also used for identifying the preliminary Alternative 3:

- a. Stopping, parking and camping (SPC) parameters are further limited outside of DT ACECs and CDNCLs, specific to Alternative 3 (see PA VI), and used to further focus the impacts from criteria resources and the need for additional minimization measures, except as identified for designated locations.
- b. For the preliminary Alternative 3, routes in the OHV Limited Areas designated as “Closed” in the 2006 WEMO Plan decision would be initially designated as transportation linear disturbances under Alternative 3, and were subject to a route-specific review that determined if a route should be designated OHV Open, OHV Limited or OHV Closed.
- c. In the preliminary Alternative 3, routes in OHV Limited Areas designated as “Open” in the 2006 WEMO Plan, but which may have resource or other designation criteria conflicts, would not receive an initial identification. They would be highlighted to focus route-specific review for the identified conflicts and to determine whether to minimize impacts through changing their route designations or to keep them available for public use and identify appropriate mitigation measures.
- d. In keeping with the access focus of Alternative 3, this alternative defaults to maintaining current and historic public access, including on features which were not designated in 2006 (i.e., features that were added in 2013 as a result of the on-the-ground and GTLF inventory update). These features would be treated as currently designated routes in the network (no designation). Routes in OHV Limited Areas which were “Open” or which were not designated in the 2006 WEMO Plan, and which have no adverse impacts identified or do not otherwise trigger the need for minimization of impacts under the 43 CFR 8342.1 designation criteria would be initially identified as “OHV Open” (available for all travelers, including non-OHV and/or non-mechanized users), subject to route-specific review.
- e. Routes designated as “OHV Limited” in the 2006 WEMO Plan are initially identified as “Motorized-Authorized” or “Motorized-Administrative” (specific to the limitation), as applicable, and were subjected to a route-specific review that determined if a route is OHV Open, OHV Limited or OHV Closed. Many Motorized-Authorized or OHV Limited use routes have undergone site-specific review and mitigation associated with a permit or other authorization. If conflicts are identified, these route features again would be highlighted, in order to focus the route-specific review for the identified conflicts. These conflicts would also be factored into determining whether routes would be available for public use and appropriate mitigation measures associated with route use. Minimization measures, including classification as transportation linear disturbances, may be applied where impacts have been identified under the 43 CFR 8342.1 criteria.
- f. Under Alternative 3, the designation of route ending at a jurisdictional boundary or private property would generally be initially designated in a similar manner as those in the Proposed Action unless a range of options presented itself, consistent with the designation criteria.
- g. For routes used for, or intersecting, a SRP area, the route would generally be initially modified to match the form of SRP use (e.g., non-motorized for mountain bike use). In the case where multiple types of SRP use exist, the route designation in this alternative would initially be the most inclusive designation, consistent with the designation criteria.

If the route intersected an SRP area, the route would be initially designated as OHV Open use to provide access to the area. Additional mitigation measures would be included as necessary to address criteria resources, and adjustments would be made based on site specific review.

- h. For routes which have multiple user conflicts, the initial designation deferred the designation to the OHV user over the non-OHV or non-mechanized user under Alternative 3, consistent with the designation criteria. If the conflict was between forms of motorized users, the designation deferred to smallest vehicle (i.e., motorcycle above four-wheel drive vehicle). Generally the other options would be captured in Alternatives 2, 4, and 5 to give a full range of alternatives, if appropriate. Additional mitigation measures would be identified as needed.
- i. Under Alternative 3, routes intersecting a national designated trail would also be designated in a similar manner as Alternative 2, unless a range of options presented itself. If the route provides access to a trailhead, it would be designated as motorized, unless there were no parking or staging area, or if the route is located a distance from the designated trail, consistent with the designation criteria. If the route conflicted with trail use, such as traveling parallel to the trail, then it would generally be designated as a transportation linear disturbance. Additional measures would be identified as needed.
- j. For routes located in a heavily disturbed area within sensitive areas, the route would be initially designated as transportation linear disturbance, except as needed to maintain connectivity of the network or to access key resource and recreational sites, in order to minimize impacts to air quality and prevent additional habitat disturbance to the area. For routes located in a heavily disturbed area outside of sensitive areas that would otherwise be "OHV Open", the route designation was initially identified as "OHV Open" and site-specifically reviewed. Where appropriate, at least one OHV Open use route was maintained in the various directions, unless a designation of transportation linear disturbance was needed to improve manageability of the area. If additional conflicts existed, depending on the severity, an entire area of routes may have been designated as a transportation linear disturbance or open with mitigation measures. A few route proliferation areas may be identified as potential staging or camping areas under Alternative 3. Heavily disturbed areas are areas which have a significant density of routes within a very small area, such as historic vehicle play or staging areas.

The minimization triggers used to initially identify the GIS version of Alternative 3 route designations, and to determine whether a route or feature requires minimization and mitigation under Alternative 3, are provided in Table 2.2-4.

Alternative 3 Route Designations

The transportation network associated with Alternative 3 is shown in Figure 2.2-5, and the mileage associated with each type of designation is presented in Table 2.2-10. A comparison of the route network mileages among alternatives is presented in Table 2.3-2.

Table 2.2-10. Alternative 3 - Miles of Routes Designated

Use Description	Mileage ¹	Percentage of Total Network
Total Motorized (OHV Open and Limited)	10279.5	67.6
Total OHV Open	9656.9	63.5
Total OHV Limited	622.6	4.1
Subdesignation: Administrative	22.2	0.1
Subdesignation: ATV/UTV	0.5	<0.1
Subdesignation: Authorized/Permitted	384.1	2.5
Subdesignation: Competitive “C” Route	100.1	0.7
Subdesignation: Motorcycle	37.5	0.2
Subdesignation: Seasonal	6.3	<0.1
Subdesignation: Street Legal	71.9	0.5
Total OHV Closed	4953.8	32.5
Non-Motorized	88.9	0.6
Non-Mechanized	88.9	0.6
Transportation Linear Disturbance	4776.0	18.0

1 - Total inventory of GTLF (including closed routes) is approximately 15235 miles

The transportation network under this alternative focuses on maintenance of access to serve multiple-use management, where such access is consistent with regulations and policies for natural and cultural resource and multi-species conservation. For previously existing, undocumented linear features identified in the 2013 inventory update, the default is for the designation of the feature and minimization and mitigation measures to be considered within the context of potential adverse impacts. This approach focuses on the use of other minimization measures, as opposed to classification as transportation linear disturbances, as the primary strategy for resolution of identified adverse impacts, where feasible.

- Destination- and Touring-access oriented designation of routes.
- Area-wide minimization across all public lands.
- Recreation/Conservation Balanced minimization and mitigation measures.
- Broad network-opportunities.
- Site-specific problem-focused implementation.
- 10,280 miles of OHV Open and OHV Limited routes.

Network-Wide Minimization Measures under Alternative 3

The network-wide minimization measures summarized in Table 2.2-1 were utilized in the development of Alternative 3 to minimize impacts. Additional specific parameters for each TMA may be included in the TMPs.

Post-Designation Implementation Strategies under Alternative 3

Specific components to implement the planning goals and objectives, including the route designations, of each of the action alternatives are provided in Table 2.2-9. Future changes to the network would be developed consistent with these goals and objectives. General implementation direction for all action alternatives is identified in Table 2.2-5. More specific parameters for each TMA would be included in the TMPs.

2.2.4 Alternatives 4 (Draft) and 5 (Proposed Action)

Goals and Objectives under Alternatives 4 and 5

The goals and objectives associated with each of the action alternatives are presented in Table 2.2-2. Alternatives 4 and 5 provide for OHV access in a manner that balances the needs of all desert users, private landowners, local communities, and other public agencies, by focusing on implementation strategies that promote and support active partnerships. The alternatives utilize the No Action Alternative as their basis, respond to public scoping comments, the recommendations of the Desert Advisory Council, and other agency and community input with respect to both resource conservation and increased recreational access. Then specific minimization measures are applied to minimize damage to resources, minimizing harassment of wildlife, and minimize conflicts consistent with increased emphasis on current use patterns, destinations, issues, and plans, where appropriate.

Plan Amendment under Alternatives 4 and 5

Under Alternatives 4 and 5, the plan amendment decision (PA I) that is common to all action alternatives, and is described in Section 2.1.1 would be made. Of the six plan amendment decisions (PA II – PA VII) that vary among alternatives, the following decisions would be made under Alternatives 4 and 5:

PA II: Alternatives 4 and 5 would delineate nine TMAs and associated modes of access and travel. The boundaries of the nine TMAs are shown in Figure 2.2-6. The boundaries of the nine TMAs included in Alternatives 4 and 5 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain subregions) would be split into two separate TMAs. The Rands and Red Mountain subregions would remain designated as TMA 7, but the Ridgecrest and El Paso subregions would be managed separately as TMA 9.

PA III: Under Alternatives 4 and 5, there would be “C” routes available for competitive OHV races managed under a Special Recreation Permit year-round outside of ACECs and CDNCLs, including outside of DT ACECs (see Table 2-2 of the 2005 WEMO FEIS) in distinct areas to enhance riding opportunities out of the smaller Spangler Hills OHV Area and partially offset the loss of similar riding opportunities in the Johnson Valley OHV Area. These “C” routes are to the northeast of the Open Area above the Randsburg Wash Road and within the Summit Range and east of Highway 395 and would be managed under a Special Recreation Permit. There are approximately 20 to 30 miles of designated “C” routes in each of these areas. These designated “C” routes were originally identified and approved for use in the Spangler Hills OHV Area Management Plan (1992). Allow for speed-controlled route-connector loop between non-

connecting portions of the remaining Johnson Valley OHV Recreation Area and between Johnson Valley and Stoddard Valley OHV Open Areas.

PA IV: Alternatives 4 and 5 would add Koehn, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds to the list of designated Lakebeds, and would designate Koehn lakebed as “Closed OHV use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and designate Chisholm Trail as OHV Closed to all types of human use as a result of potential adverse effects to public health due to historic mining.. The other two lakebeds (Cuddeback and Coyote) would be designated as OHV Open use.

PA V: In Alternatives 4 and 5, the permit system established for motor-vehicle access to the Rand Mountains-Fremont Valley Management area would be replaced with a limited designated network that is intensively managed. Initial management parameters would be identified in the TMPs. Other general ACEC parameters would remain unchanged from the No Action alternative.

PA VI: Alternatives 4 and 5 would limit camping to previously disturbed areas adjacent to routes within 50 feet from the route centerline inside DT ACECs and CDNCLs, while stopping and parking would be limited to within 50 feet of the centerline within DT ACECs and CDNCLs, except as site-specifically designated. Outside of DT ACECs and CDNCLs, camping would be limited to previously disturbed areas adjacent to routes within 100 feet from the route centerline except as site specifically designated, while stopping and parking would be limited to within 100 feet of centerline, except as site-specifically designated. Where needed, designated SPC, secondary-vehicle staging areas, and trailheads may be identified and evaluated on previously disturbed areas that connect with the designated route network and that extend beyond these parameters, with appropriate signing and access restrictions, in order to limit proliferation in popular or sensitive areas, and subject to site-specific analysis.

PA VII: Livestock grazing in active allotments in DT ACEC would not change; allotments would be managed as modified in the DRECP LUPA. See Table 2.3-3 for a comparison of acres between alternatives that would be available for grazing.

Implementation Decisions for Route Designation/Minimization under Alternatives 4 (Draft Proposed Action) and 5 (Final Proposed Action)

Routes and linear features in the updated route inventory were reviewed against the 43 CFR 8342.1 criteria for possible inclusion in the Proposed Action travel network. The designations for routes reflect the overall goals and objectives of the Proposed Action. Designations provide routes equal consideration for inclusion in the route network, subject to area-and route-specific parameters outlined below. Routes may be included in the Proposed Action network that were not included in the inventories used for the 2006 WEMO Plan, and therefore were not evaluated under the designation criteria and considered while developing the 2005 WEMO FEIS route network. The following parameters were also used for identifying the Proposed Action:

- a. Stopping, parking and camping (SPC) parameters are further limited outside of DT ACEC and CDNCLs, specific to the Proposed Action (see PA VI), and used to limit area disturbance and further focus the impacts from criteria resources and the need for additional minimization measures, except as identified for designated locations.

- b. For the Proposed Action, routes in the OHV Limited Areas designated as “Closed” in the 2006 WEMO Plan decision would be initially designated as transportation linear disturbances under the Proposed Action, and were subject to a route-specific review that determined if a route should be OHV Open, OHV Limited or OHV Closed.
- c. In the Proposed Action, routes in OHV Limited Areas designated as “OHV Open” in the 2006 WEMO Plan, but which may have resource or other designation criteria conflicts, would not receive an initial identification. They would be highlighted to focus route-specific review for the identified conflicts and to determine whether to minimize impacts through changing their route designations or to keep them available for public use and identify appropriate mitigation measures.
- d. Linear route features which were not designated in 2006 (i.e., features that were added as a result of the on-the-ground and GTLF inventory update), would be initially considered based on the current levels of impact to sensitive resources. In designated sensitive areas where linear disturbances are currently below the adopted disturbance caps, these features would be treated the same as currently designated routes in the network. Routes which were “OHV Open” or which were NOT designated in the 2006 WEMO Plan, and which do not have adverse impacts or do not otherwise trigger the need for minimization of impacts under the 43 CFR 8342.1 designation criteria would be initially identified as “OHV Open” (available for all travelers, including non-OHV or non-mechanized users), subject to route-specific review. If conflicts have been identified, no initial designation is identified. They would be highlighted to focus route-specific review for the identified conflicts and to determine whether to minimize impacts through changing their route designations or to keep them available for public use and identify appropriate mitigation measures. Minimization measures, including classification as transportation linear disturbances, may be applied where impacts have been identified under the 43 CFR 8342.1 criteria.
- e. Linear features which were not designated in 2006 (i.e., features that were added as a result of the on-the-ground and GTLF inventory update) that are located in designated sensitive areas where linear route disturbances are currently above the adopted disturbance caps, would be initially designated as transportation linear disturbances under the Proposed Action, and were subject to a route-specific review that determined if a route should be OHV Open, OHV Limited or OHV Closed.
- f. Linear features which were not designated in 2006 (i.e., features that were added as a result of the on-the-ground and GTLF inventory update), that are located in one of the designated sensitive areas where linear route disturbances are currently above the adopted disturbance caps, and which were overlooked in the 2006 WEMO Plan route designations, would initially be designated consistent with the current on-the-ground public network (generally this is the route network adopted through the 1985 through 1987 designation effort), and were subject to a route-specific review that determined if a route should be OHV Open, OHV Limited or OHV Closed. In these areas, mitigation for disturbances above the 1985 through 1987 approved network would be identified, consistent with the adopted strategy in the DRECP LUPA. Minimization measures, including classification as transportation linear disturbances, may be applied where impacts have been identified under the 43 CFR 8342.1 criteria.

- g. Routes designated as “Limited” to authorized users in the 2006 WEMO Plan are initially identified as both OHV Open use (available for public use) and “motorized-authorized” (OHV Limited use) (specific to the limitation), as applicable, subject to route-specific review. Unless specific barriers, gates, safety issues, or seasonal limits apply, generally limited routes are made available for public use in the Proposed Action. Many Motorized-Authorized routes have undergone site-specific review and mitigation associated with a permit or other authorization. If conflicts are identified, these route features again would be highlighted, in order to focus the route-specific review for the identified conflicts. These conflicts would also be factored into determining whether routes would be available for public use and appropriate mitigation measures associated with route use.
- h. Under the Proposed Action, the designation of routes ending at a jurisdictional boundary would generally be initially designated in a similar manner as the route on the adjacent jurisdiction, subject to coordination. Routes through lands acquired by another jurisdiction for conservation purposes are initially designated as transportation linear disturbances to minimize route disturbances to the extent possible, except to maintain network connectivity and access to major destinations and authorized uses.
- i. Under the Proposed Action, the designation of a route ending at private property would generally be initially designated based on other resource factors, its location in the planning area, and whether the private landowner has multiple access routes to their land. In rural residential areas, most routes have been designated as street-legal only. Routes may be designated as transportation linear disturbances if multiple ingresses to the private property are available.
- j. Routes in areas where the Small Tracts Act is in effect remain available in some manner, consistent with current policy. Routes in Small Tracts Act areas that overlap county service areas and special districts and, consistent with other parameters of the Proposed Action, have been designated as “street-legal only”.
- k. Under the Proposed Action, for routes used for SRP, the route designation is initially identified as the most inclusive designation that is permitted, consistent with the designation criteria. If the route intersects an SRP area, the route is initially designated as OHV Open use to provide access to the area. Additional minimization and mitigation measures are identified as necessary to address criteria resources, and adjustments are made based on site specific review.
- l. For routes which have multiple user conflicts, the initial designation is deferred under the Proposed Action, and is determined based on site-specific review, consistent with the designation criteria. Generally, routes that are designated as available for public use are made available inclusively for multiple user groups, including OHV Open use, as well as non-OHV and non-mechanized uses. Routes designated for specific subgroups of users are considered where long-term commitments can be identified to maintain them for use by a subgroup. Strategies to develop and maintain specific-user routes are included in the appropriate TMPs.
- m. Under the Proposed Action, initial designation of routes intersecting a national designated trail depends on two factors. If the route provides access to a trailhead, it is initially designated as OHV Open use, unless there is no parking or staging area, or if the route is

located a distance from the designated trail, consistent with the designation criteria and subject to route-specific review. If the route conflicts with trail use, such as traveling parallel to the trail, then it is designated as a transportation linear disturbance. Additional minimization and mitigation measures are identified as needed to address criteria resources and potential user conflicts.

- n. Under the Proposed Action, routes located in a highly disturbed area within sensitive areas are initially designated as transportation linear disturbances, except as needed to maintain connectivity of the network, subject to route-specific review, in order to minimize impacts to air quality and prevent additional habitat disturbance to the area. Designating routes to access key resource and recreational sites may be considered subject to site-specific review. Under the Proposed Action, routes located in a highly disturbed area outside of sensitive areas that would otherwise be “OHV Open”, are initially identified as “OHV Open” and site-specifically reviewed. Where appropriate, at least one OHV Open use route is maintained in the various directions, unless a designation of transportation linear disturbance improves manageability of the area or is dictated by adverse resource impacts. If additional conflicts exist, depending on the severity, an entire area of routes may be designated as transportation linear disturbances or subject to area-wide mitigation measures. A few highly disturbed areas may be identified as potential staging or camping areas under the Proposed Action to eliminate the use of other high-disturbance areas that may be located in sensitive areas. Route proliferation areas are areas which have a significant density of routes within a very small area, such as historic vehicle play or staging areas.

The minimization triggers used to identify the GIS version of the Proposed Action route designations are the same as those used for Alternatives 3 and 4, and are identified in Table 2.2-4. The minimization triggers are also used to determine whether a route or feature requires minimization and mitigation under the Proposed Action.

Alternative 4 and 5 Route Designations

The transportation network associated with Alternative 4 is shown in Figure 2.2-7, and the mileage associated with each type of designation under Alternative 4 is presented in Table 2.2-11. A comparison of the route network mileages among alternatives is presented in Table 2.3-2.

Table 2.2-11. Alternative 4 - Miles of Routes Designated

Use Description	Mileage ¹	Percentage of Total Network
Total Motorized (OHV Open and Limited)	5954.7	39.1
Total OHV Open	5214.3	34.3
Total OHV Limited	740.5	4.8
Subdesignation: Administrative	15.4	0.1
Subdesignation: ATV/UTV	128.5	0.8
Subdesignation: Authorized/Permitted	235.6	1.5
Subdesignation: Competitive “C” Route	80.9	0.5
Subdesignation: Motorcycle	124.9	0.8
Subdesignation: Seasonal	6.4	<0.1
Subdesignation: Street Legal	148.8	0.9

Total OHV Closed	9279.7	60.9
Non-Motorized	80.5	0.5
Non-Mechanized	118.9	0.8
Transportation Linear Disturbance	9080.3	59.6

1 - Total inventory of GTLF (including closed routes) is approximately 15235 miles

The transportation network associated with Alternative 5 is shown in Figure 2.2-8, and the mileage associated with each type of designation under Alternative 5 is presented in Table 2.2-12. A comparison of the route network mileages among alternatives is presented in Table 2.3-2.

Table 2.2-12. Alternative 5 - Miles of Routes Designated

Use Description	Mileage ¹	Percentage of Total Network
Total Motorized (OHV Open and Limited)	6247.1	41.0
Total OHV Open	5178.1	34.0
Total OHV Limited	1069	7.0
Subdesignation: Administrative	0	0
Subdesignation: ATV/UTV	100.9	0.7
Subdesignation: Authorized/Permitted	347.2	2.3
Subdesignation: Competitive "C" Route	105.4	0.7
Subdesignation: Motorcycle	120.5	0.8
Subdesignation: Seasonal	5.9	<0.1
Subdesignation: Street Legal	389.1	2.6
Total OHV Closed	8988.0	59.0
Non-Motorized	123.5	0.8
Non-Mechanized	124.3	0.8
Transportation Linear Disturbance	8740.2	57.4

1 - Total inventory of GTLF (including closed routes) is approximately 15235 miles

The transportation network under Alternatives 4 and 5 focuses on maintaining access to serve existing transportation needs, provide additional recreational opportunities consistent with network and designated area goals, limit access in sensitive areas to minimize habitat, wildlife, cultural, and other resource impacts, address adopted disturbance caps, and minimize conflicts between users, consistent with regulatory criteria and policies for natural and cultural resource and multi-species conservation.

The Proposed Action considers designation of additional routes (those not currently available to the public or commercial users), including those previously existing, undocumented linear features identified in the 2013 inventory update, within the context broader conservation objectives. The initial Proposed Action network was reviewed within these same broader conservation objectives. In addition, potential route-specific resource impacts have been reviewed, based on the identified minimization triggers, to determine minimization measures, including classification as transportation linear disturbances, to resolve identified impacts. These reviews resulted in a preliminary Proposed Action network. Finally, the overall network was reviewed for connectivity, and refined to address specific transportation management objectives for the area. A summary of key aspects of the Proposed Action includes:

- Destination- and Touring-access oriented designation of routes.
- Area-wide minimization across all public lands.
- Area-wide constraints in problem or issue areas.
- Additional access opportunities in areas with fewer area-wide constraints.
- Recreation/Conservation Balanced minimization measures.
- Designated route assemblages to address popular destinations in sensitive areas.
- Enhanced designated trailhead system.
- Site-specific problem-focused implementation.
- Partnership-focused implementation.
- 6,247 miles of OHV Open and OHV Limited routes.

Network-Wide Minimization Measures under Alternatives 4 and 5

The network-wide minimization measures summarized in Table 2.2-1 were utilized in the development of the Draft and Proposed Actions to minimize impacts. Additional specific parameters for each TMA may be included in the proposed TMPs.

Post-Designation Implementation Strategies under Alternatives 4 and 5

Specific components to implement the planning goals and objectives, including the route designations, of each of the action alternatives are provided in Table 2.2-9. Future changes to the network would be developed consistent with these goals and objectives. General implementation direction for all action alternatives is identified in Table 2.2-5. More specific parameters for each TMA would be included in the TMPs.

2.3 Comparison of Alternatives

Comparison of Plan Amendments Among Alternatives

Table 2.3-1 summarizes the differences between the alternative plan amendments. Of the seven plan amendment provisions being considered among the five identified alternatives, one (PA I) would be the same under each of the action alternatives, while six would be varied among the action alternatives. PA I (modification of the language limiting travel to existing routes) would be the same under Alternatives 2, 3, 4, and 5. The changes associated with PAs II through VII would vary among Alternatives 2, 3, 4, and 5. No plan amendments would be made under the No Action Alternative.

Table 2.3-1. Summary of Plan Amendments under Each Alternative

Plan Amendment		Alt. 1 - No Action Alternative	Alt. 2	Alt. 3	Alts. 4 Draft and 5 – Final Proposed Action
I		CDCA Plan language limiting travel to existing routes would not be amended.	CDCA Plan language limiting travel to existing routes would be amended.		
II		0 - TMAs	8 – TMAs	8 – TMAs	9 - TMAs
III		Parameters for the management of organized competitive motorized vehicle events would not be established.	Parameters for the management of organized competitive motorized vehicle events would be established.		
IV		The descriptions of approved access to specific wash, dune, and dry lake areas would not be updated.	The descriptions of approved access to specific wash, dune, and dry lake areas would be updated.		
V		The requirement for a permit to enter the designated access network in the Rand Mountains-Fremont Valley Management Area would remain.		The requirement for a permit to enter the designated access network in the Rand Mountains-Fremont Valley Management Area would be eliminated.	
VI	Stopping and Parking Limits	DT ACECs and CDNCLs: 50 feet from centerline Outside of DT ACECs: 300 feet from centerline	DT ACECs and CDNCLs: 50 feet from centerline Outside of DT ACECs: 50 feet from centerline	DT ACECs and CDNCLs: 50 feet from centerline Outside of DT ACECs: 100 feet from centerline	
	Camping Limits	Adjacent to routes, consistent with regulations DT ACECs and CDNCLs: Previously existing sites adjacent to routes designated open Outside of DT ACECs: Within 300 feet from routes designated open	DT ACECs and CDNCLs: Previously existing sites within 50 feet from centerline Outside of DT ACECs: Previously existing sites within 50 feet from centerline	DT ACECs and CDNCLs: Previously existing sites within 100 feet from centerline Outside of DT ACECs: Within 100 feet from centerline	

Table 2.3-1. Summary of Plan Amendments under Each Alternative

Plan Amendment	Alt. 1 - No Action Alternative	Alt. 2	Alt. 3	Alts. 4 Draft and 5 – Final Proposed Action
VII	Livestock grazing would continue in DT ACECs and CHU in the Ord Mountain, Cantil Common, and Shadow Mountain Allotments.	Livestock grazing would be eliminated in DT ACECs and CHU in the Ord Mountain, Cantil Common, and Shadow Mountain Allotments.		Livestock grazing would continue in DT ACECs and CHU in the Ord Mountain, Cantil Common, and Shadow Mountain Allotments.

Comparison of Route Networks Between Alternatives

Table 2.3-2 summarizes the differences between the features of the alternative route networks.

Table 2.3-2. Comparison of Length (miles) of Alternative Route Networks

Designation	Alt. 1 – No Action	Alt. 2	Alt. 3	Alt. 4 – Draft Proposed Action	Alt. 5 – Final Proposed Action
Total Motorized (OHV Open and Limited)	5677	4912	10279.5	5954.7	6247.1
Total OHV Open	4999.9	3411.6	9656.9	5214.3	5178.1
Total OHV Limited	678.3	1500.1	622.6	740.5	1069
Subdesignation: Administrative	15.1	88.9	22.2	15.4	0
Subdesignation: ATV/UTV	0	6.6	0.5	128.5	100.9
Subdesignation: Authorized/Permitted	557.9	985.7	384.1	235.6	347.2
Subdesignation: Competitive “C” Route	44.4	49.1	100.1	80.9	105.4
Subdesignation: Motorcycle	37.7	21.3	37.5	124.9	120.5
Subdesignation: Seasonal	5.9	6.3	6.3	6.4	5.9
Subdesignation: Street Legal	17.3	342.2	71.9	148.8	389.1
Total OHV Closed	9957¹	10322.3	4953.9	9279.7	8988.0
Non-Motorized	0	31.7	88.9	80.5	123.5
Non-Mechanized	27.6	66.2	88.9	118.9	124.3
Transportation Linear Disturbance	9529	10224	4776.1	9080.3	8740.2

¹ Total includes 964 miles of transportation linear features that data was not available for in 2006. Mileage is rounded to nearest whole number.

Results of Preliminary Transportation Network Designation Process

The current inventory of linear transportation features in the GTLF was developed for the WMRNP by beginning with the 2006 WEMO Plan designated route network in GIS, and then adding linear features identified through the review of NAIP aerial photos. This resulted in an updated GTLF that represented the on-the-ground inventory of linear features as of early 2013. This inventory comprises a total of 14,943 miles of linear features.

Within this inventory, the subset of linear features that are in the 2006 WEMO Plan designated route network comprise the No Action Alternative. As discussed above, the linear features within this alternative were designated as OHV Open, OHV Limited, OHV Closed or transportation linear disturbances. The mileage of the network within the No Action Alternative is 5,677 miles, but this total comprises only motorized routes designated as OHV Open use or OHV Limited use, and does not include OHV Closed use, transportation linear disturbances, non-motorized, or non-mechanized routes.

Then, to develop Alternatives 2, 3, 4, and 5, each linear feature in the inventory was considered within the context of the objectives of that alternative. Based on a review of the objectives and the coincidence of the route with potentially impacted resources, the route was either included in the designated travel network, or was considered to be a transportation linear disturbance. Sub-designations were also made, including identification of the route as “motorized” (OHV Open use or OHV Limited), “non-motorized”, or “non-mechanized”; identification of specific modes of travel; and identification of minimizations including authorization/permit, administrative, or seasonal restrictions.

For Alternatives 2, 3, 4, and 5, the alternatives vary the specific designations made to each inventoried linear feature in order to achieve resource protection, recreation access, and community access goals, but the inventory used to develop the route network assignments was the same for all alternatives. As a result of the designation decisions made in the WMRNP, the physical on-the-ground network may be modified, including physical closure of routes currently open to OHV use as well as the opening of routes currently designated as transportation linear disturbances. These routes would be reclassified as transportation linear disturbances, motorized (OHV Open or OHV Limited use), non-motorized, or non-mechanized.

Following publication of the 2015 DSEIS and review of public comments, Alternative 4 was re-developed as the Draft Proposed Action network, and was analyzed in the 2018 DSEIS. Following review of public comments on the 2018 DSEIS, Alternative 5 was developed as the Final Proposed Action network. The issues considered in the development of the Final Proposed Action network include:

- Additional updates to the route inventory since the 2015 DSEIS;
 - An additional 235 miles in the final route network as a result of right-of-ways, street-legal only routes, access to private lands for homeowners, and a small increase in route connectivity for user safety and other TTM route designation criteria
- Consideration of additional or updated resource data, including:
 - Department of Defense land acquisitions with conservation easements;
 - Additional data on soil erosion;
 - Updated desert tortoise habitat data;

- Updated Clean Air Act attainment classifications;
- Designation of Mojave Trails and Sand to Snow National Monuments; and
- New land use designations, visual resource management (VRM) classifications, and grazing changes adopted through the DRECP LUPA.
- Re-consideration of previous and draft route designations based on public comments on the 2018 DSEIS;
- Designation of routes as transportation linear disturbances in the Ft. Irwin mitigation area;
- Assignment of the street-legal subdesignation to motorized;
- Compliance of the route network with cumulative DRECP LUPA conservation management actions; and
- Consistency with goals established in the TMPs.

The Final Proposed Action includes elements of each of the action alternatives evaluated in the DSEIS, as modified as described above. The Final Proposed Action includes minimization measures to address impacts, and integrates some elements of the No Action Alternative and Alternatives 2, 3, and 4 in order to enhance community values, address DAC issues, and respond to specific agency comments, consistent with the Final Proposed Action goals and objectives. Additional mitigation has been incorporated where appropriate to address these changes, as well as to conform to mitigation requirements required by the DRECP LUPA. The Final Proposed Action (Alternative 5) includes 569 miles more of OHV Open and OHV Limited use designated routes than the network approved under the 2006 WEMO Plan, and has 789 fewer miles of transportation linear disturbances than the No Action Alternative. The Final Proposed Action would make available to the public, or to authorized users, 6,247 miles of motorized routes, and also would designate as transportation linear disturbances 8,740 miles of routes. In addition, Alternative 5 incorporated 389 miles of street-legal only routes for the San Bernardino County Maintain Road System (CMRS) (130 miles) and Special Service Districts, as opposed to Alternative 4, which incorporated street-legal route designations only for the CMRS.

The Final Proposed Action is intended to provide recreational, local, and commercial access on routes in the planning area that do not result in unacceptable impacts to sensitive resources. The Final Proposed Action also would maintain access on routes that are being used appropriately, that is, to the extent their use is not causing unnecessary and undue impacts to public lands and resources.

Summary Comparison of Livestock Grazing Proposals Between Alternatives

Table 2.3-3 summarizes the differences between the alternatives with respect to grazing allotments. Under Alternative 2, livestock would be discontinued and there would be a reallocation of AUMs for all livestock grazing within DT ACECs. This would make livestock grazing unavailable in portions of the Cantil Common, Ord Mountain, and Shadow Mountain Allotments. There would be no changes to livestock grazing under the No Action Alternative, or Alternatives 3, 4, or 5.

Table 2.3-3. Comparison of Alternative Grazing Program Allotment Components¹

Allotment	Alternative	Allotment Acres Remaining Outside DT ACECs	Allotment Acres Remaining Within DT ACECs	AUMs
Cantil Common	1	196,171	6,726	0
	2	196,171	0	0
	3	196,171	6,726	0
	Alt 4 (Draft) and Alt 5 (Final Proposed Action)	196,171	6,726	0
Ord Mountain	1	20,529	107,779	3,632
	2	20,529	0	581
	3	20,529	107,779	3,632
	Alt 4 (Draft) and Alt 5 (Final Proposed Action)	20,529	107,779	3,632
Shadow Mountain	1	16,364	3,323	0
	2	16,364	0	0
	3	16,364	3,323	0
	Alt 4 (Draft) and Alt 5 (Final Proposed Action)	16,364	3,323	0

¹ There would be no changes to any other allotments.

2.4 Alternatives Considered but Eliminated from Detailed Evaluation

Density cap on routes

Specific route density caps (mileage and township) were considered at length in the 2006 WEMO Plan for the entire Desert Tortoise (DT) Category I and Category II habitat areas. The alternative was dismissed due to the arbitrary nature of the density caps, which had no basis in the Desert Tortoise Recovery Plan or the scientific literature. The alternative was dismissed from further analysis in favor of a process that considered specific issues known to be associated with desert tortoise sensitivity (2005 WEMO Plan FEIS, p. 2-26). In addition, the area wide density would need to consider the relative importance of other criteria resource values, which are also tied to specific factors related to each resource. Opening or classification as transportation linear disturbance of a route may result in specific impacts to criterion resources. The process of making a route designation for features based only on the area designation precludes a feature-specific consideration of resource impacts, as required by 43 CFR 8342.1. Therefore this approach was again dismissed from further analysis.

1985-1987/ACEC Route Network Alternative

This alternative would keep in place the specific route designations as they existed prior to the June, 2003 adopted interim route network. This alternative was also considered at length in the 2005 WEMO FEIS (pp. 2-228-229) and dismissed from further consideration. The alternative was dismissed due to several reasons: These issues are still valid—the network has continuity

issues and design flaws. Inaccuracies were found in locating routes in the open route network and the network lacked connectivity, particularly at the edges with ACECs and with networks on adjacent lands. It no longer provides a reasonable network adjacent to substantially developed areas in the southern portions of the planning area. Substantial new rights-of-way, urban development, and other commercial and access development has occurred since that time. While the 1985-1987 network did a fair job at documentation of its rationales for many of the closures and limitations under 43 CFR 8342.1, it did not do as good a good documentation job for routes that were left open.

In addition, a multitude of changes in resource conditions have ensued since these designations, which are more than 20 years old. The network was developed prior to the listing of the desert tortoise as threatened and the designation of CHUs. This network was developed prior to the California Desert Protection Act, which designated areas of the planning area as Wilderness, prior to an OHV area addition and boundary adjustments, prior to many ACEC designations and boundary or management plan adjustments, prior to the listing of various plants, prior to the significant growth of the Victor Valley region. Major changes have also occurred in the grazing program and due to major fires that resulted in watershed level changes in plant cover. For these reasons, the 1985-1987 network was not carried forward for analysis.

2.5 Modifying the Plan

Most network and other implementation strategy changes would require NEPA review but not a plan amendment, because they would not result in an alteration of the underlying management plan. Thresholds for changing the Land Use Plans are outlined in 43 CFR 1610.5-5, which states that an amendment should be considered if there is a need to consider "a proposed action that may result in a change to the scope of resource uses or a change in the terms, conditions, and decisions of the approved plan." Major changes may require evaluation for plan amendment. The general factors to be considered to determine if a plan amendment evaluation is warranted under 43 CFR1610.5-5, and to determine if development of additional location-specific plan amendment thresholds are warranted include:

- Network changes substantially alter overall motor-vehicle use patterns in a subregion.
- Network or strategy changes require revision of WEMO Planning Area goals or overall TMA goals.
- Network changes involve large acquisitions or disposals with multiple access options or adjustments.
- Network changes involve addition of substantial (improved) routes to the current network that are not part of a larger project-specific review.
- Changes involve new route construction outside an existing transportation or utility corridor in excess of parameters (e.g., minor re-alignment) outlined on page 2-167 of the 2005 WEMO FEIS.

Network and implementation strategies should be adequate to address sensitive resource values in the area, including being adaptive to new information (e.g., new listings of species, responsive to fire damage). Thresholds for changing the planning elements of this amendment would be consistent with the guidance of the CDCA Plan (1999, rewrite, p. 119), as amended, including

parameters identified in parts of the 2006 WEMO Plan, and the 2016 DRECP LUPA (e.g., limitations on disturbances) that are not being considered for amendment herein. Location-specific parameters for network changes that could trigger a plan amendment may be established on a TMA or Subregion-specific basis, as appropriate. At this point, location-specific triggers have not been identified, but may be established as a result of public and other agency comment. This guidance would augment Section 2.2.6.11 of the 2005 WEMO FEIS.

CHAPTER THREE

AFFECTED ENVIRONMENT

Chapter 3 describes the environmental resources in the WEMO Planning Area that could be affected by implementation of the WMRNP and plan amendment actions for livestock grazing. Chapter 3 describes resources, resource uses, special designations, and other important topics (i.e., public health and safety, social and economic considerations, and environmental justice conditions) that may be impacted by the WMRNP. “Resources” include air, greenhouse gases, soil, water, vegetative communities, wildlife and plant species, as well as cultural and visual resources. “Resource uses” include livestock grazing, minerals, recreation management, transportation and public access, and lands and realty. “Special designations” include ACECs, DT CDNCLs, Wilderness areas, WSAs, and national monuments. The analysis also considered lands managed for wilderness characteristics.

Information and data used to prepare this chapter were obtained from the CDCA Plan, the 2006 WEMO FEIS, and various BLM planning and NEPA documents, including the 2016 DRECP LUPA. This information also includes grazing allotment specific environmental assessments (EAs) prepared for the renewal of grazing permits and leases. Information and data were also collected from many other related planning documents and research publications prepared by various federal and state agencies, and from private sources pertaining to key resource conditions and resource uses found within the project area. The purpose of this chapter is to provide a description of affected resources and BLM program areas within the existing environment of the planning area, which will be used as a baseline to evaluate and assess the impact of the WMRNP and grazing alternatives described in Chapter 2. Descriptions and analyses of the impacts of the WMRNP are presented in Chapter 4, “Environmental Consequences.”

3.1 Area Profile

The remainder of Chapter 3 describes the affected environment of the BLM-administered public lands within the WEMO Planning Area as it relates to the WMRNP and livestock grazing in Section 3.7. A complete description of the resources can be found in the CDCA Plan and EIS, the 2005 WEMO FEIS, and the 2014 DRECP EIS, each of which are incorporated by reference (40 CFR 1502.21). The following subsections summarize how resource considerations, land uses, and social and economic conditions have contributed to the development of the transportation network and travel management policies in the area.

In general, the existing route network, most of which was in place before 1980, was primarily developed in response to land use needs and social and economic factors. It was only after FLPMA, the Wilderness Act, NEPA, the Endangered Species Act, and other resource-focused legislation and policies were implemented that resource considerations became a factor in development of the transportation network and travel management policies. In recent years, further development of the transportation network and travel management policies has represented an attempt to strike a balance between protecting resources and serving land use and social needs.

Resources

The CDCA Plan has undergone three regional amendments to protect biological resources, including the NEMO amendment of 2002, NECO amendment of 2002, and the WEMO Plan amendment of 2006. Specifically, the 2006 WEMO Plan was a cooperative, interagency effort to provide a regional biological strategy to conserve plant and animal species and their habitats and to prevent future listings, and an efficient, equitable, and cost-effective process for complying with threatened and endangered species laws. These Plan amendments, and the 2016 DRECP LUPA, have been used as mechanisms to establish DT ACECs, ACECs, NCLs and other Special Designation areas to protect sensitive biological, cultural, and other resources. Each of these amendments has evaluated current and future land uses, including Off-Highway Vehicle (OHV), other recreational uses, and livestock grazing for their potential to impact those resources, and placed constraints on those uses in order to protect resources.

BLM has implemented several efforts since 1985 to analyze and update the transportation network within a specific region within WEMO, or across WEMO as a whole. These included the 1985-87 Off-Road Vehicle Designations, the ACEC Plan designations, the Ord Mountain Pilot Off-Road Vehicle Designations, the WEMO 2003 Western Mojave Desert Off-Road Designation Project, and the 2006 WEMO Plan itself. The Ord Mountain Pilot Project and 2003 Off-Road Designation Project were both analyzed in EAs which considered resource impacts associated with the selected route networks. Similarly, the 2006 WEMO Plan considered the existing network within the framework of the resource-protection goals of the Plan.

In addition to these regional-scale efforts, resource considerations associated with access are also considered on a route-specific basis when applications for proposed land uses are evaluated. In considering these applications, BLM is required by NEPA to evaluate impacts to sensitive resources, as well as alternatives which can avoid, reduce, or mitigate impacts.

Regional-scale efforts to address conflicts between livestock grazing and other resources have also been considered in allotment specific EAs prepared between 2006 through 2013. These EAs are required to fully process grazing permit and lease renewals. A rangeland health assessment was conducted on all active grazing allotments within the planning area to determine if fallback standards and guidelines were being achieved. If it was determined that an applicable fallback standard or guideline was not being achieved, BLM is required to develop management actions that would achieve the fallback standard or guideline or make positive progress in the achievement of an applicable fallback standard or guideline. This type of information was analyzed in those allotment specific EAs. BLM issued proposed and final grazing decisions (see 43 CFR 4160) that stipulated the terms and conditions for the management of livestock grazing on public land within the West Mojave Planning Area and elsewhere within the CDCA.

Land Uses

Land uses in the WEMO Planning Area which require transportation access include grazing operations and access to range improvement, energy, mining, and communications facilities. In general, the effect of land use applications is to expand the transportation network by implementing new routes for access to and the use of specific sites. For land uses which occur in a limited area, such as solar energy plants or mines, the access need is usually limited to a single new route to allow use and connect the proposed facility to a local highway. Other proposed land uses, such as wind farms or communication sites, can involve a large number of individual sites

scattered over a large area, each site requiring its own access. Finally, several potential land uses, including transmission lines and pipelines, are linear in nature, and can require implementation of a single new route that is tens or hundreds of miles long. In general, the locations of the proposed facilities are driven by the availability of a resource at that location, such as a specific mineral deposit, topographic position, or solarity. As a result, the configuration of the resulting route network is partially driven by the locations of these resources, with limited options available to avoid specific resources.

For these land use projects, the project-specific NEPA analyses consider resource-specific impacts of the proposed site access as well as the facility itself. In fact, the CDCA Plan specifically designated utility corridors to accommodate linear projects in order to minimize proliferation and resource impacts, including impacts associated with their associated access routes. In cases where implementation of a new route cannot be avoided, these NEPA analyses consider alternative route locations or use limitations to avoid, reduce, or mitigate impacts.

Social and Economic Conditions

The route network in the WEMO Planning Area has also been developed in response to social and economic factors, including locations of population and employment centers, and the resulting need for recreational opportunities. The major factor in the development of the OHV use network in the region has been growth in both population and employment opportunities in the Victor Valley, Barstow, and Ridgecrest. Historically, the WEMO Planning Area has served as a transportation corridor for rail and highway access between the Los Angeles area, a major port and population center, and the remainder of the country. The crossing of the planning area by Interstate Highways I-15 and I-40 not only supports the interconnection between Los Angeles and the rest of the country, but has provided impetus for localized population growth and employment in communities adjacent to these highways.

As population has grown in these areas, the need for transportation access to recreational opportunities for these people has also grown. The access needs include routes to access specific recreational locations such as parks and camping and hiking areas, as well as routes to support OHV-focused activities.

Since the CDCA Plan was approved in 1980, the livestock industry in the California Desert has undergone major decline, especially in the last 10 years. Grazing operations on public land within the planning area are generally small family operations. As the permittee or lessee ages and is less able to run their grazing operation stocking rates typically decline. Unless a younger family member or partner is capable of maintain the grazing operation stocking rates decline, maintenance of range improvements suffers and usually no new range improvements are developed. This trend has been especially hard on the sheep industry. Very few sons or daughters follow in their parents' footsteps and continue the family sheep operations. Overall, the AUMs that BLM authorizes have decreased from its peak of nearly 40,000 AUMs in 1992 to 13,039 AUMs in 2016 for all classes of livestock.

The cattle and sheep markets have also experienced substantial fluctuations over the past 30 years. These markets have a great deal of influence on family incomes and fluctuations in stocking rates. The overall costs of running a grazing operation has nearly doubled over the past 30 years while market returns have been fairly static along with BLM grazing fees.

3.2 Air Quality

This section describes air resources in the WEMO Planning Area. Motor vehicles are a leading source of air pollution and greenhouse gases (GHGs) globally. Motor vehicles are a leading source of air pollution in California, and motor vehicles driving on the BLM route network in the WEMO Planning Area are the major focus of this overview. Other mobile sources of air pollution in the WEMO Planning Area include operational and construction equipment, trains, and aircraft. Stationary sources such as gasoline stations, the Coso Geothermal Power Plant, dry cleaners, and other commercial and industrial facilities also contribute to air pollution. Natural sources of air pollutants such as hot springs are also found in the WEMO Planning Area.

3.2.1 Baseline Emissions Budgets for the WEMO Planning Area and for BLM OHV Recreation

Using the format from ARB emissions modeling for six CAA criteria pollutants (excluding lead): volatile organic compounds (VOCs), carbon monoxide (CO), oxides of nitrogen (NO_x), oxides of sulfur (SO_x) respirable particulate matter (PM₁₀), fine respirable particulate matter (PM_{2.5}), the BLM worked with the Aspen Environmental and staff of the Mojave Desert AQMD to develop an emissions budget for the entire WEMO Planning Area. Details of the modeling and assumptions used to create Tables 3.2-1, 3.2-2, and 3.2-3 appear in Appendix E-2. The three tables estimate in succession the total emissions for the entire WEMO Planning Area; for all automotive sources using just the current BLM OHV route system; and for all automotive sources on all BLM lands in the WEMO Planning Area. Table 3.2-3, for all automotive sources on BLM lands, does not estimate vehicle emissions from the BLM OHV Open Riding Areas.

Table 3.2-1. Total Emissions Budget for Six Criteria Air Pollutants in the WEMO Planning Area

Emissions Source Type	Annual Emissions (tons per year)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
Stationary	6,009	7,011	16,588	2,567	12,588	4,210
On-Road Mobile	3,877	30,767	12,248	76	917	418
Off-Road Recreational Vehicles	154	601	11	0	2	1
Other Mobile	2,759	15,287	7,409	145	1,101	1,065
Area - Unpaved Road Dust	--	--	--	--	15,600	1,557
Area - Windblown Unpaved Road Dust	--	--	--	--	20,692	2,837
Other Area Sources	4,395	6,681	595	31	13,166	3,066
All WEMO Sources Totals	17,194	60,346	36,851	2,819	64,066	13,156

Source: Aspen Environmental Group 2018 appended tables

Table 3.2-2. Automotive Emissions Budget for all of the Current BLM WEMO Route Network

Emissions Source Type	Annual Emissions (tons per year)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
BLM On-Road Mobile	38	270	14	0	0	0
BLM Off-Road Mobile	77	319	6	0	1	1
BLM Unpaved Road Dust	--	--	--	--	5,641	563
BLM Windblown Unpaved Road Dust	--	--	--	--	8,740	1,156
BLM Route Network WEMO Source Totals	116	589	20	0	14,382	1,720

Source: Aspen Environmental Group 2018 appended tables (See Appendix E-2).

Table 3.2-3. Automotive Emissions Budget for all of the Current BLM WEMO Route Network plus BLM WEMO Open OHV Riding Areas

Emissions Source Type	Annual Emissions (tons per year)					
	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
BLM On-Road Mobile	71	505	28	0	1	0
BLM Off-Road Mobile	170	701	13	0	2	2
BLM Unpaved Road Dust	--	--	--	--	13,340	1,331
BLM Windblown Unpaved Road Dust	--	--	--	--	8,740	1,156
BLM All WEMO Source Totals	241	1,206	40	0	22,083	2,489

Source: Aspen Environmental Group 2018 appended tables

Note: Fugitive windblown dust was not estimated for BLM WEMO Open OHV Riding Areas. Therefore, the estimate for BLM emissions from all sources is conservative. Refer to page 8 of the Aspen Environmental Group (2018) report (See Appendix E-2).

Twenty-two percent of WEMO PM₁₀ emissions and 13 percent of WEMO PM_{2.5} emissions source totals come from the BLM WEMO 15,235 mile route network. The WEMO-wide estimate of emissions, however, does not account for PM₁₀ emissions from military installations within the planning area boundary for which CEPAM modeling by ARB did not have information. Therefore, the total percentages of BLM PM₁₀ emissions regionally are likely lower than modeled here.

In comparison, BLM vehicle emissions that are precursors to ozone formation are minor contributors to the total budget for ozone precursors in the WEMO Planning Area. Sulfur oxide (SO_x) gas emissions from vehicles on BLM lands are very small as well compared to regional totals.

3.2.2 Nonattainment Status for NAAQS and CAAQS in the WEMO Planning Area

Areas classified as nonattainment by the EPA for a NAAQS must prepare and implement a state implementation Plan (SIP) that identifies and quantifies sources of pollutant emissions and

presents a comprehensive strategy to control and reduce locally generated emissions. Attainment status by air basin and air district is provided in Table 3.2-4. Demonstration of the general conformity for the nonattainment area is required for analysis of a federal action in that maintenance area.

Air quality degradation and NAAQS exceedances in the planning area have been episodic in nature. High PM₁₀ concentrations that exceeded the NAAQS peaked in the early 1990s. In recent years, careful monitoring has led to reclassification requests to the EPA for most of the region. Implementation of dust control rules and controls on a number of critical sources have led to reductions in PM₁₀ concentrations. The number of violations of the NAAQS for ozone has declined as well. Rules establishing controls for ozone precursor emissions have been implemented, but transport of ozone and ozone-precursors from the South Coast Air Basin and the San Joaquin Valley Air Basin continually impacts the WEMO Planning Area.

3.2.3 Maintenance Status for NAAQS and CAAQS in the WEMO Planning Area

Areas classified as maintenance by the EPA for a NAAQS have previously been classified as nonattainment areas for that NAAQS. When a nonattainment area achieves the NAAQS, the EPA designates the area as a “maintenance” area because the corresponding SIP also ensures that the ambient air concentration of the particular criteria pollutant does not exceed the NAAQS again. Demonstration of the general conformity for the maintenance area is required for analysis of a federal action in that maintenance area.

Table 3.2-4. Attainment Status by Air Basin and Air District

Air Basin	Air Quality District	Pollutant	Planning Area Name	Federal Designation	State Designation
Great Basin Valleys Air Basin	GBUAPCD	PM ₁₀ (federal)	Owens Valley	Severe Nonattainment	N/A
		PM ₁₀ (federal)	Coso Junction	Attainment/Maintenance	N/A
		PM ₁₀ (state)	GBVAB	N/A	Nonattainment
		Ozone (state)	Inyo County and Mono County	N/A	Nonattainment
		All others	GBVAB	Unclassified/Attainment	Unclassified/Attainment
Mojave Desert Air Basin	EKAPCD	PM ₁₀ (federal)	Indian Wells Valley	Attainment/Maintenance	N/A
		PM ₁₀ (federal)	Kern River/Cummings Valley	Serious Nonattainment	N/A
		PM ₁₀ (state)	MDAB	N/A	Nonattainment
		Ozone (federal)	Eastern Kern County*	Nonattainment	N/A

Table 3.2-4. Attainment Status by Air Basin and Air District

Air Basin	Air Quality District	Pollutant	Planning Area Name	Federal Designation	State Designation	
		Ozone (state)	MDAB	N/A	Nonattainment	
		All others	Eastern Kern County	Unclassified/Attainment	Unclassified/Attainment	
	MDAQMD	PM ₁₀ (federal)	Searles Valley	Moderate Nonattainment	N/A	
		PM ₁₀ (federal)	Mojave Desert	Moderate Nonattainment	N/A	
		Ozone (federal)	Mojave Desert modified	Nonattainment	N/A	
		Ozone (state)	MDAB	N/A	Nonattainment	
		PM _{2.5} (state)	Mojave Desert modified	N/A	Nonattainment	
		Hydrogen Sulfide (state)	Searles Valley	N/A	Nonattainment	
		PM ₁₀ (state)	MDAB	N/A	Nonattainment	
		All others	MDAQMD Wide	Unclassified/Attainment	Unclassified/Attainment	
		AVAQMD	Ozone (federal)	Mojave Desert modified	Nonattainment	N/A
	PM ₁₀ (state)		MDAB	N/A	Nonattainment	
	Ozone (state)		MDAB	N/A	Nonattainment	
	All Others		MDAB	Unclassified/Attainment	Attainment	
	Salton Sea Air Basin	SCAQMD	PM ₁₀ (federal)	SSAB	Moderate Nonattainment	N/A
			Ozone (federal)	SSAB	Nonattainment	N/A
PM ₁₀ (state)			SSAB	N/A	Nonattainment	
Ozone (state)			SSAB	N/A	Nonattainment	
PM _{2.5} (federal)			SSAB	Moderate Nonattainment	N/A	
PM _{2.5} (state)			SSAB	N/A	Nonattainment	
NO ₂ (state)			SSAB	N/A	Nonattainment	

Table 3.2-4. Attainment Status by Air Basin and Air District

Air Basin	Air Quality District	Pollutant	Planning Area Name	Federal Designation	State Designation
		All others	SSAB	Unclassified/ Attainment	Attainment

MDAB = Mojave Desert Air Basin, SSAB = Salton Sea Air Basin

N/A = The planning areas for the Federal and State standards are not directly comparable. Therefore, the attainment status for the Federal and State standards are listed in separate rows in this table.

Source: Clean Air Act Section 163 as amended through P.L. 114-94, enacted December 04, 2015

Table 3.2-4 displays the status of the attainment for each air quality planning area in the WEMO Planning Area. PM₁₀ and ozone are the principal criteria pollutants of concern for the BLM and the ARB in the WEMO Planning Area.

With respect to the federal PM₁₀ standard, the WEMO Planning Area now includes areas that are designated as in nonattainment, attainment, and unclassified/attainment. The portions of the planning area in the MDAQMD and SCAQMD areas are designated as moderate nonattainment, while Owens Valley in the GBUAPCD area has been designated as being in severe nonattainment. Of these nonattainment areas, EPA has classified three areas within the WEMO Planning Area as formal PM₁₀ planning areas. The three current federal planning areas are: the Owens Valley PM₁₀ Planning Area, the Trona PM₁₀ Planning Area, and the San Bernardino County PM₁₀ Area. The Owens Valley planning area is one of five serious federal nonattainment PM₁₀ planning areas in the nation.

The original Searles Valley PM₁₀ Planning Area abutted the Owens Valley PM₁₀ Planning Area on the north and included Rose Valley, Indian Wells Valley, and Searles Valley. In 2002 the EPA split the original federal nonattainment planning area into three separate nonattainment areas based on county lines. These three new federal nonattainment areas are: the Coso Junction, the Indian Wells Valley, and the Trona PM₁₀ nonattainment areas. Of these, Coso Junction in the GBUAPCD was redesignated as attainment/maintenance in 2010, and Indian Wells Valley in the EKAPCD was redesignated as attainment/maintenance in 2003.

PM₁₀ emission sources identified by the SIP include construction/demolition, public unpaved roads, paved roads, mobile sources, unplanned fires, public disturbed areas, fuel combustion (cogeneration boiler and stacks at Trona), fugitive dust from mining activities, primarily on Searles lakebed, industrial roads, agricultural fields, and military activities. The Trona PM₁₀ SIP targets BLM emissions for a 20 percent reduction. The East Kern APCD and Mojave Desert AQMD have developed rules to implement their respective SIP obligations.

The EPA classified the San Bernardino County desert area as a PM₁₀ nonattainment area on January 20, 1994. The Mojave Desert AQMD prepared its Final Mojave Desert Planning Area Federal Particulate Matter PM₁₀ Plan in 1995 and submitted it to the state for inclusion into the state SIP. Emission sources identified in the plan included construction/demolition, city and county unpaved roads, travel and wind erosion, paved road entrainment, city and county disturbed areas, and industrial activities. Four BLM OHV open riding areas (Stoddard Valley, Johnson Valley,

Razor, and El Mirage) are within the nonattainment area portion inside the WEMO Planning Area. The Plan called for the BLM to draft a Dust Control Plan for activities within the MDAQMD PM₁₀ nonattainment area. The BLM Barstow Field Office finalized a Dust Control Plan in 1997, in compliance with MDAQMD's Rule 403.2.

The remainder of the planning area (AVAQMD, the area of EKAPCD outside of Coso Junction, and the area of GBUAPCD outside of Owens Valley and Indian Wells Valley) is designated as unclassified/attainment. The Antelope Valley Area has recorded levels above the national threshold, but has not been classified as nonattainment. The AVAQMD has been working directly with EPA to successfully reduce the PM₁₀ concentration levels and avoid having the Antelope Valley Planning Area designated as a federal nonattainment area. Part of this effort is through the adoption and implementation of rules to control fugitive dust, which constituted a majority of the total PM₁₀ emissions.

Overall, as shown in Figure 3.2-1, ambient PM₁₀ values in the planning area decreased steadily between 1986 and 1996 and have been steady since 1996. Key trends for air quality in the WEMO Planning Area include:

- Significant progress in reducing PM₁₀ emissions in the WEMO area just south of Owens Lake.
- Evidence to justify reclassification of the East Kern PM₁₀ Serious Nonattainment Area to maintenance status as emissions are well below the NAAQS for PM₁₀.
- PM₁₀ concentrations in the WEMO Planning Area fluctuate annually but interannual variations are generally within a narrow range since 1996.
- Steady reduction in the Barstow region of the number of days per year that exceed the 2015 8-hour ozone standard.
- Joshua Tree National Park, a Class I air quality area, continues to register high ozone concentrations, with more days of exceedance than for the City of Barstow by comparison.

3.2.4 Federal General Conformity Rule

The Federal General Conformity Rule (40 CFR 51 Subpart W, 40 CFR Part 93 Subpart B) requires that federal agencies ensure that their actions do not disrupt progress toward achievement of air quality standards, as set forth in the applicable SIP for a particular criteria pollutant. General Conformity regulations apply only to direct and/or indirect emissions caused by federal agency actions that occur in areas designated as nonattainment or maintenance areas with respect to the NAAQS for a criteria pollutant. If the applicable emissions exceed *de minimis* thresholds outlined in the Federal General Conformity Rule, then the federal agency prepares a formal General Conformity Determination for public comment. The General Conformity Determination outlines the methodology by which proposed emissions stemming from the federal action would conform to the SIP, such as:

- Emissions that are specifically identified and accounted for in the SIP; or
- Emissions that are fully offset or employ a similarly enforceable measure that creates emissions reductions so that there is no net increase in emissions.

Conformity Determination

The classification of an area as a federal nonattainment area brings an additional requirement for federal agencies. Section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq.), and regulations under 40 CFR, part 93, subpart W, states that “no department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan.” This means that under the CAA 176(c) and 40 CFR, part 93, subpart W, (general conformity rules), federal agencies must make a determination that proposed actions in federal nonattainment areas conform to the applicable State Implementation Plan (SIP) before the action is taken. Appendix E discusses and lists the thresholds (*de minimis* amounts) of additional criteria pollutants that a federal project may not exceed in a designated nonattainment area or maintenance area.

3.2.5 Sensitive Receptors and Residences

The EPA defines sensitive receptors as populations including, but are not limited to, at hospitals, schools, daycare facilities, elderly housing and convalescent facilities. These places are areas where the occupants are more susceptible to the adverse effects of exposure to air pollutants and toxic chemicals. Public land managers take extra care when planning actions dealing with contaminants and pollutants in close proximity to areas recognized as sensitive receptors.

For purposes of impact analysis among route network alternatives, the BLM compared the proximity of the inventory of off-road routes to sensitive receptors. Sensitive receptors were defined as schools and health facilities. The number of sensitive receptors within the WEMO Planning Area and their proximity to the current BLM OHV route network is presented in Table 3.2-5.

Table 3.2-5. Sensitive Receptors in WEMO Planning Area

Type of Sensitive Receptor	Within ¼ miles of a Route	Within 1 mile of a Route
Public School	7	37
Private School	0	5
Colleges	1	4
Health Facilities	1	7

In the impact analysis in Chapter 4, BLM identified the mileage of OHV Open and OHV Limited routes within various distances of these receptors for each alternative. The distances evaluated were 0.25 and 1.0 miles from the receptors.

To estimate the impacts to residences, BLM used the “developed area” layer of the vegetation database as a surrogate for areas where residences exist. In the analysis in Chapter 4, mileages of routes within 300 feet of the developed areas were used to assess the potential for air quality impacts to residents.

3.2.6 Greenhouse Gases

3.2.6.1 Introduction

This section covers diverse aspects of the status, changes, and trends regarding climate relevant to the WEMO Planning Area and the NEPA actions of this FSEIS. First, a discussion of the current efforts by the federal government and by the State of California to avoid adverse impacts stemming from climate conditions frames consideration of the nexus of climate to the FSEIS actions. Subsequent subsections present climate conditions in the recent past and a review of results from climate scenario modeling for coming decades in the planning area. The section concludes with a brief summary of some of the likely impacts for OHV recreation and the OHV travel network in the planning area. This format focuses on scientifically peer-reviewed information about climate to support FSEIS analyses. Other resource sections in Chapter 3, in particular Air Quality, Geology, Soils and Water, and Biological Resources, also touch on climate.

3.2.6.2 Implications of Greenhouse Gases for Off-Highway Vehicular Travel and Management of Off-Highway Transportation Networks

If extreme weather events actually increase in severity and frequency in the future, the quality of OHV recreation experiences may become impacted. Specifically, overall hotter summers and more intense heat waves may shorten the feasible recreation season for some OHV riders. If storms become more severe and frequent (USGCRP, 2009), the OHV travel network might become impaired more often. Projected increases in greenhouse gases could concentrate rainfall into fewer more intense storms. Heavy rains may result in flooding, which could disrupt OHV travel and circulation within off-highway trail networks. Soil erosion or liquefaction and debris flows during strong storms may clog culverts (EPA) and undermine integrity of trail engineering. Greater erosion resulting from higher-volume of overland water flows may make OHV trails, especially those with poor placement and design, more susceptible to “blowouts.” Damage from such storms may require greater investments for more frequent maintenance, repair, and reengineering to maintain the transportation network.

OHV riders on BLM lands might experience indirect impacts from increasing climatic water deficit (CWD) originating from offsite sources. Increasing CWD and drought may result in greater shrub or tree mortality from higher-elevation forests on the west and south sides of the WEMO planning region, contributing, at least in the short term, to abnormally high fuel loads. If monsoonal thunderstorms increase, natural lightning ignitions may also increase. People’s exposure to more frequent smoke from wildland fire might be expected especially at the interface where the BLM OHV network is downwind from forest fires originating in the Sierra Nevada and San Bernardino Mountains. The personal comfort and experience of recreational riding in smoke-filled air may deteriorate more often.

3.3 Geology, Soils, and Water

3.3.1 Geology and Soils

The following sections describe distinctive features of desert soils that relate to recreational use of vehicles in the Mojave Desert.

Dunes, Sand Sheets, and Sand Ramps

Sand-dominated soils in the WEMO Planning Area are less numerous and less extensive than elsewhere in the Mojave Desert, and the share of dune, sand sheets, and sand ramps managed by the BLM in the WEMO Planning Area, including for OHV recreation, is small. Dunes are present in the Olancha and Razor OHV recreation areas.

Wildlife species endemic to sand environments in the planning area are particularly vulnerable to human disturbances. For example, the Mojave Fringe-toed Lizard (*Uma notata*) has disappeared from the westernmost parts of its range in Los Angeles County. Populations in the sandy environments along the Mojave River east of Barstow now represent the farthest west sites for these lizards.

Biological Soil Crusts

Organisms comprising a biological soil crust (BSC) determine many soil physical and chemical characteristics. Microorganisms (lichens, algae, cyanobacteria, microfungi), and non-vascular plants (mosses, lichens) grow on or just below the soil surface, as a commingled assemblage. Component species in the assemblage reduce wind and water erosion of soil, fix atmospheric nitrogen, and contribute to formation and storage of both soil organic and inorganic matter. Secondly, desert soils facilitate carbon sequestration in plant aboveground biomass and root systems, and biological soil crusts, but in inorganic form as well. Where available water for plant growth is scarce and plants are more widely spaced, BSCs often supplant vascular plants in interspaces as agents for stability of soil surfaces and for soil fertility.

BSCs in the Mojave Desert are most common on moderately young to intermediately aged soil surfaces (20 to 7000 years old), with development most extensive on soil surfaces between 500 and 1000 years old. In general, BSCs avoid the most recently developed and the most ancient desert surfaces (e.g., desert pavements) (Bowker et al. 2016). In Joshua Tree National Park, Pietrasiak et al. (2011) found that BSCs (cyanolichens) flourish most extensively on surfaces with coarse sediment (grus) derived from granite. Contrastingly, Belnap et al. (2014) found BSCs (cyanolichens and mosses) in the eastern Mojave Desert to be more common on finer-textured limestone- and quartzite-based sediments. At this time, insufficient information about the distribution of BSCs in the West Mojave Desert makes mapping the areas of high BSC frequency and productivity in the WEMO Planning Area infeasible at this time.

A recent study from the Mojave Desert in Nevada (Chiquoine et al. 2016) has shown that restoring cyanobacterial inoculum improves BSC production of chlorophyll and soil nitrogen rapidly in disturbed soils. Facilitating recovery of BSCs after disturbance and further avoiding disturbances, such as vehicular travel over productive BSC areas, will contribute to desert soil productivity and surface stability. Soil scientists and ecologists are presently developing efficient methods to propagate BSCs for reintroduction to disturbed sites on public lands in the Mojave Desert.

Sensitive Soils

The distributions of sensitive soils on BLM lands in the WEMO Planning Area depicted here are presently incomplete. As the BLM continues to collaborate with the USDA Natural Resource Conservation Service on surveying and mapping West Mojave Desert soils, missing data will

become available. In the following discussions and accompanying maps, information displayed is often partial.

Hydric Soils

Hydric soils are significant in the Mojave Desert because they are the soils of wetlands and support aquatic and riparian habitats, including alkaline-dependent plant alliances. The National Technical Committee for Hydric Soils (NTCHS) defines hydric soils as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Under natural conditions, these soils support the growth and reproduction of hydrophytic (“water-loving”) vegetation. In the arid Mojave Desert, these soils are rare and local, associated with permanently or seasonally flowing streams, marshes, and springs. Hydric soils are extensive along the Mojave River and on the playas of many lakebeds such as Harper, Koehn, and Lucerne lakes.

Alkaline Soils

Alkaline soils have pH values greater than 7 because of their high content of base elements, especially sodium, potassium, calcium, and magnesium. The range of soil chemistry in alkaline soils gives rise to diverse ecological conditions in the West Mojave Desert that host uncommon herbaceous plant alliances with limited ranges, e.g., alkali sacaton grassland (*Sporobolus airoides*) herbaceous alliance and yerba mansa (*Anemopsis californica*) herbaceous meadow alliance. Many alkali soils are also hydric soils.

Shallow Soils

Shallow desert soils may require special management to maintain them in the landscape. Wind and water can erode these soils more quickly down to the continuous layer of rock parent material (bedrock) beneath a soil. Additional mechanically-induced erosion from motor vehicles can accelerate the loss of vegetation and soil from these sites, additionally limiting the capacity of recovery of soil fertility and plant productivity. Shallow soils on steep, rocky slopes are particularly vulnerable to mass wasting.

Especially in desert soils with high calcium carbonate content, the impact on effective rooting depth can constrain plant root growth when the carbonate first dissolves and mobilizes downward in the soil column and subsequently precipitates back into the soil in solid form. The precipitated carbonate frequently forms a hard cement-like pan, which if unfractured seals the soil profile below from the further movement of water and solutes downward. Although root development of plants may become stunted, the cemented carbonate pan can keep water in the upper soil horizons longer for plant use. Puncturing the carbonate pan, however, can rapidly drain the soil above the pan of its water, introducing soil drought than can lead to vegetation dieback. Shallow carbonate-rich soils are especially important habitat for several federally-listed carbonate endemic plant species found in the WEMO Planning Area.

Soil Properties Affected by Motor Vehicles

Altered soil properties can lead to a variety of cascading effects on other resources, including rate of surface water flows, water quality, air quality, biological resources, and human health.

Activities, including motorized vehicle use or livestock grazing have the potential to impact resources, including the ecological and carbon sequestration functions that soils support.

Soil Compaction

Compaction of soils from motor vehicles can reduce soil moisture available to vegetation, increase rates of precipitation runoff, and increase erosion (Ouren et al. 2007). Soil compaction can occur due to pressure exerted by animals, pedestrians, and/or vehicles. Areas frequently susceptible to soil compaction are motor vehicle routes, developed and undeveloped camping areas, sites for livestock watering, and mine operation sites. The degree of soil compaction from vehicular traffic depends in part on soil characteristics such as soil particle size, particle size distribution, organic matter content, soil moisture, and soil structure. Uniform coarse-grained soils tend to be less susceptible to compaction than fine-grained or poorly-sorted soils in soil horizons or soils that consist of a diverse range of particle types. In the latter case, smaller particles become wedged among larger particles with the application of compaction force.

Compaction reduces the water infiltration and storage capacity of desert soils at the ground surface. Residence time is the average time that rainwater remains at the site where it falls. By infiltrating into a soil and becoming part of the groundwater, water resides on site longer. With compaction, less water infiltrates and more water flows offsite, thus shortening the average amount of time that water remains near where it strikes the ground. A longer residence time for water benefits soil organisms and vegetation at a site. With a shorter residence time for water, the soil has less water available for seed germination, plant growth and more susceptible to overland flows and water erosion.

Soil Erosion

Impacts to the ecological and carbon sequestration functions of soils can result if mechanical displacement, water erosion, or wind erosion displace soils. Reduced infiltration from soil compaction leads to increased overland water flow volume during infrequent but often intense desert rainstorms. Added surface water flow during and after a storm more easily overpowers the forces of cohesion and friction holding surface soil particles together. More soil particles downslope of compacted soils are then eroded and transported overland as a result. The sediment load increases in the water flow cumulatively downslope and downstream, with potential adverse impacts to water quality. Overland water flow moves to washes and streams as compacted areas upslope shed a greater amount of runoff water than they would if left undisturbed. More water volume also accelerates gully erosion in rills and creeks at “knick” points in the landscape where the slope suddenly increases. The added sediment being transported may cause water quality to decline. More runoff in the water system during rainfall lowers the threshold amount of precipitation needed for flooding to start. At a watershed scale, one cumulative impact of soil compaction from widespread vehicular traffic and the resulting shortened residence time is that flooding becomes more frequent. Soils that are particularly prone to water erosion occur in the eastern Sierra Nevada canyons and at the northeast side of the San Bernardino Mountains.

Erosion potential is magnified when percent slope (steepness) of a site is higher or when slopes are longer. In the planning area, approximately 2.3 million acres of the overall 9.4 million acres (approximately 24%) have slopes greater than ten percent. Figure 3.3-1 displays areas of high water erosion potential based on slope. Most of the WEMO Planning Area has not been soil

surveyed so information on general soil susceptibility to wind and water erosion is based on the available SSURGO/STATSGO2 data bases for the WEMO Planning Area. A map of the Wind Erodibility Groups across the WEMO Planning Area is presented in Figure 3.3-2. Wind erodibility is displayed in units of tons per acre per year, the dark red representing 310 t/a/y. Figure 3.3-3 shows the distribution of Hydrologic Soil Groups, which classify soils according to their potential for precipitation infiltration or runoff. Soils that have little potential for infiltration and promote runoff are classified as Group D (dark green), and are more prone to erosion by surface water. Soils that have a high infiltration rate are classified as Group A (dark red), and are less prone to surface water erosion. In evaluating potential soil erosion during the route designation process, these data were supplemented by information from route-specific field observations.

Most desert soils are much more susceptible to wind erosion after surface disturbance than in an undisturbed condition. Wind erosion occurs whenever bare, loose, dry soil is exposed to wind of sufficient speed to cause soil particles to move. This process accelerates when stabilizing vegetation or biological soil crusts have been lost. 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 otherwise 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. During a dust storm, the bulk of eroding material from soils moves only a foot or two above the soil surface as sediments move downwind. Wind speeds as low as 13 or 15 mph above the soil surface can launch medium-sized particles from soils prone to wind erosion. These particles become detached and jump (“saltate”) briefly into the wind stream but then fall back to the ground by force of gravity. Return from saltation causes particles to impact other particles of differing sizes and set them into motion. Fifty to 80 percent of total soil movement may result from these particulate collisions. Wind erosion rates for soils may increase as soil properties (e.g., soil bulk density) or as vegetative cover decreases. Erosion by wind has several potential impacts. First, like water erosion, the process removes material that is necessary to support vegetation. Wind erosion is also a major source of PM10 air emissions in the region, affecting both local and regional air quality. Wind erosion can also cause dust deposition on vegetation, affecting its growth and availability as forage for wildlife.

Mine and Mining Claim Access

Most of the Limited Access areas within the WEMO Planning Area are available for mining and mineral exploration. Providing access to these resource values is a key component of the transportation network. Access for mineral exploration and development depends on the scope of activities and the type of minerals being mined.

The BLM has authority to dispose of fluid minerals (for example, oil, gas), geothermal resources, and some solid minerals (for example, phosphate and salt deposits that contain sodium or potassium) by lease under the Mineral Leasing Act of 1920, Geothermal Steam Act of 1970, and other leasing authorities. The BLM’s mineral leasing regulations are at 43 CFR Parts 3100 (oil and gas), 3150 (geophysical exploration), Part 3200 (geothermal leasing), and Part 3500 (solid leasable minerals other than oil shale and coal). In addition, the BLM has authority to dispose of mineral materials (for example, sand, gravel, clay, and stone) by permit or sale under the Materials Act of 1947. The BLM’s mineral materials regulations are at 43 CFR Part 3600. These mineral leasing and sales authorities give the BLM the discretion to allow exploration and development for

these minerals if it is in the public interest; therefore, providing access and use to leasable and saleable minerals is also discretionary. If BLM determines that development of such minerals should be allowed on lands within the WEMO Planning Area and exploration or mining is approved, the BLM determines the appropriate manner and specific location of access routes, as described below.

The BLM also has authority to dispose of metallic and some industrial minerals (for example, gold, silver, copper, molybdenum, and uncommon varieties of mineral materials) under the Mining Law of 1872. The Mining Law and the BLM's implementing regulations under 43 CFR Part 3800 authorize citizens to stake or "locate" mining claims, and develop the minerals without payment to the federal government. Unlike the leasing and sales authorities, the BLM's disposal authority under the Mining Law is not discretionary; consequently, access for the purpose of developing minerals subject to the Mining Law is also not discretionary. Operators are, however, required to obtain authorization for any surface disturbance that causes more than negligible surface disturbance. For all extractive mining operations, as well as exploration that disturbs more than 5 acres, involve bulk sampling of 1,000 tons or more of presumed ore for testing, and for operations greater than casual use in special status areas as listed at 3809.11(c), which would generally specify the appropriate manner and specific location of access routes. There are currently 5 active mines and over 3000 mining claims and sites within the WEMO Planning Area.

In many cases, technical considerations govern the location of the necessary access route, and the use impacts associated with access are considered by BLM, along with the rest of the facility and operation, in determining whether to authorize the facility. As with other routes, BLM may generally apply minimization requirements, as necessary to avoid or reduce impacts, and whenever appropriate, the designated route network is used for OHVs. Frequently additional access is required to reach the sites of minerals. Less frequently, restrictions are placed on the use of these access routes for safety and/or security reasons. Generally, mining operations are of a small scale and do not affect the continuity of the overall network. However, in some instances, such as the major salt mining operations on Searles Dry Lake, mining operations do provide constraints on through-area access by other users. In addition, some mines outside of the planning area may require use of the planning area's transportation network for access. In addition, where no mining authorization from BLM is required, such as for casual use under the Mining Law that causes no or negligible surface disturbance, motorized access is allowed provided the use is consistent with the regulations governing such uses at 43 CFR 8340 for off-road vehicle use designations contained in BLM land-use plans.

3.3.2 Water Resources

Both surface water and groundwater resources are scarce and critically important in the arid WEMO Planning Area. Past availability of a reliable supply of good-quality water has determined the pattern of agricultural, urban, and industrial development in the WEMO region. Many of the State or federally listed or BLM sensitive species, discussed elsewhere in this document, depend on the presence of water either directly or indirectly for their habitat. The scarcity of water resources indicates that there are limited locations where the route network intersects, and has the potential to affect, water resources, but also that these effects may substantially impact water availability or sensitive biological resources at those locations. A description of the surface water and groundwater resources in the planning area is provided in Appendix E. The following

subsections focus on the presence of riparian areas and the primary surface water drainage in the planning area.

Riparian Areas and Springs

Aquatic wetland and riparian habitat occurs within the WEMO Planning Area. The primary locations of the riparian areas are along the Mojave River; however, riparian areas occur in other dispersed locations throughout the planning area. Creeks and springs primarily occur in higher elevation mountainous areas. Most creeks and some larger springs and spring complexes in the region support an area of riparian vegetation near the water source and in a linear zone leading downstream from the water source. The extent of these areas is usually limited, as evaporation and infiltration of the water removes it from the surface.

In 2015, BLM contracted with Andy Zaddon & Associates to collect basic water quality components like water temperature, pH and TDS at seeps, springs wetlands and creeks in both Barstow and Ridgecrest. In addition, the data collectors often did a PFC assessment. The PFC assessments conducted in 2015 and 2016 were conducted at the peak of a prolonged drought cycle. Often their findings differ from PFC assessment conducted at the same source years earlier and often rated the source from PFC to Functioning-at-Risk with the primary cause of the downgrade attributed to prolonged drought conditions. The 2015 and 2016 PFC assessment conducted by Zaddon may not reflect the “true” conditions of that source but rather the cumulative, deleterious effect on riparian vegetation’s vigor and ability to reproduce because of a prolonged drought on riparian health. These PFC assessments should not be ignored but may need to be considered skewed based primarily on a natural phenomenon, the prolonged drought conditions. The results of these assessments are presented in Appendix E.

In addition to PFC Assessments, BLM has completed a comprehensive GIS analysis of all springs, as identified on the National Hydrography Dataset (NHD). This compilation included a review of more than 3.1 million acres, and identified 183 springs on BLM public lands. The assessment identified a total of 152 route features that intersected within a 100-meter buffer of these areas. BLM has also awarded a contract to the U.S. Fish and Wildlife Service (USFWS) to complete riparian area mapping of 90 quadrangles at a scale of 1:24,000 within the Barstow and Ridgecrest Field Office areas. This study, not completed at this time, will be used by BLM to further evaluate the ongoing impact of OHVs on riparian areas. Currently, two sites, Burns Spring and the SV2630 riparian area are being directly impacted by the existing WEMO route system (linear features).

In the impact analysis in Chapter 4, BLM evaluated the mileage of routes in close proximity to riparian areas and springs as an indicator of potential impacts from OHVs. To support the analysis, BLM developed a GIS-based inventory of springs and riparian areas throughout the planning area. A total of 436 springs are found in the planning area, as well as approximately 46,600 acres of riparian vegetation. Because 50 feet is the minimum corridor width for routes under any of the alternatives, all riparian areas within 50 feet of a route have the potential to be impacted by OHV use. Therefore, this distance was considered to be a measurement of how the designated route network might impact Proper Functioning Condition (PFC) of riparian areas throughout the planning area. The analysis also included quantification of the mileage of routes passing within 300 feet of all springs in the planning area. The 300 foot width is the current allowable stopping and parking distance outside of DT ACECs in the planning area, and therefore captures all potentially-impacted springs in the area.

Mojave River

The most prominent surface water body in the WEMO Planning Area is the Mojave River. The Mojave River originates near the southern boundary of the planning area. Major watersheds in the San Bernardino and San Gabriel Mountains contribute to the stream flow in the area. Sheep Creek originates in the San Gabriel Mountains. The West Fork of the Mojave River and Deep Creek originate in the San Bernardino Mountains and are the headwaters of the Mojave River. The watersheds within the WEMO Planning Area are shown in Figure 3.3-4.

The Mojave River flows along the eastern edge of the Cajon Fan. The Cajon Fan is at the southern edge of the Mojave Desert, in the southwestern part of the planning area. It is a broad surface of coalescing alluvial fans and terraces. The Cajon Fan formed from sediment eroded from the San Gabriel and San Bernardino Mountains. The fan extends from the base of the mountains for 10 to 15 miles to the Mojave River east of Hesperia to Adelanto and Mirage Lake. The center part of the upper edge of the Cajon Fan no longer joins the mountains. Tectonic activity in the surrounding area and subsequent erosion has truncated the upper edge to form the Inface Bluffs. Broad washes of the desert, such as the Oro Grande Wash, at one time drained large watersheds and are also truncated at the Inface Bluffs.

The floodplain of the Mojave River is 0.5 to 1 mile wide along most of the river. The soils on the floodplain are nearly level. In some places, such as at Upper Narrows where the river cuts through hard rock, there is no floodplain. East of Barstow, the floodplain and river terraces form the broad Mojave Valley.

The Mojave River has only three major tributaries within the desert – the Fremont Wash, Buckthorn Canyon, and Oro Grande Wash. These tributaries flow only after intense storms.

The water-bearing alluvial deposits of the Mojave River are a major source of groundwater in the planning area. Hard rock formations along the river divide the coarse river deposits into numerous subsurface basins. Water from the river recharges these basins.

The above ground flow of the Mojave River is intermittent in most places. Along most of its course, water flows above ground only after storms. Perennial flows occur near Victorville, in the vicinity of Camp Cady, and in Afton Canyon. In these places hard rock barriers force groundwater to the surface. Other basins in the area from which considerable groundwater is removed are in the area of Lucerne Valley, El Mirage, and Harper Lake.

The amount of water in the Mojave River varies greatly from year to year. As measured at the Forks, it has been more than 300,000 acre-feet one year and less than 10,000 acre-feet another.

The Mojave Water Agency was formed by an act of the State legislature in 1960 to find ways to supplement the natural water supply. The agency has contracts with the State of California that entitle the agency to purchase as much as 50,800 acre-feet of water per year from the California Water Project. These purchases are used to replenish the depleted and overdrafted river basin and associated shallow ground-water aquifers.

3.4 Biological Resources

This section is tiered to the 2005 WEMO Final EIS (BLM 2005) which provides the primary source of baseline information. Section 3.3 from Chapter 3 of the 2005 WEMO Final EIS (pp. 3-64 to 3-194) provides a general description of biological resources and the natural communities in

the WEMO Planning Area and is herein incorporated by reference. Applicable supplemental information to the planning area has been summarized in the following sections and additional data or updates have been added as needed. This supplemental information includes updated baseline and species information originally discussed in the 2005 WEMO Final EIS as well as discussions of species which were not previously considered in the 2005 WEMO Final EIS.

3.4.1 Wildlife Linkages

Within the WEMO Planning Area, linkages of habitats for wildlife migration are critical to the conservation of certain species. These species include the desert tortoise, desert bighorn sheep, and Mohave ground squirrel. The locations of these desert network linkages within the project area are found in Table 3.4-1 and Figure 3.4-1. Included in the planning area is a segment of the Pacific migratory bird flyway for many species of songbirds, shorebirds, and waterfowl; and includes stop-over riparian and wetland habitat. Riparian areas here provide important migratory stop-over habitat for the Federally-listed Least Bell’s Vireo and Southwest Willow Flycatcher. This flyway also provides excellent habitat for Golden Eagles and other raptors, with nearby cliffs for nesting and the valley floor for foraging.

Table 3.4-1. Acres of Desert Linkage Networks on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Sum of Acres
Afton Canyon	AC	10,707.9
Barstow	BA	5,258.9
Black Mountain	BM	41,289.2
Broadwell Lake	BL	0
Calico Mountains	CM	36,585.7
Coolgardie	CG	54,236.9
Cronese Lake	CL	26,617.47
Darwin	DA	0
El Mirage	EM	11,924.6
El Paso	EP	75,919.8
Fremont Peak	FP	45,664.7
Harper Lake	HL	19,021.1
Iron Mountain	IM	8,804.5
Jawbone	JB	84,292.0
Johnson Valley	JV	18,195.5
Joshua Tree	JT	0
Juniper Flats	JF	20,553.1
Kramer Hills	KH	40,146.0
Lancaster	LA	1,941.2
Middle Knob	MK	18,344.5
Mitchel Mountains	MM	7,481.2

Table 3.4-1. Acres of Desert Linkage Networks on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Sum of Acres
Mojave Trails National Monument	MT	93,147.8
Newberry-Rodman	NR	4,947.3
North Searles	NS	37459.6
Ord Mountains	OM	26,157.1
Rands	RA	14,618.5
Rattlesnake Canyon	RC	28,817.7
Red Mountain	RM	100,691.5
Ridgecrest	RI	53,580.6
Sand-to-Snow National Monument	SA	7,151.9
Sierra	SI	47,362.7
South Searles	SS	258.3
Stoddard Valley	SV	77,084.2
Victorville	VV	1,308.3
Wonder Valley	WV	6,734.5

3.4.2 Unusual Plant Assemblages

The CDCA recognized areas throughout the CDCA as UPAs which are extraordinary based on unusual age, unusual size, unusually high cover density, or disjunction from main centers of distribution. Areas with restricted and discontinuous habitats are also UPAs, and include seeps, springs, and riparian areas, as well as plants growing on restricted substrates such as limestone outcrops or sand dunes. The CDCA Plan identifies 39 UPAs and the WEMO Planning Area contains 12 of those UPAs. The UPAs are shown in Figure 3.4-2. Table 3.4-2 summarizes the UPAs in the WEMO Planning Area. Table 3.4-3 presents the riparian UPAs in grazing allotments within DT ACECs, and their currently assessed conditions.

Table 3.4-2. UPAs in WEMO Planning Area

UPA	Field Office	Estimated Acreage
Olancho Greasewood Assemblage	Ridgecrest	25,117
Kelso Valley Oak Woodland Assemblage	Ridgecrest	13,620
Salt and Brackish Water Marshes	Ridgecrest	3,736
Mojave Desert Mojave Saltbush Assemblage	Ridgecrest/Barstow	>10,000
Yuma Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	Barstow/Needles	4,214
Mojave Sink Desert Willow Assemblage	Barstow	5,750
Mesquite Thickets	Barstow	7,507
Ord Mountain Jojaba Assemblage	Barstow	<1 acre
Fry Mountain Ancient Mojave Yucca Clones	Barstow	<100

Table 3.4-2. UPAs in WEMO Planning Area

UPA	Field Office	Estimated Acreage
Johnson Valley/Lucerne Valley Creosote Bush Clones	Barstow	425,006
Pipes Canyon Huge Joshua Trees	Barstow	25,813
Palm Oases	Barstow/Palm Springs	8,620

Table 3.4-3. Riparian UPAs in DT ACECs in Grazing Allotments

Allotments	Riparian UPA	Assessed Condition
Ord Mountain	Upper Sweetwater Spring - West	Properly Functioning Condition
Ord Mountain	Upper Sweetwater Spring - East	Functioning At Risk – No Apparent Trend (Stable)
Ord Mountain	Lower Sweetwater Spring	Properly Functioning Condition
Ord Mountain	Willow Spring	Functioning At Risk – Stable
Ord Mountain	Kane Spring	Functioning At Risk – Upward Trend
Ord Mountain	Badger Spring	Functioning At Risk- Stable
Cantil Common	No natural springs	N/A
Shadow Mountain	No natural springs	N/A

3.4.3 Special Status Species

Special status species include those listed as threatened, endangered, proposed, or candidates under the federal Endangered Species Act; BLM Sensitive species; California threatened, endangered, species of concern, and state fully protected; California Rare Plant Rank 1B, and species of concern identified through personal communication with BLM biologists.

3.4.3.1 Plants

As shown in Appendix E, Regulatory Framework and Regional Background, a total of 57 special status plant species were identified as potentially occurring within the planning area (California Natural Diversity Database [CNDDDB] 2018) , and potentially affected by the Proposed Action (BLM 2005, 2013a, b; Dudek 2013 and ICF International 2012). The total acreage identified as potential occurrence for each of the 57 species by subregion are listed in Table 3.4-4.

Table 3.4-4. Acres of Identified Special Status Plant Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
Barstow	BA	Beaver Dam Breadroot	CNDDDB	332.9
		Creamy blazing star	CNDDDB	101.4
		Mojave monkeyflower	CNDDDB	36.0
Black Mountain	BM	Barstow woolly sunflower	CNDDDB	4.9
		Creamy blazing star	CNDDDB	775.7
		Desert cymopterus	CNDDDB	724.7
Broadwell Lake	BL	White-margined beardtongue	CNDDDB	69.1
Calico Mountains	CM	Beaver Dam Breadroot	CNDDDB	954.6
		Creamy blazing star	CNDDDB	66.8
		Mojave monkeyflower	CNDDDB	915.9
		Parish's phacelia	CNDDDB	325.8
Coolgardie	CG	Alkali mariposa lily	CNDDDB	3.3
		Barstow woolly sunflower	CNDDDB	5.0
		Beaver Dam Breadroot	CNDDDB	1,523.4
		California alkali grass	CNDDDB	138.7
		Clokey's cryptantha	CNDDDB	247.5
		Creamy blazing star	CNDDDB	96.9
		Lane Mountain milk-vetch	CNDDDB Critical Habitat	2,005.6 9,896.9
Cronese Lake	CL	Parish's phacelia	CNDDDB	579.6
Darwin	DA	Curved-pod milk-vetch	CNDDDB	181.8
		Death Valley sandpaper-plant	CNDDDB	1,426.3
El Mirage	EM	Beaver Dam Breadroot	CNDDDB	11.2
El Paso	EP	Charlotte's phacelia	CNDDDB	103.7
		Pale-yellow layia	CNDDDB	24.1
		Red Rock poppy	CNDDDB	162.8
Fremont Peak	FP	Barstow woolly sunflower	CNDDDB	1,836.8
		Desert cymopterus	CNDDDB	9.9
Harper Lake	HL	Barstow woolly sunflower	CNDDDB	1,489.9
		Beaver Dam Breadroot	CNDDDB	1,790.9
		Chaparral sand-verbena	CNDDDB	1.2
		Creamy blazing star	CNDDDB	69.8
		Desert cymopterus	CNDDDB	737.3
		Mojave Menodora	CNDDDB	69.8
		Mojave monkeyflower	CNDDDB	37.9
Parish's phacelia	CNDDDB	354.4		

Table 3.4-4. Acres of Identified Special Status Plant Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
Iron Mountain	IM	Barstow woolly sunflower	CNDDDB	35.2
Jawbone	JB	Charlotte's phacelia	CNDDDB	239.5
		Creamy blazing star	CNDDDB	18.3
		Kelso Creek monkeyflower	CNDDDB	651.6
		Kern River evening-primrose	CNDDDB	11.8
		Mojave tarplant	CNDDDB	7.48
		Pale-yellow layia	CNDDDB	45.4
		Palmer's mariposa lily	CNDDDB	160.6
		San Bernardino aster	CNDDDB	153.0
		Spanish Needle onion	CNDDDB	1.4
Johnson Valley	JV	Mojave Menodora	CNDDDB	11.9
Joshua Tree	JT	Little San Bernardino Mountains linanthus	CNDDDB	14.8
		Mojave Menodora	CNDDDB	8.9
Juniper Flats	JF	Beaver Dam Breadroot	CNDDDB	52.6
		Cushenbury buckwheat	CNDDDB	31.6
			Critical Habitat	31.8
		Cushenbury milk-vetch	CNDDDB	4.2
			Critical Habitat	8.4
		Latimer's woodland-gilia	CNDDDB	155.7
		Mojave tarplant	CNDDDB	52.6
		Parish's daisy	CNDDDB	52.1
Critical Habitat	64.3			
San Bernardino milk-vetch	CNDDDB	325.8		
Kramer Hills	KH	Barstow woolly sunflower	CNDDDB	36.9
		Beaver Dam Breadroot	CNDDDB	2,236.4
		Desert cymopterus	CNDDDB	4.9
Lancaster	LA	Robbins' nemacladus	CNDDDB	660.7
Middle Knob	MK	Bakersfield cactus	CNDDDB	1.0
		Charlotte's phacelia	CNDDDB	19.0
		Grey-leaved violet	CNDDDB	30.0
		Horn's milk-vetch	CNDDDB	195.1
		Kern buckwheat	CNDDDB	23.0
		Pale-yellow layia	CNDDDB	1.4
		Tehachapi monardella	CNDDDB	35.3

Table 3.4-4. Acres of Identified Special Status Plant Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
Mitchel Mountains	MM	Barstow woolly sunflower	CNDDDB	1.0
		Creamy blazing star	CNDDDB	56.2
		Mojave Menodora	CNDDDB	28.3
		Mojave monkeyflower	CNDDDB	125.4
Mojave Trails National Monument	MT	Harwood's eriastrum	CNDDDB	73.7
		Mojave Menodora	CNDDDB	33.5
		White-margined beardtongue	CNDDDB	2,894.3
Newberry-Rodman	NR	Beaver Dam Breadroot	CNDDDB	61.7
		Boyd's Monardella	CNDDDB	14.6
		Creamy blazing star	CNDDDB	37.1
		Mojave Menodora	CNDDDB	53.9
		Mojave monkeyflower	CNDDDB	250.7
		White-margined beardtongue	CNDDDB	9.2
Ord Mountains	OM	Beaver Dam Breadroot	CNDDDB	253.1
		Boyd's Monardella	CNDDDB	38.7
		Clokey's cryptantha	CNDDDB	5.0
		Creamy blazing star	CNDDDB	2,713.1
		Mojave Menodora	CNDDDB	44,017.2
		Mojave monkeyflower	CNDDDB	223.8
Rands	RA	Charlotte's phacelia	CNDDDB	28.4
		Clokey's cryptantha	CNDDDB	1,690.5
		Desert cymopterus	CNDDDB	0.3
		Red Rock Canyon monkeyflower	CNDDDB	1,286.4
		Red Rock poppy	CNDDDB	6.9
Rattlesnake Canyon	RC	Big Bear Valley woollypod	CNDDDB	740.9
		Creamy blazing star	CNDDDB	390.2
		Cushenbury buckwheat	CNDDDB	732.8
			Critical Habitat	390.5
		Cushenbury milk-vetch	CNDDDB	153.6
			Critical Habitat	830.1
		Cushenbury oxytheca	CNDDDB	83.2
		Latimer's woodland-gilia	CNDDDB	12.6
		Little San Bernardino Mountains linanthus	CNDDDB	224.6
		Mojave monkeyflower	CNDDDB	390.6
Palmer's Mariposa Lily	CNDDDB	6,484.4		

Table 3.4-4. Acres of Identified Special Status Plant Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
Rattlesnake Canyon (cont'd)	RC	Parish's daisy	CNDDDB	288.2
			Critical Habitat	880.7
		Robison's monardella	CNDDDB	55.9
		San Bernardino milk-vetch	CNDDDB	1,126.3
		White-bracted spineflower	CNDDDB	390.2
Red Mountain	RM	Barstow woolly sunflower	CNDDDB	16.3
		Desert cymopterus	CNDDDB	719.6
		Red Rock Canyon monkeyflower	CNDDDB	393.7
		Red Rock poppy	CNDDDB	176.3
Ridgecrest	RI	Red Rock poppy	CNDDDB	1,811.0
Sand-to-Snow National Monument	SA	Latimer's woodland-gilia	CNDDDB	34.8
		Little San Bernardino Mountains linanthus	CNDDDB	17.6
		Palmer's mariposa lily	CNDDDB	8,195.6
		Triple-Ribbed Milkvetch	CNDDDB	210.8
		White-bracted spineflower	CNDDDB	364.7
Sierra	SI	Charlotte's phacelia	CNDDDB	690.9
		Chimney Creek nemacladus	CNDDDB	6.0
		Creamy blazing star	CNDDDB	1,366.1
		Dedecker's clover	CNDDDB	28.8
		Gilman's goldenbush	CNDDDB	4.9
		Hall's daisy	CNDDDB	65.3
		Kern Plateau bird's beak	CNDDDB	27.3
		Latimer's woodland-gilia	CNDDDB	9.9
		Mojave tarplant	CNDDDB	20.8
		Muir's tarplant	CNDDDB	25.2
		Nine Mile Canyon phacelia	CNDDDB	245.6
		Owens Peak lomatium	CNDDDB	79.5
		Owens Valley checkerbloom	CNDDDB	31,171.6
		Rose-flowered larkspur	CNDDDB	481.0
		Sanicle cymopterus	CNDDDB	752.1
Spanish Needle onion	CNDDDB	5.0		
Sweet-smelling monardella	CNDDDB	51.9		

Table 3.4-4. Acres of Identified Special Status Plant Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
Stoddard Valley	SV	Barstow woolly sunflower	CNDDDB	856.5
		Beaver Dam Breadroot	CNDDDB	103.8
		Creamy blazing star	CNDDDB	42.1
		Mojave Menodora	CNDDDB	5.6
		Mojave monkeyflower	CNDDDB	169.7
		Parish's phacelia	CNDDDB	395.2
Victorville	VV	Short-joint beavertail cactus	CNDDDB	24.7
		White-bracted spineflower	CNDDDB	240.8
Wonder Valley	WV	Harwood's eriastrum	CNDDDB	4.9
		Little San Bernardino Mountains linanthus	CNDDDB	53.3
		Mojave Menodora	CNDDDB	97.9
		Robison's monardella	CNDDDB	82.2
		San Bernardino milk-vetch	CNDDDB	236.9

¹Sum of acres for special status plants were calculated using CNDDDB buffers.

The 57 special status plant species identified as potentially affected by the proposed action or alternatives within the planning area are described in the following section.

Alkali Mariposa Lily (*Calochortus striatus*)

Known distribution data for the alkali mariposa lily within the WEMO Planning Area is depicted in Figure 3.4-3. Within the planning area, the CNDDDB identifies approximately 3.3 acres within element occurrences for this species on BLM lands within the subregion Coolgardie (Table 3.4-4).

Big Bear Valley woollypod (*Astragalus leucolobus*)

Known distribution data for the Big Bear Valley woollypod within the WEMO Planning Area is depicted in Figure 3.4-4. Within the planning area, the CNDDDB identifies approximately 741 acres within element occurrences for this species on BLM lands within the subregion Rattlesnake Canyon (Table 3.4-4).

Barstow Woolly Sunflower (*Eriophyllum mohavense*)

This species is endemic to the west-central portion of California's Mojave Desert (NatureServe 2011; Jepson Flora Project 2011). According to NatureServe (2010), Barstow woolly sunflower is restricted to a range within a 30-mile radius of Barstow in San Bernardino and Kern counties. The species' elevation range extends from 1,640 to 3,150 feet (CNPS 2011). All of the 63 total

CNDDDB occurrences are in the planning area (CDFW 2012b). In 2006, there were approximately 10,600 known Barstow woolly sunflower individuals (NatureServe 2011). Population trends for this species are unknown.

The CNDDDB identifies approximately 4,279 acres within element occurrences for this species within the planning area on BLM lands (Figure 3.4-5). The amount of acres identified within each subregion is detailed above in Table 3.4-4. In addition, approximately 19,069 acres has been designated as the Barstow Woolly Sunflower ACEC within the Fremont Peak subregion to protect the plant.

California alkali grass (*Puccinellia simplex*)

Known distribution data for the California alkali grass within the WEMO Planning Area is depicted in Figure 3.4-6. Within the planning area, the CNDDDB identifies approximately 139 acres within element occurrences for this species on BLM lands within the subregion Coolgardie (Table 3.4-4).

Chaparral sand-verbena (*Abronia villosa* var. *aurita*)

Known distribution data for the chaparral sand-verbena within the WEMO Planning Area is depicted in Figure 3.4-7. Within the planning area, the CNDDDB identifies approximately 1 acre within element occurrences for this species on BLM lands within the subregion Harper Lake (Table 3.4-4).

Charlotte's Phacelia (*Phacelia nashiana*)

Based on the evident taxonomic confusion described in Appendix E, the distribution and extent of Charlotte's phacelia is less clear, and occurrences of Charlotte's phacelia could be more widespread than current records reflect. The records and distribution information in this report address the known locations of populations that have been previously identified as Charlotte's phacelia, including the isolated population in San Diego County.

Charlotte's phacelia is an endemic species that occurs in the desert-facing foothills of the Sierra Nevada and the adjacent El Paso Mountains, in Tulare, Inyo, and Kern counties (White 2006a). Although not mentioned in White (2006a), Charlotte's phacelia also occurs in Anza-Borrego State Park in San Diego County (CCH 2011).

Some population data are known for Charlotte's phacelia, but not much data has been provided regarding the populations status over time. Known distribution data for this species within the WEMO Planning Area is depicted in Figure 3.4-8. Within the planning area, the CNDDDB identifies approximately 1,119 acres of element occurrences for this species on BLM lands. The amount of acres of potential occurrence for this species within each subregion is detailed above in Table 3.4-4.

The BLM WEMO Final EIS (2005) recommends that further surveys be made to record fluctuations in population estimates at known locations, particularly with respect to the potential effects of grazing. Grazing cattle could play a role in seed dispersal, either through soil disturbance or via the digestive tract (White 2006a).

Chimney Creek nemacladus (*Nemacladus calcaratus*)

Known distribution data for the Chimney Creek nemacladus within the WEMO Planning Area is depicted in Figure 3.4-9. Within the planning area, the CNDDDB identifies approximately 6 acres within element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Clokey's Cryptantha (*Cryptantha clokeyi*)

Endemic to California (Inyo, Kern, Los Angeles, and San Bernardino Counties) (CNPS 2013) and found in the northwest Mojave Desert and in the north Desert Mountains (Jepson Flora Project 2013). Clokey's cryptantha is broadly distributed in the planning area, found in both the desert near Lancaster, Barstow, Ridgecrest, and Apple Valley, and in the north Desert Mountains, including the Argus Mountains and the Panamint Range (CNPS 2013).

Known distribution data for Clokey's cryptantha within the WEMO Planning Area is depicted in Figure 3.4-10. Within the planning area, the CNDDDB identifies approximately 1,942 acres of element occurrences for this species on BLM lands. The amount of acres of potential occurrence for this species within each subregion is detailed above in Table 3.4-4.

Creamy blazing star (*Mentzelia tridentata*)

Known distribution data for the creamy blazing star within the WEMO Planning Area is depicted in Figure 3.4-11. Within the planning area, the CNDDDB identifies approximately 5,734 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Curved-pod milk-vetch (*Astragalus mohavensis* var. *hemigyris*)

Known distribution data for the curved-pod milk-vetch within the WEMO Planning Area is depicted in Figure 3.4-12. Within the planning area, the CNDDDB identifies approximately 182 acres within element occurrences for this species on BLM lands within the subregion Darwin (Table 3.4-4).

Cushenbury Buckwheat (*Eriogonum ovalifolium* var. *vineum*)

Cushenbury buckwheat is endemic to the San Bernardino Mountains in San Bernardino County (USFWS 2009d). However, Sanders (2003) reports a possible, but unconfirmed, small population in the southern Sierra Nevada Mountains (Sanders 2003). The species occurs along the northeastern edge of the San Bernardino Mountains, northwest, north, and east of Big Bear Lake from White Mountain southeast to Mineral Mountain on the north side of Rattlesnake Canyon (Sanders 2003; USFWS 2009d).

The estimated population of Cushenbury buckwheat when it was listed in 1994 was estimated to be about 13,000 individuals in fewer than 20 locations, with about 25% of the occurrence supporting fewer than 1,000 individuals (USFWS 2009d). At the time critical habitat was designated in 2002, there were 239 site-specific occurrences of Cushenbury buckwheat (67 FR 78570–78610).

However, in the 5-year review in 2009, the USFWS (2009d) indicated that determining population trends was difficult because what constitutes site-specific occurrences has been subjectively defined and surveys efforts have likely increased since its listing in 1994.

The CNDDDB identifies approximately 1,184 acres of element occurrences for this species within the planning area (Table 3.4-4 and Figure 3.4-13). The 1,184 acres for this species includes approximately 420 acres of Critical Habitat designated within the planning area. In addition, approximately 4,357 acres has been designated as the Carbonate Endemic Plants RNA ACEC within the Rattlesnake Canyon subregion to protect the plant.

Cushenbury Milk-vetch (*Astragalus albens*)

Cushenbury milk-vetch is endemic to the San Bernardino Mountains in San Bernardino County (USFWS 2009e). The species occurs along the northeastern end of the San Bernardino Mountains, north and east of Big Bear Lake from a ridgetop just east of Dry Canyon, southeast through Lone Valley, east of Baldwin Lake, and to upper Burns Canyon (MacKay 2003). As of 2002, there were an estimated 103 mapped localities for the species (67 FR 78570–78610). With a few exceptions, it is closely associated with carbonate and carbonate-related soils (limestone and dolomite) and outcrops at elevations between 4,000 and 6,600 feet (MacKay 2003).

The estimated population of Cushenbury milk-vetch when it was listed in 1994 was 5,000 to 10,000 individuals in fewer than 20 locations (USFWS 2009e). At the time the Recovery Plan was prepared in 1997, there were 33 known occurrences of Cushenbury milk-vetch (USFWS 1997b). At the time critical habitat was designated in 2002, there were 239 site-specific occurrences of Cushenbury milk-vetch (67 FR 78570–78610). However, in the 5-year review in 2009, the USFWS indicated that determining population trends was difficult because what constitutes site-specific occurrences has been subjectively defined and survey efforts have likely increased since its listing in 1992.

There are 20 occurrence records from the CNDDDB for Cushenbury milk-vetch, 8 of which occur in the planning area (CDFW 2012b). There are three occurrences within the planning area that have been observed prior to 1990 or have an unknown observation date. These occur at the edge of the San Bernardino National Forest along the western boundary of the planning area (CDFW 2012b).

There are five occurrences within the planning area that have been observed since 1990. These occur at the edge of the San Bernardino National Forest along the western boundary of the planning area (CDFW 2012b). These all occur on BLM lands or lands designated BLM/private (CDFW 2012b).

The CNDDDB identifies approximately 994 acres of element occurrences for this species within the planning area (Figure 3.4-14). The amount of acres associated with the element occurrences identified within each subregion is detailed above in Table 3.4-4. The 994 acres of potential occurrence for this species includes approximately 836 acres of Critical Habitat designated within the planning area. In addition, approximately 4,357 acres has been designated as the Carbonate Endemic Plants RNA ACEC within the Rattlesnake Canyon subregion to protect the plant.

Cushenbury Oxytheca (*Acanthoscyphus parishii* var. *goodmaniana*)

Cushenbury oxytheca occurs along the north foot of the San Bernardino Mountains in San Bernardino County on limestone and other carbonate talus slopes (CDFW 2012b; Sanders 2007). The CNDDDB and the USFWS species database document 224 occurrences of Cushenbury oxytheca. The majority of these populations occur within the San Bernardino National Forest. As reported by the USFWS in 2009, Cushenbury oxytheca occupies approximately the same range as it did at listing, which is approximately 500 acres (USFWS 2009f).

Cushenbury oxytheca is a small, annual species of xerophytic habitats that is subject to year-to-year fluctuations in population size as a result of differential rainfall (USFWS 2009f). Further, what is defined as an “occurrence” has been variable and subjective, making it difficult to detect changes in abundance (USFWS 2009f). Due to these factors, population status and trends are difficult to measure. It should also be noted that as increased survey efforts have occurred since the species original listing, there has also been an increase in the number of detected occurrences (USFWS 2009f).

Cushenbury oxytheca is primarily associated with a region of carbonate soils that occur along the northern edge of the San Bernardino Mountains (USFWS 2009f). It has been estimated by Gonella and Neel (1995) that the mining industry has impacted over 1,600 acres of potential habitat for a variety of carbonate-endemic plants; and because Cushenbury oxytheca was not described until 1980, the historical distribution of this species is unknown, except only by inference. One occurrence record with an unknown observation date is recorded in the planning area north of Big Bear City (CDFW 2012b).

Three known recent occurrences of Cushenbury oxytheca occur within the planning area, two north of Big Bear City and one near Butler Peak (CDFW 2012b). Two of these are within the Barstow RA on BLM lands and the other is in an area under private and/or BLM management (CDFW 2012b). Approximately 83 acres of designated Critical Habitat has been identified for this species within the Rattlesnake Canyon subregion (Figure 3.4-15) as detailed above in Table 3.4-4.

Death Valley Sandpaper-plant (*Petalonyx thurberi* ssp. *gilmanii*)

Native and endemic to California (Inyo and San Bernardino Counties) (CNPS 2013) and found in the North Mojave Desert (Jepson Flora Project 2013). Occurrence within the planning area is limited to Old Ibex Pass and potentially the west side of the Panamint Range (CNPS 2013).

Known distribution data for Death Valley sandpaper-plant within the WEMO Planning Area is depicted in Figure 3.4-16. Within the planning area, the CNDDDB identifies approximately 1,425 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Dedecker's Clover (*Trifolium dedeckerae* also *Trifolium kingii* ssp. *Dedeckerae*)

Endemic to California (Inyo, Kern, Mono, and Tulare Counties) (CNPS 2013) and found in the southern high Sierra Nevada Mountains and to the east (Jepson Flora Project 2013). Known occurrences within the planning area include Coso Peak north of Ridgecrest and in the foothills adjacent to Sequoia NF from Ridgecrest north to Owens Lake (CNPS 2013).

Known distribution data for Dedecker's clover within the WEMO Planning Area is depicted in Figure 3.4-17. Within the planning area, the CNDDDB identifies approximately 29 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Desert Cymopterus (*Cymopterus deserticola*)

The historical distribution of desert cymopterus ranged from Apple Valley in San Bernardino County northward approximately 55 miles to the Cuddeback Lake basin in San Bernardino County, and westward approximately 45 miles to the Rogers and Buckhorn Dry Lake basins on Edwards Air Force Base in Kern and Los Angeles counties. However, the Apple Valley locations have presumably been extirpated resulting in a current distribution that includes the Rogers Dry Lake, Harper Dry Lake, Cuddeback Dry Lake, and Superior Dry Lake basins (69 FR 64884–64889). This species occurs at elevations from 2,000 to 3,000 feet, and possibly up to 5,000 feet (69 FR 64884–64889; CNPS 2011).

Abundance estimates for each population are usually less than 1,000 plants. However, estimating population size is difficult for a number of reasons. First, occurrences and population size fluctuate widely from year to year in response to climatic conditions, especially on the amount of rainfall. Desert cymopterus is dependent upon frequent spring rains. Furthermore, this species may remain dormant underground as a taproot and may not emerge when there is not enough rainfall, so the number of individuals underground could be greater than the number of individuals aboveground. Also, detectability may be low in years when plants only produce leaves and no inflorescence (NatureServe 2011).

The largest and most robust populations of desert cymopterus occur on Edwards Air Force Base. Seventeen population surveys were performed during a study in 1995, a good year for the species, and population sizes at each location ranged from 1 to 1,929 individuals. In total, 14,093 individuals were counted over an area of 1,465 acres (Tetra Tech 1995, cited in NatureServe 2011).

There are a total of 79 occurrences of desert cymopterus in the CNDDDB (CDFW 2012b). There are three CNDDDB occurrences from before 1990. Two of these are located in the vicinity of Leuhman Ridge and Kramer Hills near other occurrences of this species. One of these is possibly extirpated and located over 25 miles southeast of other occurrences east of Victorville.

There are 76 recent occurrences (status updated since 1990) that range from south of Buckhorn Lake along the Kern–Los Angeles County boundary north to the Black Hills and Fort Irwin. However, the majority of these occurrences are located on or near Edwards Air Force Base. Those on Edwards Air Force Base and the one occurrence at Fort Irwin are on lands owned by the DOD. Other occurrences on public land include those managed by the BLM in the general vicinity of North Edwards, Harper Lake, and Cuddeback Lake. The remaining nine recent records are either located on private land or the ownership is unknown (CDFW 2012b).

Known distribution data for Desert cymopterus within the WEMO Planning Area is depicted in Figure 3.4-18. Within the planning area, the CNDDDB identifies approximately 3,380 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Gilman's goldenbush (*Ericameria gilmanii*)

Known distribution data for the Gilman's goldenbush within the WEMO Planning Area is depicted in Figure 3.4-19. Within the planning area, the CNDDDB identifies approximately 5 acres within element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Grey-leaved violet (*Viola pinetorum* ssp. *grisea*)

Known distribution data for the grey-leaved violet within the WEMO Planning Area is depicted in Figure 3.4-20. Within the planning area, the CNDDDB identifies approximately 30 acres within element occurrences for this species on BLM lands within the Middle Knob subregion (Table 3.4-4).

Hall's Daisy (*Erigeron aequifolius*)

Hall's daisy is endemic to California (Fresno, Kern, and Tulare Counties) (CNPS 2013) and found in the southern high Sierra Nevada Mountains (Jepson Flora Project 2013). Known within the planning area from only Owens Peak west of Indian Wells, but is more broadly distributed throughout the southern Sierra Nevada Mountains to the north of the planning area (CNPS 2013).

Known distribution data for Hall's daisy within the WEMO Planning Area is depicted in Figure 3.4-21. Within the planning area, the CNDDDB identifies approximately 65 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Harwood's eriastrum (*Eriastrum harwoodii*)

Known distribution data for the Harwood's eriastrum within the WEMO Planning Area is depicted in Figure 3.4-22. Within the planning area, the CNDDDB identifies approximately 79 acres within element occurrences for this species on BLM lands within the subregions Mojave Trails National Monument and Wonder Valley (Table 3.4-4).

Horn's milk-vetch (*Astragalus hornii* var. *hornii*)

Known distribution data for the Horn's milk-vetch within the WEMO Planning Area is depicted in Figure 3.4-23. Within the planning area, the CNDDDB identifies approximately 195 acres within element occurrences for this species on BLM lands within the Middle Knob subregion (Table 3.4-4).

Kelso Creek Monkeyflower (*Mimulus shevockii*)

The Kelso Creek monkeyflower is restricted to a very small range, approximately 20 square miles, in the southern Sierra Nevada Foothills and western edge of the Mojave Desert within the Kern River drainage (Jepson Flora Project 2011; Fraga 2007). All 11 known occurrences are in Kern County, the majority southeast of Lake Isabella in the Kelso Creek and Cortez Canyon area, all within an area 5 miles in diameter (CDFW 2012b). Two disjunct occurrences are located in the

Cyrus Canyon and Cyrus Flat area northeast of Lake Isabella, over 12 miles northwest of the other populations (CDFW 2012a).

Kelso Creek monkeyflower has probably always been a rare species with a very narrow distribution (Elvin 2006). All known occurrences of Kelso Creek monkeyflower, except one whose exact location is unknown, were last surveyed systematically in 2008 (CPC 2011; CDFW 2012b). In some cases, timing was not optimal for detection of the species. Based on the population estimates made in 2008 and earlier estimates for those that were not visible in 2008, there were at least an estimated 53,400 Kelso Creek monkeyflower individuals throughout its range (CDFW 2012b). However, the population trend is unknown and because this plant is an annual, population sizes may vary greatly from year to year (CDFW 2012b; Fraga 2007). In addition, long-term trends are difficult to assess since the species was not described until 1986. Plants were extirpated when Lake Isabella was created (CDFW 2012b).

Of the 11 total occurrences of Kelso Creek monkeyflower, 7 are in the planning area. Five of these are in the Ridgecrest RA on lands managed by the BLM (CDFW 2012b). Two are further south on the west and east sides of Kelso Valley and are located partially on BLM lands and partially on private land (CDFW 2012b; 59 FR 50540–50550). There are no historical records (i.e., before 1990) for this species within the planning area. All occurrences have been seen since 2008 and are presumed extant (CDFW 2012b).

Known distribution data for Kelso Creek monkeyflower within the WEMO Planning Area is depicted in Figure 3.4-24. Within the planning area, the CNDDDB identifies approximately 651 acres of element occurrences for this species on BLM lands within the Jawbone subregion (Table 3.4-4).

Kern Buckwheat (*Eriogonum kennedyi* var. *pinicola*)

Kern buckwheat is endemic to Kern County and known from only three occurrences in the Sweet Ridge area of the southeastern Sierra Nevada Foothills in southeastern Kern County (CNPS 2011; CDFW 2012b; Jepson Flora Project 2011). Two of the three colonies at the type locality each consisted of more than 100 plants in 1992, 1993, and 1994. The remaining colony included over 100 plants in 1994 (CDFW 2012b). A collection in this area reported the population as abundant in 2010 (CCH 2011). The occurrence west of Middle Knob was considered locally common in 1966 and included over 100 plants in 1993, 1995, and 1996. The occurrence on the west slope of Sweet Ridge included over 100 plants in 1994 (CDFW 2012b). There are also 1,000 individuals mapped at one site in the North Sky River project area that were recorded recently (Kern County 2011).

At one time up to six occurrences were identified as Kern buckwheat (Sanders and Greene 2006), but some were misidentified and only three have been verified as Kern buckwheat (CDFW 2012b). There were an estimated 400 plants based on observations in the early 1990s, but surveys in 1998 estimated the total population at approximately 10,000 individuals in four populations (Rutherford 1998, cited in Sanders and Greene 2006). It is unclear how these populations relate to the three currently known CNDDDB occurrences. During these surveys it was noted that the populations contained a range of age classes and appeared reproductively healthy (Rutherford 1998, cited in Sanders and Greene 2006).

Kern buckwheat has been searched for extensively on Edwards Air Force Base since 1991 but has not been found there, and there is no suitable habitat. The Tehachapi So., Monolith, Mojave,

Mojave NE, Cache Peak, Tehachapi NE, and portions of the Cross Mountain USGS quadrangles have also been searched. In addition, the Middle Knob/Pine Tree Canyon area has been searched by a BLM botanist but no Kern buckwheat has been found (NatureServe 2011). However, it is possible that additional populations could exist on unexplored ridgetops in the area since much of the occupied area is rugged and poorly explored (Sanders and Greene 2006).

All three occurrences for Kern buckwheat recorded in the CNDDDB are in the planning area (CDFW 2012b). Two occurrences recorded in the CNDDDB are located in the Ridgecrest RA, managed by the BLM (CDFW 2012b). The first, the type locality, occurs along trails on Sweet Ridge 2 miles south-southeast of Cache Peak and consists of three colonies. A 2010 collection was made at this type locality occurrence (CCH 2011). The second occurrence in the Ridgecrest RA, is approximately 1 mile west of Middle Knob. The third CNDDDB occurrence is on the west slope of Sweet Ridge, about 1.5 miles south of Cache Peak and is located on private land owned by a wind energy development company (CDFW 2012b).

Known distribution data for Kern buckwheat within the WEMO Planning Area is depicted in Figure 3.4-25. Within the planning area, the CNDDDB identifies approximately 23 acres of element occurrences for this species on BLM lands within the Middle Knob subregion (Table 3.4-4).

Kern Plateau bird's-beak (*Cordylanthus eremicus ssp. Kernensis*)

Known distribution data for the Kern Plateau bird's-beak within the WEMO Planning Area is depicted in Figure 3.4-26. Within the planning area, the CNDDDB identifies approximately 27 acres within element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Kern River evening-primrose (*Camissonia integrifolia*)

Known distribution data for the Kern River evening-primrose within the WEMO Planning Area is depicted in Figure 3.4-27. Within the planning area, the CNDDDB identifies approximately 12 acres within element occurrences for this species on BLM lands within the Jawbone subregion (Table 3.4-4).

Lane Mountain Milk-vetch (*Astragalus jaegerianus*)

All known locations of Lane Mountain milk-vetch are within the planning area and are composed of four discrete population locales north of Barstow, covering about 21,000 acres: NASA Goldstone, Brinkman Wash/Montana Mine, Paradise Valley, and Coolgardie Mesa (Charis 2002).

The rangewide population status information cited by USFWS (2008c) in the 5-year review is based on the Charis (2002) surveys conducted in 2001, as summarized in Table 1 of the 5-year review. The number of documented plants in 2001 was 5,723 individuals over approximately 21,350 acres of occupied habitat among the four mapped populations. Charis (2002) also provided estimates for the population because transect survey coverage of potential was not 100% (see discussion in Data Characterization section below). The population estimate incorporated a "percentage observability" factor assumption, ranging from 10% to 100%, and an assumption of average plant density for unsurveyed areas based on transect count data. Charis (2002) estimated a

population of approximately 14,120 individuals based on 100% observability to 141,200 individuals based on 10% observability; clearly, the population estimate is highly sensitive to the assumed observability.

Recent data indicate a declining population of Lane Mountain milk-vetch related to the prolonged drought from 1999 to 2009. There has been about an 88% reduction in population size, as measured by aboveground individuals, on plots continuously monitored since 1999, mainly as a result of degradation and mortality of host plants (Huggins and others 2010). However, the most recent data reported in the May 2011 critical habitat final rule indicate that while the current number of individual plants is smaller than in 2005, the number of individual plants on the study plots has increased from four plants in 2007 to 154 plants in 2010 (76 FR 29108–29129). Further, the mortality rate of individuals has decreased over the last 2 years (76 FR 29108–29129).

The relationship between population and drought and wet cycles is still not well understood. Plants can be dormant for several years, resulting in observations of fewer plants, but then reappear in a year with more favorable conditions, so the “population” has not really declined.

USFWS (2008c) reported that the U.S. Army has also been monitoring the four populations, but these data were not available for the 5-year review. However, because drought has had such a dramatic effect on this narrow endemic species on the monitored plots and it has fairly restricted habitat associations (i.e., it probably does not occur in heterogeneous microhabitats), it is reasonable to assume that other populations of Lane Mountain milk-vetch have suffered similar drought-related declines and that the current range-wide population is much smaller than documented in 2001 by Charis (2002).

Historically (i.e., prior to 1990), Lane Mountain milk-vetch was known from the Brinkman Wash, Coolgardie Mesa, and Paradise Valley areas; and as late as 1999, these were the only documented populations (Charis 2002).

The 2001 survey work by Charis (2002) confirmed the populations at the three previously known locations and found a new population—NASA Goldstone—which extended the species’ range by about 1.4 miles north and 2.6 miles east. The Coolgardie Mesa population comprises approximately 9,775 acres in the Mud Hills and Lane Mountain USGS quadrangles (see previous note about the genetic distinction within the Coolgardie Mesa population). The Paradise Valley population comprises approximately 4,794 acres in the Williams Well quadrangle. Both the Brinkman Wash and NASA Goldstone populations are in the Paradise Range quadrangle, with Brinkman Wash comprising approximately 5,497 acres and NASA Goldstone comprising about 1,283 acres (Charis 2002). The CNDDDB includes 22 occurrences in this area (CDFW 2012b).

Within the planning area, the CNDDDB identifies approximately 2,004 acres of element occurrences for this species on BLM lands within the Coolgardie subregion planning area (Table 3.4-4 and Figure 3.4-28). In addition, approximately 9,888 acres of Critical Habitat has been designated within the Coolgardie subregion (Table 3.4-4).

Latimer's woodland-gilia (*Saltugilia latimeri*)

Known distribution data for the Latimer's woodland-gilia within the WEMO Planning Area is depicted in Figure 3.4-29. Within the planning area, the CNDDDB identifies approximately 213 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Little San Bernardino Mountains Linanthus (*Linanthus maculatus*)

Little San Bernardino Mountains linanthus is endemic to Southern California with occurrences in San Bernardino, Riverside, and Imperial counties (CNPS 2011). This species' range is restricted to the mouth of Dry Morongo Canyon near the City of Desert Hot Springs and the north side of Joshua Tree National Park south of SR 62 in the Little San Bernardino Mountains, and from Whitewater Canyon in the eastern San Bernardino Mountains to Palm Springs. Virtually all of the Palm Springs populations are considered extirpated due to development (Sanders 2006). Additional areas where the species has been recently documented include the mouth of Rattlesnake Canyon and near the Two Hole Spring area on the northern side of the San Bernardino Mountains, and just east of the San Diego County line near Dos Cabezas Spring in Imperial County (CCH 2011; Sanders 2006).

There are four major populations of Little San Bernardino Mountains linanthus (Sanders 2006; CCH 2011). All populations are extant except for the Palm Springs populations, which were located in the center of what is now Palm Springs and along I-10 north of the city proper (Sanders 2006; CCH 2011). Because of the isolated nature of desert wash systems, the major populations are separated into smaller "population units" associated with individual washes (Sanders 2006). Two new populations have been discovered in the last two decades: a population in the Rattlesnake Canyon and Two Hole Spring areas on the northern side of the San Bernardino Mountains and an Imperial County population located just east of the San Diego County line near Dos Cabezas Spring (CDFW 2012b; CCH 2011).

There has been a minimal effort to estimate the number of individuals in each population. Sanders' efforts to estimate population sizes for the species included personal communication with G. Helmkamp regarding his collections, resulting in the following estimates: about 10,000 individuals north of Indian Avenue near the mouth of Big Morongo Canyon (Riverside County) in 1996; widespread plants observed in flat areas between Joshua Tree and Indian Cove in 1995; a few hundred individuals in the Dry Morongo Canyon (San Bernardino County) area in 1992 and 1995 and six in 1996; and 100 plants in an area south of Joshua Tree near SR 62 in 1986, which were "reduced markedly" in 1987, 150–200 plants in 1988, 25–30 plants in 1990, and 1,000 plants in 1993 (Patterson 1989; Sanders 2006; CDFW 2012b).

There are several gaps in the early records for this species, including a 17-year gap from 1907 to 1924 (Sanders 2006; CDFW 2012b; CCH 2011). Only six collections were made between 1924 and 1960 and only two collections were made in the 1970s. Since the end of the 1970s, the number of collections has increased, probably because of the increase in desert botanical work and Patterson's 1989 description of habitat for the species (Sanders 2006).

Population trends are difficult to estimate for the species because population size in a given year appears to depend on environmental conditions and fluctuates greatly from year to year.

The CNDDDB records 27 occurrences for this species (CDFW 2012b). Of the 15 occurrences documented in the CNDDDB within the planning area, one population east of Yucca Valley and west of Joshua Tree in San Bernardino County, California, is considered historical since the plants have not been observed since 1937. However, this occurrence is still presumed to be extant (CDFW 2012b).

The recent occurrences of Little San Bernardino Mountains linanthus occur along the western boundary of the planning area in San Bernardino and Riverside counties (CDFW 2012b). Seven of the occurrences are at least partially located in Joshua Tree National Park. Two are located on BLM land just below the mouth of Rattlesnake Canyon in southeastern Lucerne Valley and east of Two Hole Spring at the northeastern base of the San Bernardino Mountains (CDFW 2012b). One occurs on private land south of the town of Joshua Tree. The remaining three have unknown ownership and occur on a wash north of Joshua Tree National Park, south of SR 62 east of Joshua Tree, and at Pipes Canyon north of Yucca Valley (CDFW 2012b).

Known distribution data for Little San Bernardino Mountains linanthus within the WEMO Planning Area is depicted in Figure 3.4-30. Within the planning area, the CNDDDB identifies approximately 297 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Mojave Monkeyflower (*Mimulus mohavensis*)

This species occurs in the Mojave Desert in west-central San Bernardino County (Jepson Flora Project 2011). The greatest population densities occur south of Daggett and Barstow (MacKay 2006). However, the majority of the historical occurrences in the Barstow area have either been extirpated or impacted (CNPS 2011). The elevation range of this species extends from 600 to 1,200 meters (1,969 to 3,937 feet) (CNPS 2011).

Population trends for Mojave monkeyflower are unknown but are thought to be stable to declining (NatureServe 2011). One CNDDDB occurrence has been possibly extirpated, and the status of 9 of the 56 total CNDDDB occurrences of Mojave monkeyflower in the planning area has not been updated since 1990 (CDFW 2012b; MacKay 2006).

There are a total of 56 CNDDDB occurrences for Mojave monkeyflower in the planning area. Of these, 9 occurrences have been recorded prior to 1990, are not dated, or are considered possibly extirpated (CDFW 2012b). These records extend from the area around Barstow southeast to the area around the Newberry Mountains, and one occurrence much farther south near Old Woman Springs.

Of the 56 total CNDDDB occurrences in the planning area, 47 have been recorded in the CNDDDB since 1990 and are presumed extant. One of the major populations of Mojave monkeyflower recorded in the CNDDDB since 1990 that is presumed extant is located southeast of Barstow to Ord Mountain. A second concentration of occurrences is located northeast of Adelanto and extends to Helendale. Two isolated occurrences occur between these two major populations, at Hodge and just south of the Black Mountains summit. Of the current occurrences, approximately 89% (42 occurrences) are on lands managed by the BLM, and the remaining 11% (5 occurrences) are on lands that are privately owned or whose ownership is unknown (CDFW 2012b).

Known distribution data for Mojave monkeyflower within the WEMO Planning Area is depicted in Figure 3.4-31. Within the planning area, the CNDDDB identifies approximately 2,304 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Mojave Tarplant (*Deinandra mohavensis*)

Mojave tarplant is known in Kern, Riverside, and San Diego counties (believed extirpated from San Bernardino County) (CDFW 2012b). This species occurs at elevations of 640–1,600 meters (1,900–4,800 feet) (CNPS 2011). The distribution is discontinuous and possibly relictual.

Because this species was only recently rediscovered (in 1994) there is little information available on population trends. Of the eight occurrences in the planning area, four are known from BLM land, two are on private land, and ownership is unknown for two of the occurrences. The occurrence on private land near Cutterbank Spring numbered 14 individuals in 2003. Approximately 15,000 plants were observed at the other occurrence on private land located at the south end of Kelso Valley in 2010. Many more plants were observed in 2011 including an additional 1,500 plants in the northeastern portion of the occurrence (CDFW 2012b). Of the two occurrences for which ownership is unknown, one numbered in the thousands in 1998 and the other numbered 109 individuals in 2003. Of the four occurrences on BLM land, one numbered 50,000 in 2003 (with 30 rosettes observed very early in the year in 2004), one numbered in the several hundreds in 2008, and one numbered 5,000 in 1998 (and was locally common in 2001 and numbered 3,000 in 2003). Approximately 50,000 plants were observed in 2003 at the last occurrence on BLM land at Cutterbank Spring; 30 plants were observed in 2004 in their rosette form in an early season survey, and plants were “abundant around the springs and in the surrounding drainage channels” in 2010 (CDFW 2012b). Overall, there are 69 occurrences in Kern, Riverside, and San Diego counties (CDFW 2012b) and most of these appear to have number of individuals estimated once, making it difficult to discern a population trend.

There are a total of 69 occurrences in the CNDDDB, eight of which occur in the planning area (CDFW 2012b). This species was not known to occur in the planning area prior to 1990.

Within the planning area, Mojave tarplant is known from the desert slope of the southern Sierra Nevada Mountains in Kern County (Sanders 2006a). There are eight occurrences in the planning area, all within Kern County. Four of the occurrences in the planning area are known from lands managed by the BLM; two are on private land, and ownership is unknown for two of the occurrences. The eight occurrences are located west of SR 14 and east of the Sequoia National Forest, north of I-40: near Cutterbank Spring, in Jawbone Canyon, near Short Canyon, in lower Esperanza Canyon, in lower Water Canyon, and in the vicinity of Cross Mountain (CDFW 2012b). Mojave tarplant may also occur at Red Rock Canyon in Red Rock Canyon State Park in Kern County (Faull, pers. comm. 1998, cited in Sanders 2006a).

Known distribution data for Mojave tarplant within the WEMO Planning Area is depicted in Figure 3.4-32. Within the planning area, the CNDDDB identifies approximately 81 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Muir's tarplant (*Carlquistia muirii*)

Known distribution data for the Muir's tarplant within the WEMO Planning Area is depicted in Figure 3.4-33. Within the planning area, the CNDDDB identifies approximately 25 acres within element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Nine Mile Canyon Phacelia (*Phacelia novenmillensis*)

Endemic to California (Inyo, Kern, and Tulare Counties) (CNPS 2013) and found on the east slope of the southern high Sierra Nevada Mountains and on the west edge of the Mojave Desert (Jepson Flora Project 2013). Known occurrences within the Project Area are concentrated in the Sierra Nevada foothills west of Indian Wells including Owens Peak, Ninemile Canyon, Lamont Peak, and Walker Pass (CNPS 2013).

Known distribution data for Nine Mile Canyon phacelia within the WEMO Planning Area is depicted in Figure 3.4-34. Within the planning area, the CNDDDB identifies approximately 246 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Owens Peak Lomatium (*Lomatium shevockii*)

Endemic to California (Kern County) (CNPS 2013) and found in the southern high Sierra Nevada Mountains (Jepson Flora Project 2013). Occurrences known within the planning area from Owens Peak and Mt. Jenkins west of Indian Wells (CNPS 2013).

Known distribution data for Owens Peak lomatium within the WEMO Planning Area is depicted in Figure 3.4-35. Within the planning area, the CNDDDB identifies approximately 79 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Owens Valley checkerbloom (*Sidalcea covillei*)

Known distribution data for the Owens Valley checkerbloom within the WEMO Planning Area is depicted in Figure 3.4-36. Within the planning area, the CNDDDB identifies approximately 31,172 acres within element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Pale-yellow layia (*Layia heterotricha*)

Known distribution data for the pale-yellow layia within the WEMO Planning Area is depicted in Figure 3.4-37. Within the planning area, the CNDDDB identifies approximately 71 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Palmer's mariposa-lily (*Calochortus palmeri* var. *palmeri*)

Known distribution data for the Palmer's mariposa-lily within the WEMO Planning Area is depicted in Figure 3.4-38. Within the planning area, the CNDDDB identifies approximately 14,841 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Parish's Daisy (*Erigeron parishii*)

Parish's daisy is endemic to Southern California, restricted to dry, calcareous (mostly limestone) slopes of the San Bernardino Mountains, with a few collections from granitic areas at the east end of the San Bernardino Mountains and in the Little San Bernardino Mountains where the species

occurs on quartz monzonite substrate (Neel 2000; Sanders 2006). Parish's daisy occurs at elevations between 3,700 and 6,600 feet, most often in washes and canyon bottoms, but sometimes on alluvial benches or steep rocky mountainsides (Mistretta and White 2001). It is estimated that 1,029 acres are occupied Parish's daisy habitat (USFWS 2009g).

The current population status of Parish's daisy is unclear and there is a discrepancy in total reported occurrences of the species. According to the final listing rule in 1994, Parish's daisy was known from fewer than 25 occurrences with a total estimated population size of 16,000 individuals, but at that time the San Bernardino National Forest had mapped 87 site-specific occurrences (USFWS 2009g). USFWS (2009g) notes that what constitutes an occurrence has been subjectively defined over various surveys, making it difficult to specify status or change in status of Parish's daisy since it was listed. In addition, there has been an increase in survey efforts for this species since listing that has resulted in an increase in the number of occurrences detected. Sanders (2006) characterizes Parish's daisy as one of the more common carbonate endemics of the San Bernardino Mountains. Nonetheless, there has not been any systematic population studies conducted over time to document population trends.

Known distribution data for Parish's daisy within the WEMO Planning Area is depicted in Figure 3.4-39. Within the planning area, the CNDDDB identifies approximately 340 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4. Additionally, approximately 940 acres of Critical Habitat has been designated within the planning area (Table 3.4-4).

Parish's Phacelia (*Phacelia parishii*)

Parish's phacelia is known in California from four sites east and south of Barstow in San Bernardino County and one site in Stewart Valley near the Nevada border in Inyo County. Although rare, its habitat is well known, and Parish's phacelia is more widely distributed in Nevada, and has also been identified from one location in Arizona.

This species occurs at elevations ranging between 1,772 and 3,937 feet (elevations in Nevada populations are somewhat higher), but all of the California collections have been made from alkaline playas or lakebeds below about 3,000 feet (White 2006b). In San Bernardino County, the species has been collected in USGS 7.5-minute quadrangles: Lucerne Valley, Fifteen Mile Valley, Harvard Hill, Yermo, Barstow, and Alvord Mountain West. In Inyo County, the species was collected from the Six-mile Spring quadrangle.

In 1984, Parish's phacelia was presumed extinct in California until it was rediscovered in 1989 by Bagley in a new San Bernardino County location southeast of Coyote Lake (Smith 1997). The species was collected by F. Smith in 1995 in Inyo County, California, and is now known from three occurrences in California (CNPS 2011).

Parish's phacelia was proposed as a federal candidate for listing in 1993 (58 FR 51144-51190), and Rhodes and Williams (1977, cited in Smith 1997) discussed its likely extirpation at historical occurrences in Nevada. Parish's phacelia is known from 15 occurrences in Nevada, and subsequent surveys in years of ample rainfall identified much larger populations and the recommendation for candidacy was withdrawn.

As noted above, USFWS estimated the population at the Coyote Dry Lake site as approximately 200 million plants in 1991. Bagley (1996, cited in White 2006b) visited the same site in 1996, an extremely dry year, and did not find evidence of the species that year.

The historical distribution of the species in California occurs in locations near Coyote Dry Lake, Rabbit Springs, and Calico in San Bernardino County, and in Stewart Valley in Inyo County (CDFW 2012b). There are four occurrences of Parish's phacelia in the CNDDDB (CDFW 2012b). However, the species is reported as presumed extinct (White 2006b; Smith 1997) at two of the known sites—the type location near Rabbit Springs and the Waterman's Ranch site near Calico (CDFW 2012b).

Parish's phacelia is currently known from only three sites in the planning area (CDFW 2012b; Smith 1997; White 2006b). The extant locations are the Stewart Valley, Inyo County, population discovered by F. Smith in 1995 (not recorded in CNDDDB); and the San Bernardino County collections that were made by Ripley and Barneby at Lucerne Dry Lake in 1941 (CDFW 2012b), by Bagley in 1989, by Bransfield and Rutherford in 1991, and by Sanders and Skinner in 1995 in an area southeast of Coyote Dry Lake, near the southern boundary of Fort Irwin (CDFW 2012b). Parish's phacelia was collected at the third site near Yermo, east of Barstow, by Charlton in 1992 (Smith 1997; CDFW 2012b).

Bagley's 1989 collection was made along a string of dry lakes between Manix Tank Trail and Coyote Dry Lake, about 12 miles northeast of Yermo, noting a population of several thousand plants occupying about 5 acres. Subsequent USFWS surveys of the Coyote Dry Lake population in 1991 increased the estimate to approximately 50,000 plants and, by extrapolating to the area of occupied habitat, estimated that the population could be as many as 200 million plants on approximately 247 acres (White 2006b). In a subsequent 1995 survey, collection notes by Sanders and Skinner record about 10,000 individuals in the same area (Smith 1997). Smith noted about 200 plants at the Stewart Valley site on a 5- acre area.

Charlton's 1992 collection was made east of Barstow, near Yermo on Powerline Road, near the Sunrise Canyon Road off-ramp (CDFW 2012b). According to White (2006b), the location is about 6 miles southwest of the Coyote Dry Lake site.

Known distribution data for Parish's phacelia within the WEMO Planning Area is depicted in Figure 3.4-40. Within the planning area, the CNDDDB identifies approximately 1,654 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Red Rock Poppy (*Eschscholzia minutiflora* ssp. *twisselmannii*)

Red Rock poppy is known only from the Rand and El Paso mountains in Kern and San Bernardino counties in the western Mojave Desert (CNPS 2011; Jepson Flora Project 2011). All 26 CNDDDB occurrences are in the planning area (CDFW 2012b).

For the 22 recent (i.e., since 1990) occurrences in the planning area, population size estimates total over 41,000 plants (CDFW 2012b). The type locality for this species is Red Rock Canyon. Over the years this occurrence has supported 100 plants in 1998, 8 plants in 1989–1990, approximately 16,000 plants in 1991, and the largest observed population with over 35,000 plants in 2003. This occurrence was last seen in 2005, but a population estimate was not recorded. The population in Mesquite Canyon is the second largest for the species, with an estimated 3,375 individuals in 1991

(CDFW 2012b). No additional data are available to determine its current status and population trend, but it clearly exhibits large population fluctuations. CDFW (2012a) lists the trend as unknown for all occurrences.

All 26 CNDDDB occurrences are in the planning area (CDFW 2012b). There are two historical CNDDDB occurrences in the planning area from before 1990 (CDFW 2012b). One of these is a record from 1958 located approximately 2 miles southeast of Searles Station with unknown ownership (CDFW 2012b). The other is located on Edwards Air Force Base managed by the DOD; a BLM report from 1999 states that this is a “probable occurrence,” but the identification needs verification (CDFW 2012b). Both of these occurrences are presumed to be extant (CDFW 2012b).

Twenty-four of the CNDDDB occurrences in the planning area are recent occurrences (i.e., since 1990) and are presumed to be extant. Six of these are located within Red Rock Canyon State Park, managed by the DPR. The remaining 18 are located on BLM land farther east (CDFW 2012b).

Known distribution data for Red Rock poppy within the WEMO Planning Area is depicted in Figure 3.4-41. Within the planning area, the CNDDDB identifies approximately 2,170 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Red Rock Canyon monkeyflower (*Erythranthe rhodopetra*)

Known distribution data for the Red Rock Canyon monkeyflower within the WEMO Planning Area is depicted in Figure 3.4-42. Within the planning area, the CNDDDB identifies approximately 1,680 acres within element occurrences for this species on BLM lands within the Rands and Red Mountain subregions (Table 3.4-4).

Red Rock Tarplant (*Deinandra arida*)

Red Rock tarplant is known from Red Rock Canyon and Last Chance Canyon, primarily in Red Rock Canyon State Park in Kern County, California (Faull 1987; Tanowitz 1982; CDFW 2012b). This species occurs at elevations from 300 to 950 meters (900 to 2,850 feet) (CNPS 2011).

As of 1987, according to the DPR, the Red Rock tarplant was well protected and its abundance was stable or increasing (Faull 1987). For the five occurrences within the Red Rock Canyon State Park, abundance estimates for the four 1998 CNDDDB records were 3,060 plants (1,250 plants in 1986), 2 plants, 1 plant, and 2,300 plants. The 2004 CNDDDB record abundance estimate was 3,400 plants (11,000+ in 1986). The 1993 CNDDDB record outside the Red Rock Canyon State Park does not include an estimate of plants (CDFW 2012b). No additional data are available to determine its current status and population trend.

There are six CNDDDB occurrences in the planning area, all of which are recent (status updated since 1990 [CDFW 2012b]). All of these occurrences are from Red Rock Canyon and Last Chance Canyon, and five are within the Red Rock Canyon State Park (one is located just south of the state park) (CDFW 2012b). The sixth occurrence is on BLM property (Faull 1987).

Known distribution data for Red Rock tarplant within the WEMO Planning Area is depicted in Figure 3.4-43. Within the planning area, the CNDDDB identifies approximately 69 acres of element occurrences for this species on BLM lands within the El Paso subregion (Table 3.4-4).

Robbins' nemacladus (*Nemacladus secundiflorus* var. *robbinsii*)

Known distribution data for the Robbins' nemacladus within the WEMO Planning Area is depicted in Figure 3.4-44. Within the planning area, the CNDDDB identifies approximately 661 acres within element occurrences for this species on BLM lands within the Lancaster subregion (Table 3.4-4).

Robison's Monardella (*Monardella robisonii*)

Endemic to California (Riverside and San Bernardino Counties) (CNPS 2013) and found in the Little San Bernardino Mountains (Jepson Flora Project 2013). Known occurrences within the Project Area are in the general area north of Desert Hot Springs and Yucca Valley, parts of Joshua Tree NP, and adjacent lands to the north (CNPS 2013).

Known distribution data for Robinson's monardella within the WEMO Planning Area is depicted in Figure 3.4-45. Within the planning area, the CNDDDB identifies approximately 138 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Rose-flowered larkspur (*Delphinium purpusii*)

Known distribution data for the Rose-flowered larkspur within the WEMO Planning Area is depicted in Figure 3.4-46. Within the planning area, the CNDDDB identifies approximately 481 acres within element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

San Bernardino aster (*Symphyotrichum defoliatum*)

Known distribution data for the San Bernardino aster within the WEMO Planning Area is depicted in Figure 3.4-47. Within the planning area, the CNDDDB identifies approximately 153 acres within element occurrences for this species on BLM lands within the Jawbone subregion (Table 3.4-4).

San Bernardino milk-vetch (*Astragalus bernardinus*)

Known distribution data for the San Bernardino milk-vetch within the WEMO Planning Area is depicted in Figure 3.4-48. Within the planning area, the CNDDDB identifies approximately 1,689 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Sanicle Cymopterus (*Cymopterus ripleyi* var. *saniculoides*)

Sanicle cymopterus is known from California (Inyo County) and Nevada (CNPS 2013), in the southern high Sierra Nevada Mountains, southeast of the Sierra Nevada Mountains, and in the north desert mountains (Jepson Flora Project 2013). Known occurrences within the Project Area are located to the south and east of Owens Lake (CNPS 2013).

Known distribution data for Sanicle cymopterus within the WEMO Planning Area is depicted in Figure 3.4-49. Within the planning area, the CNDDDB identifies approximately 389 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Short-joint Beavertail (*Opuntia basilaris* var. *brachyclada*)

Known distribution data for Short-joint beavertail cactus within the WEMO Planning Area is depicted in Figure 3.4-50. Within the planning area, the CNDDDB identifies approximately 25 acres of element occurrences for this species on BLM lands within the Victorville subregion (Table 3.4-4).

Spanish Needle Onion (*Allium shevockii*)

Spanish Needle onion is known from two areas in Kern County: the type locality on Spanish Needle Peak in northern Kern County, and in the Horse Canyon/Jawbone Canyon area in the Scodies Mountains area on the southeast edge of the Tehachapi Range (CDFW 2012b; CNPS 2011). The CNDDDB records 10 occurrences: one, the type locality, on Spanish Needle Peak; and nine in the Horse/Jawbone Canyon area in the Scodies Mountains (CDFW 2012b).

Spanish Needle onion has a very small global range, with relatively small numbers of plants in each occurrence. Five occurrences support fewer than 50 plants, and two contain 90 to 100 plants; however, at least 300 plants were noted in an incomplete count of the occurrence west of Horse Canyon (CDFW 2012b). Only one occurrence appears to have a substantial number of plants; this location is just west of Peak 4859 southeast of the Piute Mountains (CDFW 2012b). Eight of the nine occurrences in the planning area were considered to be in excellent condition when visited; the ninth was considered good (CDFW 2012b). There are no ongoing surveys that could provide information on population trends.

The original discovery of Spanish Needle onion was on Spanish Needle Peak just outside the planning area in BLM's Caliente RA and until relatively recently, this was the only known location. The nine Horse/Jawbone Canyon CNDDDB occurrences are in the planning area. Recent discoveries (since 1995) of Spanish Needle onion extended the range to the Tehachapi Mountains. Three occurrences are in upper Horse Canyon; one is on a ridge just west of Horse Canyon; two are in Jawbone Canyon; one is east of Miller Springs; and two are near Pine Spring (CDFW 2012b).

Of the nine occurrences of Spanish Needle onion in the planning area, five are on lands managed by BLM. About half of the population in Horse Canyon is in the BLM Horse Canyon ACEC, which was established and is managed for its cultural resources, and not botanical resources. Additionally, the majority of this ACEC (all but approximately 0.1 acre) and all of the known Spanish needle onion populations within it are located outside the planning area.

Known distribution data for Spanish Needle onion within the WEMO Planning Area is depicted in Figure 3.4-51. Within the planning area, the CNDDDB identifies approximately six acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Sweet-smelling monardella (*Monardella beneolens*)

Known distribution data for the sweet-smelling monardella within the WEMO Planning Area is depicted in Figure 3.4-52. Within the planning area, the CNDDDB identifies approximately 52 acres within element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Tehachapi monardella (*Monardella linoides* ssp. *oblonga*)

Known distribution data for the Tehachapi monardella within the WEMO Planning Area is depicted in Figure 3.4-53. Within the planning area, the CNDDDB identifies approximately 35 acres within element occurrences for this species on BLM lands within the Middle Knob subregion (Table 3.4-4).

White-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*)

Known distribution data for the White-bracted spineflower within the WEMO Planning Area is depicted in Figure 3.4-54. Within the planning area, the CNDDDB identifies approximately 996 acres within element occurrences for this species on BLM lands (Table 3.4-4).

White-margined Beardtongue (*Penstemon albomarginatus*)

White-margined beardtongue is known from only four general locations: two in the Mojave Desert of Southern Nevada, one in the Mojave Desert in California, and one in the Sonoran Desert of northwest Arizona (Smith 2001, cited in Etyemezian and others 2010).

Its distribution in California is restricted to eastern San Bernardino County (CDFW 2012b), in the following quadrangles (listed from west to east): Troy Lake, Hector, Lavic Lake, Sleeping Beauty, Ludlow, and Cadiz Summit. The majority of the 23 occurrences documented in the CNDDDB, all of which are within the planning area (CDFW 2012b), are located north of I-40, including a large population occurring in a 4-mile-long wash northeast of Pisgah Crater, extending southwest from Sleeping Beauty Peak, and terminating in a flat spreading basin south of the freeway (CDFW 2012b; MacKay 2006). The species is also found in another wash extending south-southeast from Sleeping Beauty Peak, and in a number of smaller locations mapped since 2008 west of there in the vicinity of Hector (CDFW 2012b). South of I-40, the species has been documented in the vicinity of Lavic Lake and Swede Hill (southeast of Lavic Lake) (CDFW 2012b).

Five CNDDDB occurrences were originally recorded prior to 1990, although they are all presumed extant (CDFW 2012b). The three oldest records, from 1935 to 1940, are located (1) in the vicinity of Lavic Lake; (2) south of Swede Hill, east of Lavic Lake; and (3) near the western junction of I-40 and SR 66 in the Ludlow quadrangle. These three records have not been updated since then. The two remaining records, last updated in 1989, are located (1) in the Cadiz Summit quadrangle in the vicinity of SR 66, and (2) in a wash extending south and southeast of Sleeping Beauty Peak on land managed by the BLM. The Cadiz Summit occurrence was added by the CDFW as a “best guess” based on a 1941 collection that documented white-margined beardtongue plants “between Cadiz and Danby.” The site was searched by Scogin in 1989 and later by Andre, but neither botanist observed whitemargined beardtongue in this location. Scogin noted that there is “too

much gravel cover, sand is too shallow” (CDFW 2012b). This occurrence needs additional field work.

Eighteen CNDDDB occurrences have been observed since 1990, 16 of which are documented on BLM land (CDFW 2012b). Ownership of the land for the two remaining records observed since 1990 is unknown. All 18 of these records are located east of the Newberry Springs area at the western edge of the known range of the species in California and are presumed extant.

Known distribution data for white-margined beardtongue within the WEMO Planning Area is depicted in Figure 3.4-55. Within the planning area, the CNDDDB identifies approximately 2,971 acres of element occurrences for this species on BLM lands. The amount of acres identified within each subregion is detailed above in Table 3.4-4.

Beaver dam Scurfpea/Beaver dam breadroot/ Beaver indian breadroot (*Pediomelum castoreum*)

Present in the Project Area (pers. comm. Chavez 2013). Known occurrences within the Project Area are widely distributed between Barstow and Victorville and in one area on the north side of the San Bernardino National Forest (CNPS 2013). Within the planning area, the CNDDDB identifies approximately 7,321 acres of element occurrences for this species on BLM lands (Table 3.4-4).

Boyd’s monardella (*Monardella boydii*)

Within the planning area, the CNDDDB identifies approximately 53.3 acres of element occurrences for this species on BLM lands (Table 3.4-4).

Mojave menodora (*Menodora spinescens* var. *mohavensis*)

Within the planning area, the CNDDDB identifies approximately 44,327 acres of element occurrences for this species on BLM lands (Table 3.4-4).

Piute Mountains jewelflower (*Streptanthus cordatus* var. *piutensis*)

Within the planning area, the CNDDDB identifies approximately 0 acres of element occurrences for this species on BLM lands within the Project Area, but the species has occurred within one-quarter mile of the Sierra subregion, and thus may be affected (Table 3.4-4).

Triple-ribbed milkvetch (*Astragalus tricarinatus*)

Within the planning area, the CNDDDB identifies approximately 210.8 acres of element occurrences for this species on BLM lands in the Sand to Snow National Monument (Table 3.4-4). Known distribution data for triple-ribbed milkvetch within the WEMO Planning Area is depicted in Figure 3.4-56.

3.4.3.2 Wildlife Species

A total of 50 special status wildlife species were identified as potentially occurring within the planning area (BLM 2005, 2013a,b; Dudek and ICF International 2012). These species, their associated habitats, and their potential for occurrence within the study area are summarized in Appendix E, Special Status Species. The potential for each of the 50 species to be affected by the proposed action or alternatives was evaluated for each species based on their known distribution and suitable habitat within the planning area. Based on these evaluations, 28 special status wildlife species have been determined as not affected by the proposed action or alternatives based on their known distributions as discussed in Appendix E, Special Status Species. Potential occurrence for the remaining 22 species were identified by the locations of element occurrences on BLM lands as determined by the CNDDDB, designated Critical Habitat, known nest locations provided by BLM biologists, ACECs, and other known population data (i.e., core areas). The total acreage of potential occurrence for each of the 22 species by subregion are listed in Table 3.4-5 and are discussed in detail below for each species.

Table 3.4-5. Acres of Identified Special Status Wildlife Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
Afton Canyon	AC	Golden eagle	4 Mile Buffer	6,098.9
		Mojave fringe-toed lizard	BLM ACEC	2,893.2
		Nelson's bighorn sheep	CNDDDB	626.3
		Pallid bat	CNDDDB	17.4
		Southwestern pond turtle	BLM Staff Observation	1.0
Barstow	BA	Burrowing owl	CNDDDB	2.0
		Desert tortoise	Critical Habitat	638.9
		Golden eagle	4 Mile Buffer	1,613.8
		Pallid Bat	CNDDDB	37.4
		Mojave fringe-toed lizard	BLM ACEC	3,337.0
		Le Conte's thrasher	BLM Designated Habitat	86.2
Black Mountain	BM	Desert tortoise ¹	Critical Habitat	93,025.4
			DT ACEC	44,629.1
		Golden eagle	4 Mile Buffer	26,572.6
		Mohave ground squirrel	Core Areas	2,050.2
		Bendire's thrasher	BLM Designated Habitat	1,403.1
Broadwell Lake	BL	Bendire's thrasher	BLM Designated Habitat	4.9
		Burrowing owl	CNDDDB	9.9
		Golden eagle	4 Mile Buffer	3,703.8
		Mojave fringe-toed lizard	CNDDDB	17.1
		Nelson's bighorn sheep	CNDDDB	734.1
Calico Mountains	CM	Golden eagle	4 Mile Buffer	2,320.1
		Le Conte's thrasher	BLM Designated Habitat	38.7

Table 3.4-5. Acres of Identified Special Status Wildlife Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
		Desert tortoise	Critical Habitat	29,123.2
			DT ACEC	28,503.5
Coolgardie	CG	Le Conte's thrasher	BLM Designated Habitat	49.3
		Mohave ground squirrel	Core Areas	31,720.0
		Desert tortoise	Critical Habitat	81,730.4
DT ACEC	65,346.3			
Cronese Lake	CL	Golden eagle	4 Mile Buffer	5,250.5
		Desert tortoise	Critical Habitat	80,294.0
			DT ACEC	77,565.1
Mojave fringe-toed lizard	CNDDDB	5,332.4		
Darwin	DA	Nelson's bighorn sheep	CNDDDB	310.9
		Le Conte's thrasher	BLM Designated Habitat	276.5
		Pallid bat	CNDDDB	13.4
El Mirage	EM	Desert tortoise	Critical Habitat	27,091.5
			DT ACEC	29,169.2
El Paso	EP	Burrowing owl	CNDDDB	4.9
		Desert tortoise	Critical Habitat	67.9
			MGS ACEC as surrogate for DT habitat ²	8,800.7
		Golden eagle	4 Mile Buffer	42,067.7
		Le Conte's thrasher	BLM Designated Habitat	31.0
		Mohave ground squirrel	Core Areas	27,206.9
			Leitner Population	2,698.3
Other Known Populations	259.4			
Fremont Peak	FP	Golden eagle	4 Mile Buffer	12,544.8
		Desert tortoise	Critical Habitat	72,895.0
			DT ACEC	53,838.1
		Mohave ground squirrel	Leitner Population	28,194.8
Other Known Populations	13,339.0			
Harper Lake	HL	Desert tortoise	Critical Habitat	27,274.7
			DT ACEC	40,538.4
		Golden eagle	4 Mile Buffer	174.9
		Mohave ground squirrel	Leitner Population	3,049.0
		Mojave fringe-toed lizard	CNDDDB	4,943.6
Burrowing owl	CNDDDB	935.5		
Iron Mountain	IM	Burrowing owl	CNDDDB	6.1
		Desert tortoise	Critical Habitat	8,480.1
			DT ACEC	17,122.5

Table 3.4-5. Acres of Identified Special Status Wildlife Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
		Mohave ground squirrel	Leitner Population	1,060.3
Jawbone	JB	Bendire's thrasher	BLM Designated Habitat	13,254.3
		Burrowing owl	CNDDDB	59.2
		Golden eagle	4 Mile Buffer	81,543.5
		Le Conte's thrasher	BLM Designated Habitat	238.4
		Mohave ground squirrel	Core Areas	54,477.4
		Desert tortoise	MGS Core Areas as surrogate DT habitat ²	54,477.4
			MGS ACEC as surrogate DT habitat ²	345.96
Pallid bat	CNDDDB	776.1		
Johnson Valley	JV	Golden eagle	4 Mile Buffer	47,555.2
		Le Conte's thrasher	BLM Designated Habitat	101.9
		Western mastiff bat	CNDDDB	154.4
		Desert tortoise	Critical Habitat	4,915.3
			DT ACEC	173.4
Joshua Tree	JT	Nelson's bighorn sheep	CNDDDB	8,261.0
		Desert tortoise	Critical Habitat	103,007.9
			DT ACEC	107,979.5
		Mojave fringe-toed lizard	BLM ACEC	1,418.3
		Pallid bat	CNDDDB	5.0
Juniper Flats	JF	Golden eagle	4 Mile Buffer	14,227.4
		Townsend's big-eared bat	CNDDDB	3.3
Kramer Hills	KH	Mohave ground squirrel	Leitner Population	8,050.4
		Desert tortoise	DT ACEC	65,682.5
			Critical Habitat	65,684.4
Lancaster	LA	Golden eagle	4 Mile Buffer	40.9
		Desert tortoise	Critical Habitat	1,369.2
			DT ACEC	1,366.1
			MGS ACEC as surrogate for DT habitat ²	138.0
		Le Conte's thrasher	BLM Designated Habitat	1.2
		Mohave ground squirrel	Core Areas	126.0
		Townsend's big-eared bat	CNDDDB	2.5
Mojave Trails National Monument	MT	Desert tortoise	Critical Habitat	1,195.9
			DT ACEC	159.7
		Fringed myotis	CNDDDB	4.9

Table 3.4-5. Acres of Identified Special Status Wildlife Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
		Golden eagle	4 Mile Buffer	113,521.7
		Le Conte's thrasher	BLM Designated Habitat	4.6
		Mojave fringe-toed lizard	BLM ACEC	13,562.2
			CNDDDB	13,153.2
		Pallid bat	CNDDDB	5.0
		Nelsons bighorn sheep	CNDDDB	55,736.4
Middle Knob	MK	Golden eagle	4 Mile Buffer	30,968.4
		Burrowing owl	CNDDDB	0.8
		Desert Tortoise	MGS ACEC as surrogate for DT habitat ²	255.1
		Le Conte's thrasher	BLM Designated Habitat	15.3
		Townsend's big-eared bat	CNDDDB	647.1
Mitchel Mountains	MM	Golden eagle	4 Mile Buffer	5,516.3
		Desert tortoise	Critical Habitat	13,925.3
			DT ACEC	13,892.8
Newberry-Rodman	NR	Golden eagle	4 Mile Buffer	68,763.1
		Desert tortoise	Critical Habitat	101,358.8
			DT ACEC	104,281.3
		Mojave fringe-toed lizard	CNDDDB	1,598.1
		Nelson's bighorn sheep	CNDDDB	24,730.1
North Searles	NS	Le Conte's thrasher	BLM Designated Habitat	4,762.9
		Mohave ground squirrel	Leitner Population	15,325.5
		Desert tortoise	MGS Leitner Population area as surrogate DT habitat ²	15,325.5
			MGS ACEC as surrogate for DT habitat ²	12,545.4
		Nelson's bighorn sheep	CNDDDB	31,308.2
		Townsend's big-eared bat	CNDDDB	53.9
		Pallid bat	CNDDDB	25.1
		Western small-footed myotis	CNDDDB	25.1
Ord Mountains	OM	Burrowing owl	CNDDDB	1.7
		Desert tortoise	Critical Habitat	106,573.9
			DT ACEC	100,245.4
		Golden eagle	4 Mile Buffer	109,200.7
		Nelson's bighorn sheep	CNDDDB	879.1
Rands	RA	Burrowing owl	CNDDDB	69.1
		Desert tortoise	Critical Habitat	52,676.2

Table 3.4-5. Acres of Identified Special Status Wildlife Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
			DT ACEC	20,552.0
			MGS ACEC as surrogate for DT habitat ²	78.1
		Golden eagle	4 Mile Buffer	49,734.9
		Gray vireo	CNDDDB	69.2
		Le Conte's thrasher	BLM Designated Habitat	1.1
		Mohave ground squirrel	Leitner Population	10,262.7
			Other Known Populations	18,409.0
		Pallid bat	CNDDDB	1,156.5
		Spotted bat	CNDDDB	12.9
Rattlesnake Canyon	RC	Bendire's thrasher	CNDDDB	34.6
		Golden eagle	4 Mile Buffer	20,401.8
		Le Conte's thrasher	BLM Designated Habitat	5.3
Red Mountain	RM	Golden eagle	4 Mile Buffer	25,445.0
		Desert tortoise	Critical Habitat	107,489.9
			DT ACEC	110,084.7
			MGS ACEC as surrogate for DT habitat ²	3,132.2
		Mohave ground squirrel	Leitner Population	13,006.5
			Other Known Populations	28,486.7
Ridgecrest	RI	Golden eagle	4 Mile Buffer	2,595.8
		Le Conte's thrasher	BLM Designated Habitat	118.7
		Mohave ground squirrel	Leitner Population	14,405.3
			Other Known Populations	14,276.2
		Desert tortoise	DT ACEC	2.3
			MGS ACEC as surrogate for DT habitat ²	20,980.7
Sand to Snow National Monument	S2S	Pallid Bat	CNDDDB	416.1
		Nelsons bighorn sheep	CNDDDB	6158.6
		Least Bell's vireo	CNDDDB	1441.2
Sierra	SI	Golden eagle	4 Mile Buffer	137,180.7
		Burrowing owl	CNDDDB	751.7
		Le Conte's thrasher	BLM Designated Habitat	1,967.5
		Least Bell's vireo	CNDDDB	27.8
		Desert tortoise	MGS Core Areas as surrogate DT habitat ²	31,960.5
			MGS ACEC as surrogate for DT habitat ²	54,372.1
		Mohave ground squirrel	Core Areas	31,960.5

Table 3.4-5. Acres of Identified Special Status Wildlife Species Potential Occurrence on BLM Lands within the WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Species	Potential Occurrence Type	Sum of Acres
		Northern sagebrush lizard	CNDDDB	9.9
		Swainson's hawk	CNDDDB	68.6
		Townsend's big-eared bat	CNDDDB	964.0
South Searles	SS	Desert tortoise	MGS ACEC as surrogate for DT habitat ²	47,219.1
		Bendire's thrasher	BT ACEC	9,772.37
		Mohave ground squirrel	Other Known Populations	6,952.6
Stoddard Valley	SV	Bendire's thrasher	BLM Designated Habitat	214.6
		Burrowing owl	CNDDDB	10.6
		Golden eagle	4 Mile Buffer	85,157.9
		Le Conte's thrasher	BLM Designated Habitat	1,849.5
		Mojave fringe-toed lizard	CNDDDB	3.6
		Western mastiff bat	CNDDDB	63.7
		Desert tortoise	DT ACEC	0.1
Victorville	VV	Desert tortoise	Critical Habitat	334.4
			DT ACEC	334.4
		Western mastiff bat	CNDDDB	47.4
Wonder Valley	WV	Bendire's thrasher	BLM Designated Habitat	0.1
		Desert tortoise	DT ACEC	2.2
		Le Conte's thrasher	BLM Designated Habitat	9.2
		Mojave fringe-toed lizard	CNDDDB	447.7
			BLM ACEC	1,223.3
Nelson's bighorn sheep	CNDDDB	6,663.7		

1 Instances where a species is shown with acreage from more than one source, the sources may overlap. Acreage therefore may be duplicated in some places.

2 Desert tortoises, in general, occupy similar habitat to the Mojave ground squirrel in the northern part of the planning area.

Additionally, 20 species were not included in the 2005 WEMO Final EIS (BLM 2005), but are in this FSEIS since they are considered to potentially occur within the planning area based on recent documentation (Dudek 2013 and ICF International 2012) and consultation with BLM biologists. These species include the:

- Hoary Bat
- Western Red Bat
- Fringed Myotis
- Western Small-footed Myotis
- American Peregrine Falcon
- Least Bell's Vireo
- Mountain Plover
- Swainson's Hawk
- Tricolored Blackbird
- White-tailed Kite

- Bald Eagle
- Bank Swallow
- California Condor
- Greater Sandhill Crane
- Southwestern Pond Turtle
- Yuma Clapper Rail
- Mojave Tui Chub
- Northern Sagebrush Lizard
- Tehachapi Slender Salamander
- Arroyo Toad

3.4.3.2.1 Mammals

Mohave Ground Squirrel

Endemic to California, the Mohave ground squirrel is exclusively found in the northwestern Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo counties (Best 1995). The presumed historical range of the Mohave ground squirrel within the northwestern Mojave Desert was bounded on the south and west by the San Gabriel, Tehachapi, and Sierra Nevada mountain ranges; on the northeast by Owens Lake, and the Coso Slate, Quail, Granite and Avawatz mountains; and on the east and southeast by the Mojave River (Leitner 2008; MGSWG 2011). In addition, the species was historically found in one locality east of the Mojave River in the Lucerne Valley. Its historic range covered about 20,000 square kilometers (km²) (7,722 square miles (mi²)) (Gustafson 1993), which is the smallest geographic range of any ground squirrel species in the United States. However, for the 12-month finding for the species published in October 2011, USFWS used a somewhat larger historical range of approximately 21,525 km² (8,311 mi²) (76 FR 62214– 62258). USFWS also stated in the 12-month finding that the range of the Mohave ground squirrel may be larger than defined in the finding or previously published based on recent sightings such as in an interior valley of the Tehachapi Mountains and in the Panamint Valley about 8 kilometers (5 miles) north of the defined range (76 FR 62214–62258).

Conversion of native desert habitats has likely resulted in the extirpation of Mohave ground squirrel from west of Palmdale and Lancaster where it likely occupied the Antelope Valley historically, but which has experienced rapid growth in recent decades (Laabs 2006; Leitner 2008). There are no recent records or observations from the southern portion of its range, between Palmdale and Lucerne Valley, suggesting that Mohave ground squirrel may have been extirpated in this highly developed area (Laabs 2006). Approximately 46% of the California Natural Diversity Database (CNDDDB) records for the Mohave ground squirrel are historic or have no date. These records are located throughout the species' range (CDFW 2011).

The current range is reduced from the historic range as a result of the likely extirpation of the Mohave ground squirrel in the western portion of the Antelope Valley and potentially south of Victorville and southeast to Lucerne Valley (MGSWG 2011). Habitat for the species has been reduced by development of agricultural uses, grazing, urbanization, military activities, energy production, and recreation (MGSWG 2011). The current occupied range is estimated to be about 19,000 km² (6,640 mi²) (MGSWG 2011).

The occurrence of Mohave ground squirrel is likely to be patchy within its range, even within apparently suitable habitat (MGSWG 2011). However, as noted by Leitner (2008), occurrence records tend to be concentrated in certain areas where trapping studies have been focused; these studies are discussed in more detail below. There has not been a systematic, range-wide census or statistically based random sampling study to determine occupation throughout the species' range

(Leitner 2008). About 88% of the geographic area of known existing populations of the species, based on Leitner (2008), occur in the planning area (only a portion of the Coso Range-Olancha Core population is outside this area).

Recent (after 1990) records from the CNDDDB and 2005 West Mojave Plan Mohave ground squirrel transect data and other California Department of Fish and Wildlife (CDFW) data include location occurrences ranging from Inyo in the north to 3 miles southwest of Rabbit Lake in the south. The eastern extent ranges to the Granite Mountains and Fort Irwin and the westernmost record is just east of Oak Creek (Dudek 2011).

Leitner (2008) provides the most current status of the Mohave ground squirrel based on compilation of a database, including unpublished field studies, surveys, and incidental observations for the 10-year period from 1998 through 2007. This database includes 1,140 trapping sessions, of which 102 resulted in observation of the species, and 96 additional incidental observations. Most of these studies and observations have been conducted in the southern part of the species' range south of State Route 58 and no range-wide systematic or statistically based random sampling has been conducted to characterize the species' status throughout its range. Leitner (2008) emphasizes that there are large areas of potential habitat where the species' status is unknown, especially on the China Lake Naval Air Weapons Station and Fort Irwin. Data compiled by Leitner within the planning area is detailed in Table 3.4-6 by subregion and shown in Figure 3.4-57.

Table 3.4-6. Acres of Leitner Data for the Mohave Ground Squirrel within the Planning Area¹

Subregion	Subregion Abbreviation	Name	Sum of Acres
North Searles	NS	North Searles Valley	15,337.4
Fremont Peak	FP	Boron Extension	3,522.7
		Harper Lake	24,693.5
Harper Lake	HL	Harper Lake	3,051.4
Iron Mountain	IM	Harper Lake	1,061.1
Kramer Hills	KH	Harper Lake	8,056.5
El Paso	EP	Fremont Valley/ Teagle	2,700.2
Rands	RA	Boron Extension	8.0
		Fremont Valley/ Teagle	10,261.8
Red Mountain	RM	Boron Extension	3,963.2
		Fremont Valley/ Teagle	9,052.6
Ridgecrest	RI	Fremont Valley/ Teagle	14,415.7
Total			96,124

¹Data overlaps with Leitner data and Core Areas for the Mohave Ground Squirrel

In addition to the Leitner data above, other known populations have been documented by BLM biologists. The occurrences of other known Mohave ground squirrel populations within the planning area are detailed in Table 3.4-7 and shown in Figure 3.4-57.

Table 3.4-7. Acres of Mohave Ground Squirrel Other Known Population Data within the Planning Area¹

Subregion	Subregion Abbreviation	Name	Sum of Acres
South Searles	SS	Ridgecrest	6,957.9
Fremont Peak	FP	Boron/ Kramer Junction	13,348.8
El Paso	EP	Ridgecrest	259.6
Rands	RA	Boron/ Kramer Junction	1,451.0
		Desert Tortoise Natural Area	16,969.7
Red Mountain	RM	Boron/ Kramer Junction	10,221.7
		Pilot Knob	18,286.7
Ridgecrest	RI	Ridgecrest	14,286.5
Total			81,781.9

¹Data overlaps with Leitner data and Core Areas for the Mohave ground squirrel

²NA = BLM lands outside designated subregion boundaries within the WEMO Planning Area.

The 2005 WEMO Final EIS details that available data suggest that local MGS populations follow a “boom and bust” cycle, where they expand into habitats when conditions are favorable, and shrink back into core areas when conditions are less favorable, particularly when conditions such as drought occur over a several-year period. Approximately 179,619 acres of core area have been identified for this species within the planning area (Table 3.4-8, Figure 3.4-57).

Table 3.4-8. Acres of Mohave Ground Squirrel Core Area within the Planning Area¹

Subregion	Subregion Abbreviation	Core Area Name	Sum of Acres
Black Mountain	BM	Coolgardie Mesa-Superior Valley	2,051.8
Coolgardie	CG	Coolgardie Mesa-Superior Valley	31,745.3
El Paso	EP	Little Dixie Wash	27,224.3
Jawbone	JB	Little Dixie Wash	54,509.8
Lancaster	LA	Edwards Air Force Base	126.1
Sierra	SI	Coso Range-Olancha	63,164.9
		Little Dixie Wash	796.7
Total			179,618.9

¹Data overlaps with Leitner data and Core Areas for the Mohave Ground Squirrel

²NA = BLM lands outside designated subregion boundaries within the WEMO Planning Area.

Bats

Within the planning area, the CNDDDB identifies approximately 3,495 acres of element occurrences for these species on BLM lands (Figure 3.4-58). The amount of acres identified within each subregion is detailed above in Table 3.4-5. All other known occurrence data for the spotted bat, pallid bat, and western mastiff bat would not change from the previous analysis included in the

affected environment of the 2005 WEMO Final EIS (BLM 2005) and is not discussed further in this supplemental EIS. For a general discussion of this species, please refer to Section 3.3.4, pp. 3-169 to 3-170. Potential to occur within the area that could be affected by the proposed action or alternatives was evaluated based on the location of known mine sites.

Nelson's Bighorn Sheep

The CDFW (2010a) prepared the *Biennial Report to the Legislature Regarding Bighorn Sheep Management* pursuant to Section 4094 of the California Fish and Wildlife Code. This report summarizes census information related to long-term management of bighorn sheep (including the authorization of hunting tags) and includes sheep counts in specific management units in 2009 and 2010. The distribution of bighorn sheep is grouped by a regional system of subpopulations (or metapopulations) based on natural physical features such as geography and vegetation that affect species occurrence, as well as manmade obstacles that affect distribution, such as freeways (CDFW 2010c). Aerial surveys in 2009 and 2010 documented 1,022 bighorn sheep, including ewes, lambs, and rams, in the following mountain ranges: Marble Mountains; Clipper Mountains; Kelso Peak and Old Dad Peak; Clark, Kingston, and Mesquite Mountains; Orocopia Mountains; Sheephole Mountains; South Bristol Mountains; Cady Mountains; White Mountains; and San Gorgonio Mountains. The 1,022 individuals represent minimum populations in these areas because they were only animals actually observed; population size is assumed to be larger (CDFW 2010c). The CDFW (2010c) report included the Peninsular bighorn sheep metapopulation, with an estimate of about 950 adults and recruited lambs among the nine distinct subpopulations as of December 2010.

Within the planning area, the CNDDDB identifies approximately 136,350 acres of element occurrences for this species on BLM lands (Figure 3.4-59). The amount of acres identified within each subregion is detailed above in Table 3.4-5.

3.4.3.2.2 Birds

Southwestern Willow Flycatcher

In addition to the known breeding sites documented in the 2005 WEMO Final EIS (Section 3.3.6.11, pp. 3-178 to 3-179), the CNDDDB contains one historical (i.e., pre-1990) occurrence for the southwestern willow flycatcher located north of Independence in Inyo County (CDFW 2012b). Four additional historical occurrences for willow flycatchers (subspecies not identified) are located in the vicinity of the cities of Mojave and California City (Dudek 2011). Critical habitat established along the Mojave River is situated within the Plan Area (70 FR 60886–61009). There are approximately 2,025 acres of Critical Habitat identified in the Plan Area in the subregions of Juniper Flats, Stoddard Valley, and Victorville. Within the planning area, the CNDDDB identifies approximately 17.5 acres of element occurrences for this species (Figure 3.4-60) within the subregions of Juniper Flats and Victorville. However, Critical Habitat and CNDDDB element occurrences do not overlap with any BLM lands within the subregions identified and are, therefore, not detailed in Table 3.4-5.

Western Yellow-billed Cuckoo

The CNDDDB contains 29 historical (i.e., pre-1990) occurrence records dating from 1917 to 1986. Of the known occurrences, 26 are from 3 years: 1977 (13), 1983 (2), and 1986 (11). Single known occurrences are from 1917, 1945, 1964, and 1978. Of the historical known occurrences in the Plan Area, 23 are from the LCR, with 14 known occurrences from Imperial County, ranging from the Palo Verde area to the U.S.–Mexico border; 6 from eastern Riverside County in the Blythe area; and 2 from San Bernardino County in the Needles area. Five of the historical known occurrences are from the Amargosa River, Tecopa, China Ranch, and Independence areas in Inyo County, and 2 are from the Mojave River in the Upper Narrows and Hodge areas in San Bernardino County. Of 29 historical known occurrences, 22 are on public land and 7 are on private land.

Within the planning area, the CNDDDB identifies approximately 138 acres of element occurrences for this species (Figure 3.4-61) within the subregions of Iron Mountain, Juniper Flats and Victorville. However, these CNDDDB element occurrences do not overlap with any BLM lands within the subregions identified and are, therefore, not detailed in Table 3.4-5.

Bendire's Thrasher

The CNDDDB identifies approximately 14,918 acres within element occurrences for this species within the planning area on BLM lands (Figure 3.4-62). The amount of acres identified within each subregion is detailed above in Table 3.4-5. In addition, approximately 11,710 acres has been designated as the Bendire's Thrasher ACEC to protect suitable Bendire's thrasher habitat between the Jawbone and Stoddard Valley Subregions (Figure 3.4-62).

Burrowing Owl

In California, the burrowing owl's range extends throughout the lowlands from the northern Central Valley to the U.S.–Mexico border, with large populations in the Imperial Valley region of southeast California (Gervais and others 2008) and a small (perhaps extirpated) population in the Great Basin bioregion in northeast California (Cull and Hall 2007). The species' distribution and abundance vary considerably throughout its range (DeSante and others 2007; Wilkerson and Siegel 2010). Breeding burrowing owls are absent from the coast north of Sonoma County and from high mountain areas, such as the Sierra Nevada and the Transverse Ranges extending east from Santa Barbara County to San Bernardino County (Gervais and others 2008).

In addition to the statistics provided in Section 3.3.6.3, pg. 3-174 of the 2005 WEMO Final EIS (BLM 2005), burrowing owls occur across most of the Mojave and Sonoran deserts of Inyo, eastern Kern, northern Los Angeles, San Bernardino, eastern Riverside, eastern San Diego, and Imperial counties (Miller 2003, references therein). Garrett and Dunn (1981) described the species as “quite scarce” from Inyo County south through the eastern Mojave Desert. Greater abundance exists in the western Mojave Desert (Bureau of Land Management [BLM] 2005) where Wilkerson and Siegel (2010) recently estimated that 560 breeding pairs (approximately 6% of the California population) reside. However, with the exception of agricultural areas in the Imperial Valley, planning area-wide, regional numbers are low and occupied areas are widely scattered, which is likely typical for this species in desert systems (Gervais and others 2008). Some northerly birds may also move south into the planning area but the seasonality, magnitude and geographic pattern (if any) of the apparent winter influx from more northerly breeders is also poorly documented (BLM 2005).

Within the planning area, the CNDDDB identifies approximately 1,857 acres of element occurrences for this species on BLM lands (Figure 3.4-63). The amount of acres identified within each subregion is detailed above in Table 3.4-5.

Golden Eagle

There are golden eagle historical occurrences throughout the planning area, but with concentrations in the west Mojave, the region between Victorville and Barstow east on I-15, the Mojave National Preserve, and the eastern portion of Joshua Tree National Park. The BLM identified “Key Raptor Areas” for golden eagles encompassing the Granite, El Paso, Newberry, and Red mountains (Raptor Research Foundation 1989), as well as important occupied habitat in the Clark Mountain Range and Calico Mountains.

A 4 mile buffer was placed around known golden eagle nest sites in the vicinity of the alternatives (Figure 3.4-64). The 4 mile buffer replaces the 0.5 mile buffer used in the DSEIS, based on conservation and management actions from the 2016 DRECP LUPA. Results in the DSEIS for the 0.5 mile buffer, estimate 28,624 acres affected within the proposed action. Moreover, increasing the buffer from 0.5 miles to 4 miles in the FSEIS increases the affected acres to 880,784 (Table 3.4-5). This results in a difference of 852,160 affected acres from the DSEIS to the FSEIS.

Table 3.4-9. Acres of Suitable Golden Eagle Habitat based on a 4 Mile Buffer Around Known Nest Sites within WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Sum of Acres
Afton Canyon	AC	6,098.9
Barstow	BA	1,613.8
Broadwell Lake	BL	3,703.8
Black Mountain	BM	26,572.6
Cronese Lake	CL	5,250.5
Calico Mountain	CM	2,320.1
El Paso	EP	42,067.7
Fremont Peak	FP	12,544.8
Harper Lake	HL	174.9
Jawbone	JB	81,543.5
Juniper Flats	JF	14,227.4
Johnson Valley	JV	47,555.2
Lancaster	LA	40.9
Middle Knob	MK	30,968.4
Mitchel Mountains	MM	5,516.3
Mojave Trails NM	MT	113,521.7
Newberry-Rodman	NR	68,763.1
Ord Mountains	OM	109,200.7
Rands	RA	49,734.9
Rattlesnake Canyon	RC	20,401.8

Table 3.4-9. Acres of Suitable Golden Eagle Habitat based on a 4 Mile Buffer Around Known Nest Sites within WEMO Planning Area by Subregion

Subregion	Subregion Abbreviation	Sum of Acres
Ridgecrest	RI	2,595.8
Red Mountain	RM	25,445.0
Sierra	SI	137,180.7
Stoddard Valley	SV	85,157.9
Total		880,783.90

Gray Vireo

Known distribution data for the gray vireo within the WEMO Planning Area is depicted in Figure 3.4-65. Within the planning area, the CNDDDB identifies approximately 69 acres of element occurrences for this species on BLM lands within the Rands subregion (Table 3.4-5).

LeConte’s Thrasher

Within the planning area, the CNDDDB identifies approximately 9,560 acres of element occurrences for this species on BLM lands (Figure 3.4-66). The amount of acres identified within each subregion is detailed above in Table 3.4-5.

Bell’s Vireo (Least Subspecies)

There are multiple historical occurrences of least Bell’s vireo in Inyo County in the northern portion of the planning area, and in the southern portion of the planning area adjacent to the western boundary of Joshua Tree National Park. Recent occurrence records of least Bell’s vireo in the planning area in the following areas: near Lancaster and Palmdale, north of Hesperia, north of Victorville, and southwest of Yucca Valley (CDFW 2012b; Dudek 2011).

Within the planning area, the CNDDDB identifies approximately 1,469 acres of element occurrences for this species on BLM lands (Figure 3.4-67). The amount of acres identified within each subregion is detailed above in Table 3.4-5.

Swainson’s Hawk

There are multiple historical occurrence records in the planning area located east of Lancaster, north of Fremont Wash and east of SR 395 (CDFW 2012b; Dudek 2011). Recent Swainson’s hawk breeding populations inside the planning area have occurred in the Antelope Valley and Owens River Valley. The vast majority of these occurrences are clustered in the western Mojave region along the base of the San Gabriel and Tehachapi mountain ranges and in Antelope Valley. Scattered occurrences are located in the Fremont Valley and the Ridgecrest/China Lake Naval Air Weapons Station.

Known distribution data for Swainson’s hawks within the WEMO Planning Area is depicted in Figure 3.4-68. Within the planning area, the CNDDDB identifies approximately 69 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-5). The species

is also found in the Jawbone and Middle Knob subregions, and nesting habitat is present in the Antelope Valley.

California Condor (*Gymnogyps californianus*)

The California condor occurs principally along the western edges of the WEMO Planning Area, specifically within the Tehachapi Mountains in the Antelope Valley Subregion, where they fly over and may forage. No nests have been documented in the planning area, with the closest nest in the Tejon Ranch area.

3.4.3.2.3 Reptiles and Amphibians

Desert Tortoise

It is anticipated that the desert tortoise will occur throughout the planning area, although its abundance may vary locally due to habitat characteristics, including anthropocentric disturbances. In addition to the information detailed in Section 3.3.2.4 (Subsections 3.3.2.4.1 to 3.3.2.4.2), historical information for the Mojave population densities or abundance does not exist to provide a baseline for population trends (USFWS 2008). Long-term study plots and other studies, however, suggest “appreciable declines” at the local level in many areas, and that the identified downward trend of the species in the western portion of the range at the time of the federal listing as threatened in 1990 was valid and is ongoing (USFWS 2008). Results of studies in other parts of the Mojave population’s range also are inconclusive, but suggest that declines are broadly distributed across the desert tortoise’s Mojave Desert range (USFWS 2008). In addition, specific management actions over a 23-year monitoring program have not demonstrated a substantial positive effect on populations, although the life history of the species (i.e., delayed reproductive maturity, low reproductive rates, and relatively high mortality early in life) is such that rapid increases in populations are unlikely to be observed (USFWS 2008). The population of desert tortoise in the West Mojave Recovery Unit, which encompasses the WEMO Planning Area, shows a downward trend (population estimate of 35,777 individuals in 2004 to 17,644 individuals in 2014). See *Status of the Desert Tortoise and Critical Habitat*, http://www.fws.gov/nevada/desert_tortoise/documents/misc/status-desert-tortoise.pdf posted February 10, 2014.

Approximately 979,153 acres of designated Critical Habitat exists within the planning area (Table 3.4-10 and Figure 3.4-69).

Table 3.4-10. Acres of Desert Tortoise Designated Critical Habitat on BLM Lands within the WEMO Planning Area per Subregion

Subregion	Subregion Abbreviation	Sum of Acres
Barstow	BA	638.9
Black Mountain	BM	93,025.4
Calico Mountains	CM	29,123.2
Coolgardie	CG	81,730.4
Cronese Lake	CL	80,294.0
El Mirage	EM	27,091.5
El Paso	EP	67.9

Table 3.4-10. Acres of Desert Tortoise Designated Critical Habitat on BLM Lands within the WEMO Planning Area per Subregion

Subregion	Subregion Abbreviation	Sum of Acres
Fremont Peak	FP	72,895.0
Harper Lake	HL	27,274.7
Iron Mountain	IM	8,480.1
Johnson Valley	JV	4,915.3
Joshua Tree	JT	103,007.9
Kramer Hills	KH	65,684.4
Lancaster	LA	1,369.2
Mitchel Mountains	MM	13,925.3
Mojave Trails NM	MT	1,195.9
Newberry-Rodman	NR	101,358.8
Ord Mountains	OM	106,573.9
Rands	RA	52,676.2
Red Mountain	RM	107,489.9
Stoddard Valley	SV	0.3
Victorville	VV	334.4
Total		979,152.6

¹NA = BLM lands outside designated subregion boundaries within the WEMO Planning Area.

Additionally, DT ACECs located within the planning area will be used to analyze potential effects to the desert tortoise. The planning area includes approximately 881,984 acres of DT ACECs (Table 3.4-11 and Figure 3.4-69). Table 3.4-12 depicts the acreages of grazing allotment in DT ACECs.

Table 3.4-11. Acres of DT ACEC Habitat on BLM Lands within the WEMO Planning Area per Subregion

Subregion	Subregion Abbreviation	DT ACEC Name	Sum of Acres
Black Mountain	BM	Fremont-Kramer	856.8
		Superior-Cronese	43,807.3
Calico Mountains	CM	Superior-Cronese	28,503.5
Coolgardie	CG	Superior-Cronese	65,346.3
Cronese Lake	CL	Superior-Cronese	77,565.1
El Mirage	EM	Fremont-Kramer	29,169.2
Fremont Peak	FP	Fremont-Kramer	51,813.5
		Superior-Cronese	2,065.4
Harper Lake	HL	Fremont-Kramer	404.1
		Superior-Cronese	40,166.5
Iron Mountain	IM	Fremont-Kramer	8,485.3

Table 3.4-11. Acres of DT ACEC Habitat on BLM Lands within the WEMO Planning Area per Subregion

Subregion	Subregion Abbreviation	DT ACEC Name	Sum of Acres
		Superior-Cronese	8,650.6
Johnson Valley	JV	Ord-Rodman	173.4
Joshua Tree	JT	Pinto Mountains	107,979.5
Kramer Hills	KH	Fremont-Kramer	65,682.5
Lancaster	LA	Fremont-Kramer	1,366.1
Mitchel Mountains	MM	Superior-Cronese	13,892.8
Mojave Trails NM	MT	Pinto Mountains	159.7
Newberry-Rodman	NR	Ord-Rodman	104,281.3
Ord Mountain	OM	Ord-Rodman	100,245.4
Rands	RA	Fremont-Kramer	20,552.0
Red Mountain	RM	Fremont-Kramer	59,765.4
		Superior-Cronese	50,402.3
Ridgecrest	RI	Fremont-Kramer	2.3
Victorville	VV	Fremont-Kramer	334.4
Total			881,983.9

Table 3.4-12. Acres of Grazing Allotments in DT ACECs

Special Designation Unit	Cantil Common	Ord Mountain	Shadow Mountain	Total Acres
Fremont-Kramer DT ACEC	6,726	0	3,323	10,049
Ord-Rodman DT ACEC	0	107,779	0	107,779
Totals	6,726	107,779	3,323	117,828

The BLM, with assistance from the Desert Tortoise Preserve Committee, established the Desert Tortoise Research Natural Area (DTRNA) in 1976. The DTRNA is managed to protect this unique habitat in its natural state, free from conflict with other land uses. Located in the western Mojave Desert in northeastern Kern County, the DTRNA was designated as an ACEC in 1980 through the California Desert Conservation Area Plan. The total area encompasses over 25,000 acres of public land. Approximately 22,216 acres of the DTRNA ACEC are located within the Rands subregion of the planning area (Figure 3.4-69).

Mojave Fringe-toed Lizard

Historically, this species was known to occur throughout the windblown sand areas within the present and historical Mojave river drainage and associated sand fields. The Mojave River Drainage populations include individuals found in and around Barstow, Lenwood, Pisgah Crater,

Coyote Dry Lake, Cronese Dry Lake, Bitter Spring, Red Pass Dry Lake, Silver Dry Lake, Afton Canyon, Razor Road, within the West Mojave Plan Area (Jarvis 2009). While there have been limited quantitative analyses describing status of this species at population levels within the West Mojave region, populations are generally thought to be decreasing (Cablk and Heaton 2002). However, Cablk and Heaton (2002) point out that Mojave Fringe-toed lizard habit is very dynamic and therefore, local populations likely exhibit metapopulation dynamics. That is, isolated local habitat patches may become unpopulated for some period of time only to be repopulated at a later time by individuals from nearby occupied habitat patches. Therefore, it is difficult to establish range wide population trends for this species.

A paper by Murphy and others (2006) documents the extirpation of the species at four sites where they were previously reported (i.e., Harper and El Mirage dry lakes, Piute Butte, and Lovejoy Buttes).

Within the planning area, the DRECP LUPA identifies approximately 22,440 acres of modeled suitable habitat for this species on BLM lands (Figure 3.4-70). The amount of acres identified within each subregion is detailed above in Table 3.4-5. In addition, approximately 22,161 acres has been designated as the Mojave Fringe-toed Lizard ACEC to protect the species (Figure 3.4-70). The amount of Mojave Fringe-toed Lizard ACEC acres identified within each subregion is detailed in Table 3.4-13.

Table 3.4-13. Acres of Modeled Suitable Habitat for Mojave Fringe-toed Lizard within the WEMO Planning Area per Subregion

Subregion	Subregion Abbreviation	Sum of Acres
Afton Canyon	AC	2,893.2
Barstow	BA	3,337.0
Joshua Tree	JT	1,418.3
Mojave Trails NM	MT	13,562.2
Wonder Valley	WV	1,223.3
Total		22,434.0

Spring field surveys were conducted in 2012 and 2013 on eight parcels within the Mojave fringe-toed lizard Area of Critical Environmental Concern (ACEC) within the WEMO Planning Area. The latest of these surveys was conducted between May 8 and May 31, 2013. The eight parcels are located in five geographic areas (Yermo-3 parcels, Manix-3 parcels, Razor, and Twentynine Palms). The survey results for 2012 and 2013 are listed in Table 3.4-14.

Table 3.4-14. Comparison of Mojave Fringe-toed Lizard 2012 and 2013 Survey Transects and Detections for Parcels of Land Located within the Mojave Fringe-toed Lizard ACEC

Location	2012 Number of Transects	2013 Number of Transects	2012 Number of Detections	2013 Number of Detections
Yermo 1	4	5	3	0
Yermo 2	2	2	0	0

Table 3.4-14. Comparison of Mojave Fringe-toed Lizard 2012 and 2013 Survey Transects and Detections for Parcels of Land Located within the Mojave Fringe-toed Lizard ACEC

Location	2012 Number of Transects	2013 Number of Transects	2012 Number of Detections	2013 Number of Detections
Yermo 3	4	1	3	1
Manix 1	0	1	N/A	0
Manix 2	0	1	N/A	0
Manix 3	0	5	N/A	2
Rasor	0	1	N/A	0
Twentynine Palms	0	5	N/A	4

Mojave fringe-toed lizards were encountered at four of the eight parcels in one or both years. Mojave fringe-toed lizards were not detected at Yermo Parcel 2 in 2012 or 2013. Three other parcels were not surveyed in 2012 and had no detections in 2013. In all, 16 Mojave fringe-toed lizards were detected on the sites during the two survey periods.

Four other parcels of potential Mojave fringe-toed lizard habitat were surveyed for presence/absence in spring, 2013 (Table 3.4-14). These sites were identified as potential habitat locations by United States Fish and Wildlife Service (USFWS) as part of their 2012 Mojave fringe-toed lizard Endangered Species Act listing decision. Three (Edwards North, Cuddeback Dry Lake Bed and Big Rock Creek Wash) of the four parcels did not contain suitable habitat for the Mojave fringe-toed lizard. Piute Butte parcels contained suitable habitat, but no Mojave fringe-toed lizards or sign were observed (Table 3.4-15).

Table 3.4-15. 2013 Surveys for Mojave Fringe-toed Lizards in Potentially Suitable Habitat in the WEMO Planning Area

Location	Description	Results
Edwards North	An isolated 112-acre parcel along CA-58 and the northern boundary of Edwards Air Force Base that was identified by USFWS.	Approximately 12.5 acres were surveyed at this location on the morning of May 31, 2013, and no suitable habitat was found. The area consists of creosote and salt bush assemblage dispersed between unvegetated compacted soil flats, which could potentially resemble dunes from aerial imagery.
Cuddeback Dry Lake Bed	Approximately 2,200 acres along the northern and eastern edges of Cuddeback Dry Lake was identified as potential habitat by USFWS.	Approximately 25 acres were surveyed at this location on the morning of May 31, 2013, and no suitable habitat was found. The area consists of largely salt bush scrub assemblages adjacent to barren playa, with no low-compaction wind-blown sand deposits.

Table 3.4-15. 2013 Surveys for Mojave Fringe-toed Lizards in Potentially Suitable Habitat in the WEMO Planning Area

Location	Description	Results
Big Rock Creek Wash	Big Rock Creek Wash is a highly diverse wash extending 20 miles north from the San Bernardino National Forest. USFWS designated approximately 8 miles of the wash as potential Mojave fringe-toed lizard habitat as it is within close proximity to extirpated sites such as Saddleback Butte State Park to the northeast, and BLM manages a 300 acre parcel adjacent to the wash.	Approximately 10 acres were surveyed on the morning of June 6, 2013, however no Mojave fringe-toed lizards or significant sign was observed. The wash is composed of granitic fluvial sands, interspersed with gravel and rocks, and is not composed of the loose Aeolian sand deposits required for Mojave fringe-toed lizard occupancy.
Piute Butte	A 250 acre parcel on Piute Butte, directly adjacent to the Antelope Valley Indian Museum, which was designated as extirpated for Mojave fringe-toed lizard by USFWS. This site contains ideal dune and blow-up habitat; however, the lizards have most likely become locally extirpated due to environment conditions due to successive years of intense drought.	Approximately 12 acres were surveyed around the edge of the parcel on the morning of June 6, 2013, and no Mojave fringe-toed lizards or sign was observed.

Northern Sagebrush Lizard

This species is widely distributed in montane chaparral, hardwood and conifer habitats, eastside pine and juniper habitats, and Great Basin shrub habitats of the Cascades and Sierra Nevada, and also east of the Sierra-Cascade crest in northern California (Zeiner et al 1990). Isolated populations exist at Sutter Buttes in the Sacramento Valley, in the Coast Ranges along the entire length of the state, in the mountains of southern California, and in the desert mountains of Inyo County. Elevation: 900-3200 m (3000-10,400 ft) (Zeiner et al 1990).

Known distribution data for the sagebrush lizard within the WEMO Planning Area is depicted in Figure 3.4-71. Within the planning area, the CNDDDB identifies approximately 10 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-5).

Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)

The species is primarily found in Kern County, CA in the subregions of Jawbone, Middle Knob and Antelope Valley.

Southwestern Pond Turtle (*Clemmys marmorata pallida*)

Historically, records for the southwestern pond turtle are scattered along much of the Mojave River including Yermo and Victorville (Seeliger, 1945). Brattstrom and Messer (1988) speculated that some turtles remain in Deep Creek and reported previous records from the Mojave Narrows near Victorville, and Afton Canyon. Presently, the only extent populations of the western pond turtle in the Planning Area occur at the Afton Canyon ACEC and on state lands at Camp Cady (introduced population in artificial ponds). The population in Afton Canyon appears to be very small. At

Afton Canyon, the southwestern pond turtle occupies natural pools of water in the floodplain of the Mojave River. In 1998, it was estimated that the surface area of these ponds was less than 0.25 ha in extent (Lovich and Meyer, 2001). In 1998 the estimated population of western pond turtles in Afton Canyon was 16 animals (95% confidence interval = 15-23 animals) suggesting densities of 50 turtles/ha (95% confidence interval = 46-74 turtles/ha) (Lovich and Myer, 2001). Since 1998 there have been only sporadic sightings of western pond turtle despite continued survey efforts. Since 1998, there have been only three incidental sightings of this species in Afton Canyon – a single adult was observed in 2005, a single adult was photographed in 2007, and a single juvenile was captured in April 2016 (Lovich and Puffer, 2016). A single female was captured in 2017 during turtle surveys in Afton Canyon (Lovich pers com).

3.5 Socioeconomics and Environmental Justice

Within the WEMO Planning Area, BLM is the steward of a variety of resources of economic and social importance to the community, including: mineral resources; renewable energy resources; locations that are amenable to be used as communication sites; recreation areas; and biological, cultural, Wilderness, and other values which attract tourists to the area. Each of these resources, in turn, has the potential to affect, or be affected by, the area’s travel management network. Increase in economic activity associated with any of these resources could result in increasing access and use needs, as well as increased pressure towards route proliferation. This socioeconomic analysis focuses on how use of these resources in the planning area is changing, and the effect that those changes are expected to have on future access and use needs.

3.5.1 Economic Contribution of Tourism and Recreation

The high desert environment of the West Mojave continues to offer a diverse range of options for growing urban populations throughout Southern California and Nevada seeking recreation and leisure activities in a natural setting. Tourism and recreation demands are being driven by both regional and planning area population growth and characteristics. The high desert region attracts nearly 2.0 million visitor-trips a year for off-highway vehicle recreation and nearly 1.5 million visitors to State and National Parks in the area. In addition to generating a need for access and use in the planning area, this recreation travel adds to socioeconomic activity by supporting local businesses and related jobs.

Table 3.5-1 summarizes levels of tourism-related employment in and around the planning area in 2011. Since 1998, travel and tourism-related employment has grown from 14.3 percent of total private employment to 16.0 percent. From 1998 to 2011, employment in travel and tourism increased 36.3 percent, as compared to an increase of 18.7 percent in non-travel and tourism employment. These figures demonstrate the relative growth in the importance of recreation in the overall economy.

Table 3.5-1. Local County Travel and Tourism-Related Employment in 2011

Sector	San Bernardino County	Inyo County	Kern County
Total Travel and Tourism Employment	81,593	1,889	28,029
Retail Trade	19,246	191	5,791
Passenger Transportation	393	1	79

Table 3.5-1. Local County Travel and Tourism-Related Employment in 2011

Sector	San Bernardino County	Inyo County	Kern County
Arts, Entertainment, and Recreation	10,490	279	3,790
Accommodation and Food	51,464	1,418	18,429

Source: EPS-HDT 2013

OHV recreationists, whether they use OHVs as a means to access other forms of recreation, or find recreation opportunities in the driving of the OHV itself, contribute to the local economies of the planning area in a variety of ways. Economic contributions depend on the level of use in areas surrounding desert towns, and the future significance of contributions depends on the nature of ongoing recreation use trends. Table 3.5-2 addresses the various ways by which recreation opportunities in various areas of the WEMO Planning Area contribute dollars to local economies.

Table 3.5-2. Recreation Economic Contribution

Region or City	Principal Recreational Activities on Adjoining Public Land	OHV Use in Nearby Areas	Source of Economic Contribution	Trends in Growth	Comments
Inyo County (Pearsonville Little Lake)	Commercial filming, Motorcycle touring	Low	Fuel, food	Increasing as the LA Basin grows	Most visitors to the area will acquire supplies in larger communities further south
Kern County	Large range of vehicle dependent recreational activities	Cumulatively High	Lodging, meals, supplies, vehicle repairs, fuel	Increasing	Given the close proximity of this portion of Kern County to the LA Basin and that it serves as the “Gateway” to the Sierras and the Desert, growth is high and is expected to increase.
California City	OHV touring in the Rand and El Paso mountains – off-road motorcycle play	Moderate	Fuel, camping supplies, and food	Has been increasing with the growth of the LA Basin	Visitors coming over the Tehachapi and headed to the Rand and El Paso Mountains will likely stop in California City. In spite of recent closures in the Rands, the level of use outside of California City has not diminished. The closures have in fact increased demands on local law enforcement due to increased private property trespass.

Table 3.5-2. Recreation Economic Contribution

Region or City	Principal Recreational Activities on Adjoining Public Land	OHV Use in Nearby Areas	Source of Economic Contribution	Trends in Growth	Comments
Mojave	SUV touring, off-road Events for 4WD, motorcycles, and all desert play vehicles	High	Vehicle repairs and vehicle parts, fuel, camping supplies, motels, and food	Increasingly significant with growth in LA Basin and the increasing popularity of desert	The Tehachapi Pass carries a significant load of recreation traffic from the San Joaquin Valley headed to the Mojave Region. Certainly any increase in recreation activity has a potential for economic gain for Mojave.
Ridgecrest	SUV touring, organized OHV events, rock hounding, commercial filming	High	Vehicle repairs and parts, fuel, camping supplies, food, hotels	Increasing	Viewed as both a significant current and future source of economic revenues
San Bernardino County	Large range of vehicle dependent recreational activities	Cumulatively High	Lodging, meals, supplies, vehicle repairs, fuel	Increasing	Given the close proximity of this portion of San Bernardino County to the LA Basin and the “Inland Empire” and that it serves via I-15/US 395 as the “Gateway” to the Sierras and the Desert, growth is high and is expected to increase.
Baker	SUV touring, OHV events, 4WD and motorcycle play, rock hounding, mining exploration	Low	Vehicle repairs and vehicle parts, fuel, camping supplies, motels, and food	Slight increase due to remoteness	Baker is at the eastern edge of the study area and most users come out of the LA Basin and the San Joaquin Valley. Therefore, most recreation expenditures for the Mojave come from recreation users not going thru Baker.
Barstow	SUV touring, OHV events, 4WD and motorcycle play, rock hounding, mining exploration	High	Vehicle repairs and vehicle parts, fuel, camping supplies, motels, and food	Increasing	Barstow is at the heart of the Mojave Study Area with traffic coming in from LA via Highway 15 and from the west via Highway 58. An increase in recreation related expenditures could have a significant positive effect on Barstow.

Table 3.5-2. Recreation Economic Contribution

Region or City	Principal Recreational Activities on Adjoining Public Land	OHV Use in Nearby Areas	Source of Economic Contribution	Trends in Growth	Comments
Daggett	SUV touring, OHV events, 4WD and motorcycle play, rock hounding, mining exploration	Low	Fuel and food	Increasing slightly	Daggett is located about 5 miles east of Barstow and the majority of travelers will stock up in Barstow and only use Daggett for last minute supplies. Therefore, a light increase in recreation activity will have a very slight economic impact to this small community.
Lucerne Valley	SUV touring, desert exploring via 4WD and motorcycle, rock hounding, and mining exploration	Low	Fuel, camping supplies, and food	Slight increase; due to the fact that the area is somewhat “off the beaten path” the level of growth is less than other areas, and due to touring and travel.	Lucerne Valley is located just north of the San Bernardino Mountains about 10 miles east of Apple Valley. The following BLM subregions surround Lucerne Valley: Juniper, Granite, Ord, and Bighorn, also to the east is Johnson Valley OHV Area. Lucerne does not serve a large number of travelers outside of OHV recreation. Recreationists travel in Rattlesnake Canyon and for SRP events in Johnson Valley, such as King of Hammers (KOH) with over 33,000 vehicles in 2018. There also rocket launches on Lucerne and Rabbit dry lakebeds.
Ludlow	SUV touring, OHV events, 4WD and motorcycle play, rock hounding, mining exploration	Low	Fuel and food	Increasing slightly	Ludlow is located about 50 miles east of Barstow and the majority of travelers will stock up in Barstow. Therefore, a light increase in recreation activity will have a very slight economic impact to this small community.

Table 3.5-2. Recreation Economic Contribution

Region or City	Principal Recreational Activities on Adjoining Public Land	OHV Use in Nearby Areas	Source of Economic Contribution	Trends in Growth	Comments
Newberry Springs	SUV touring, OHV events, 4WD and motorcycle play, rock hounding, mining exploration	Low	Fuel and food	Increasing slightly	Newberry Springs is located about 18 miles east of Barstow and the majority of travelers will do their business in the bigger city. Therefore, a light increase in recreation activity will have a very slight economic impact to this small community.
Trona	Commercial filming, motorcycle touring	Low	Fuel and food	Increasing as visitation increases to Death Valley NP	Although most visitors to the area get supplies in Ridgecrest, the future economic contribution to this economically depressed community is significant.
Victorville/ Apple Valley	SUV touring, OHV events, 4WD and motorcycle play, rock hounding, mining exploration	High	Vehicle repairs and vehicle parts, fuel, camping supplies, lodging, food	Increasing	Victorville does receive a high volume of recreation traffic leaving the LA Basin on Highway 15. It is close to the Stoddard Valley OHV Area, Johnson Valley OHV Area, and Granite, Ord, and Juniper BLM Subregions. Any increases in OHV recreation could result in significant monetary inputs into the local economy.
Yucca Valley	SUV touring, desert exploring via 4WD and motorcycle, rock hounding, and mining exploration	Low	Fuel, camping supplies, food	Slight increase; most of the recreation growth is to the northwest	Yucca Valley is east of the San Bernardino Mountains, and south of the BLM subregion of Bighorn and north of the Morongo subregion. Yucca Valley is not on a major highway and, relative to other cities, does not serve a large volume of recreation traffic with the exception of the KOH SRP. The KOH SRP generates 3 million dollar economic benefit.

Source: Advance Resource Solutions, Inc.

3.5.2 Environmental Justice

Minority and Low-Income Populations in the WEMO Planning Area

Percentages of minority and low-income populations for individual census tracts furnish the criteria for identifying census tracts that merit consideration in an EJ analysis. Table 3.5-3 presents data on the population of each U.S. Census tract in the West Mojave Planning Area as well as the numbers and percentages of minority and low-income subpopulations within each census tract. The demographic data in Table 3.5-3 for each census tract used in the EJ analysis was sourced from the U.S. Census Bureau 2008-2012 5-Year American Community Study (ACS).

A census tract cell in Table 3.5-3 that is bolded in the column “Percent Minority Population” indicates a tract of concern for EJ analysis. Census tracts of EJ concern have minority populations greater than 50%. Low-income populations in census tracts that are bolded under the column “Percent Low-Income Population” also indicate a tract of concern for EJ analysis. Census tracts of EJ concern have a percentage of low-income people greater than the average percentage of all low-income people residing in the West Mojave Planning Area.

The population of the WEMO Planning Area has on average a lower percentage of minority residents than the state of California. In contrast, the population of the WEMO Planning Area has a greater number of low-income residents than in the population of the state of California.

Locations of census tracts with considerations of minority and low-income populations of environmental justice concerns are portrayed in Figure 3.5-1. The following enumeration summarizes the number of identified environmental justice tracts of concern by county:

- Inyo County: Does not contain any tracts with concerns for minority and low-income populations.
- Kern County: Contains eight tracts with concerns for low-income concerns and no tracts with minority concerns.
- Los Angeles County: Contains 17 tracts with both minority and low-income concerns, 29 tracts with minority concerns only, and 35 tracts with concerns for low-income populations.
- Riverside County: Contains only one tract with concerns for both minority and low-income populations.
- San Bernardino County: Contains two tracts with both minority and low-income concerns, one tract with minority concerns only, and 42 tracts with concerns for low-income populations.

Table 3.5-3. Minority and Poverty Populations within the WEMO Planning Area^{1,2}

Location/County	Census Tract	Total Population	Minority Population	Minority Population (%)	Low-Income Population	Low-Income Population (%) ³
Inyo		3,234	513	15.9	460	14.2
	8*	3,234	513	15.9	460	14.2
Kern		94,476	21,999	23.3	17,223	18.2
	52.01*	5,167	276	5.3	913	17.7

Table 3.5-3. Minority and Poverty Populations within the WEMO Planning Area^{1,2}

Location/County	Census Tract	Total Population	Minority Population	Minority Population (%)	Low-Income Population	Low-Income Population (%) ³
	52.03*	4,458	459	10.3	1193	26.8
	53	2,127	474	22.3	463	21.8
	54.01	6,371	1,051	16.5	838	13.2
	54.02	5,354	977	18.2	282	5.3
	54.03	7,629	2,038	26.7	825	10.8
	54.04	6,530	1,357	20.8	911	14.0
	55.01	5,945	679	11.4	866	14.6
	55.06	5,052	1,127	22.3	710	14.1
	55.07	7,692	2,770	36.0	1855	24.1
	55.08	5,167	1,572	30.4	1,641	31.8
	56	2,017	383	19.0	596	29.5
	57	2,745	786	28.6	22	0.8
	58.01	6,821	2,507	36.8	1,010	14.8
	58.02	7,030	2,873	40.9	2,335	33.2
	59	3,344	1,471	44.0	1,155	34.5
	60.04*	1,637	304	18.6	195	11.9
	60.07*	6,491	343	5.3	720	11.1
	65	2,899	552	19.0	693	23.9
Los Angeles		375,147	163,719	43.6	70,993	18.9
	9001.02	791	113	14.3	224	28.3
	9001.03	6,482	1,665	25.7	2,061	31.8
	9001.04	5,603	1,994	35.6	1,211	21.6
	9002.01	1,201	148	12.3	120	10.0
	9003	3,853	1,062	27.6	461	12.0
	9005.01	6,475	2,466	38.1	1,851	28.6
	9005.04	5,508	2,607	47.3	586	10.6
	9005.05	4,169	2,059	49.4	1,180	28.3
	9005.06	4,647	1,444	31.1	730	15.7
	9005.07	7,944	2,948	37.1	2,006	25.3
	9005.08	3,331	1,437	43.1	707	21.2
	9006.02	5,324	1,482	27.8	2,120	39.8
	9006.05	7,055	1,988	28.2	1,440	20.4
	9006.06	3,898	1,457	37.4	1,222	31.3
	9006.07	4,510	2,278	50.5	1,744	38.7
	9006.08	3,335	867	26.0	800	24.0
	9006.09	5,339	1,999	37.4	1,744	32.7
	9007.01	4,749	1,753	36.9	1,282	27.0
	9007.03	3,763	1,413	37.5	1,005	26.7
	9007.04	2,863	1,091	38.1	605	21.1
Los Angeles (continued)	9007.05	4,627	1,629	35.2	874	18.9
	9008.03	9,910	5,354	54.0	1,592	16.1

Table 3.5-3. Minority and Poverty Populations within the WEMO Planning Area^{1,2}

Location/County	Census Tract	Total Population	Minority Population	Minority Population (%)	Low-Income Population	Low-Income Population (%) ³
	9008.04	2,911	1,414	48.6	945	32.5
	9008.05	4,817	2,144	44.5	794	16.5
	9008.06	3,089	1,604	51.9	1,168	37.8
	9009	3,690	871	23.6	458	12.4
	9010.03	5,532	3,607	65.2	0	0.0
	9010.04	12,411	3,691	29.7	1,517	12.2
	9010.07	2,250	130	5.8	176	7.8
	9010.08	2,970	938	31.6	245	8.2
	9010.09	5,667	1,555	27.4	1,148	20.3
	9010.10	6,007	1,819	30.3	1,926	32.1
	9010.11	4,903	1,438	29.3	583	11.9
	9011.01	5,478	1,368	25.0	1,028	18.8
	9011.02	5,505	1,383	25.1	858	15.6
	9012.05	10,376	2,543	24.5	555	5.3
	9012.09*	1,449	89	6.1	137	9.5
	9012.10	1,512	100	6.6	42	2.8
	9012.13	3,825	673	17.6	165	4.3
	9100.01	5,814	3,593	61.8	638	11.0
	9100.02	6,351	3,141	49.5	1,156	18.2
	9101.01	1,275	770	60.4	492	38.6
	9102.01	4,432	2,835	64.0	1,562	35.2
	9102.02	5,612	1,382	24.6	190	3.4
	9102.05	1,073	339	31.6	47	4.4
	9102.06	3,229	1,433	44.4	75	2.3
	9102.07	5,689	2,210	38.8	430	7.6
	9102.08	6,681	3,132	46.9	902	13.5
	9102.09	4,004	1,408	35.2	277	6.9
	9102.10	7,063	2,630	37.2	304	4.3
	9103.01	4,242	1,099	25.9	236	5.6
	9103.02	5,607	1,574	28.1	346	6.2
	9104.01	6,475	3,198	49.4	482	7.4
	9104.02	3,251	2,145	66.0	1,223	37.6
	9104.03	2,351	1,800	76.6	1,328	56.5
	9104.04	3,916	2,265	57.8	1,443	36.8
	9105.01	5,438	4,420	81.3	2,984	54.9
	9105.02	4,145	2,912	70.3	1,584	38.2
	9105.04	4,878	3,507	71.9	1,354	27.8
	9105.05	3,017	2,059	68.2	487	16.1
	9106.01	6,308	3,934	62.4	1,773	28.1
Los Angeles (continued)	9106.02	3,420	2,528	73.9	1,050	30.7
	9106.03	7,328	4,655	63.5	843	11.5

Table 3.5-3. Minority and Poverty Populations within the WEMO Planning Area^{1,2}

Location/County	Census Tract	Total Population	Minority Population	Minority Population (%)	Low-Income Population	Low-Income Population (%) ³
	9106.05	4,450	2,355	52.9	1,316	29.6
	9106.06	2,954	1,892	64.0	881	29.8
	9107.05	12,059	7,544	62.6	1,086	9.0
	9107.06	6,042	3,367	55.7	1,247	20.6
	9107.07	4,666	2,805	60.1	851	18.2
	9107.09	1,663	681	41.0	198	11.9
	9107.11	7,615	4,250	55.8	1,457	19.1
	9107.12	2,657	1,659	62.4	294	11.1
	9107.13	5,843	3,583	61.3	1,009	17.3
	9107.14	3,961	2,681	67.7	883	22.3
	9107.15	6,656	3,613	54.3	1,207	18.1
	9107.16	5,783	3,649	63.1	832	14.4
	9108.04*	3,087	537	17.4	303	9.8
	9108.05*	4,204	399	9.5	485	11.5
	9108.12	407	33	8.1	23	5.7
	9110.01	3,709	1,066	28.7	394	10.6
	9800.03	0	0		0	
	9800.04	23	15	65.2	11	47.8
Riverside		3,513	1,444	41.1	594	16.9
	469*	3,513	1,444	41.1	594	16.9
San Bernardino		497,644	137,457	27.6	102,843	20.7
	100.04	8,735	1,150	13.2	847	9.7
	100.09	3,677	855	23.3	485	13.2
	100.10	6,124	1,973	32.2	1,657	27.1
	100.11	4,821	1,716	35.6	1,494	31.0
	100.12	4,768	515	10.8	757	15.9
	100.13	8,463	2,328	27.5	1,128	13.3
	100.14	5,080	1,218	24.0	1,810	35.6
	100.15	5,213	1,090	20.9	1,084	20.8
	100.16	5,693	1,536	27.0	1,402	24.6
	100.17	14,479	3,872	26.7	2,066	14.3
	100.18	7,882	2,543	32.3	1,773	22.5
	100.19	5,507	1,373	24.9	1,561	28.3
	100.20	6,969	2,230	32.0	1,716	24.6
	100.21	6,539	699	10.7	1,915	29.3
	100.22	3,958	656	16.6	587	14.8
	100.23	5,836	925	15.8	693	11.9
	100.24	5,062	934	18.5	1,168	23.1
	100.25	7,005	2,987	42.6	1,807	25.8
San Bernardino (continued)	100.26	11,902	4,787	40.2	3,403	28.6
	103*	3,692	713	19.3	802	21.7

Table 3.5-3. Minority and Poverty Populations within the WEMO Planning Area^{1,2}

Location/County	Census Tract	Total Population	Minority Population	Minority Population (%)	Low-Income Population	Low-Income Population (%) ³
	104.02	11,024	2,234	20.3	689	6.3
	104.09*	2,727	403	14.8	489	17.9
	104.10	2,809	373	13.3	369	13.1
	104.11	6,945	1,285	18.5	1,154	16.6
	104.12	7,258	1,181	16.3	970	13.4
	104.13	6,431	1,195	18.6	1,323	20.6
	104.15	5,291	1,793	33.9	563	10.6
	104.16	3,755	374	10.0	930	24.8
	104.17	3,391	429	12.7	903	26.6
	104.19	4,827	1,032	21.4	1,043	21.6
	104.20	4,074	768	18.9	643	15.8
	104.21	5,619	1,857	33.0	1,317	23.4
	104.22	1,319	87	6.6	182	13.8
	104.23	3,654	450	12.3	806	22.1
	104.24	1,375	52	3.8	360	26.2
	116	6,622	856	12.9	1,004	15.2
	117	1,720	433	25.2	358	20.8
	118	7,391	2,168	29.3	1,188	16.1
	119	4,020	996	24.8	850	21.1
	120.01	6,194	2,288	36.9	574	9.3
	120.02	5,569	2,463	44.2	995	17.9
	121.01	5,087	1,277	25.1	475	9.3
	121.03	4,121	915	22.2	509	12.4
	121.04	5,853	1,323	22.6	1,371	23.4
	250	9,584	3,161	33.0	979	10.2
	89.01	2,368	185	7.8	526	22.2
	91.07	5,529	279	5.0	957	17.3
	91.08	6,134	1,269	20.7	1,244	20.3
	91.09	5,372	936	17.4	565	10.5
	91.10	16,159	7,313	45.3	3,048	18.9
	91.12	8,931	4,022	45.0	1,823	20.4
	91.14	9,802	4,832	49.3	1,766	18.0
	91.16	6,883	3,331	48.4	3,929	57.1
	91.17	7,233	2,173	30.0	2,667	36.9
	91.18	20,987	7,627	36.3	3,324	15.8
	91.19	5,314	1,164	21.9	773	14.5
	92.01	4,623	107	2.3	213	4.6
	93	1,217	368	30.2	247	20.3
	94	3,153	1,194	37.9	1,720	54.6
San Bernardino (continued)	95	6,855	2,560	37.3	2,092	30.5
	97.07	6,303	860	13.6	918	14.6

Table 3.5-3. Minority and Poverty Populations within the WEMO Planning Area^{1,2}

Location/County	Census Tract	Total Population	Minority Population	Minority Population (%)	Low-Income Population	Low-Income Population (%) ³
	97.08	4,498	623	13.9	772	17.2
	97.09	6,214	1,383	22.3	1,377	22.2
	97.10	7,927	1,712	21.6	3,354	42.3
	97.11	9,409	1,737	18.5	765	8.1
	97.12	5,933	1,663	28.0	2,047	34.5
	97.13	6,661	1,177	17.7	656	9.8
	97.14	3,661	766	20.9	851	23.2
	97.15	7,976	1,471	18.4	913	11.4
	97.16	6,863	1,688	24.6	2,601	37.9
	97.17	4,198	481	11.5	481	11.5
	98	4,499	1,197	26.6	1,714	38.1
	9802	4,228	2,255	53.3	0	0.0
	99.04	10,544	4,087	38.8	3,268	31.0
	99.05	8,102	4,693	57.9	3,013	37.2
	99.06	4,604	1,872	40.7	807	17.5
	99.08	4,486	1,558	34.7	902	20.1
	99.10	4,837	1,831	37.9	588	12.2
	99.11	7,027	2,167	30.8	1,105	15.7
	99.12	5,123	1,490	29.1	1,448	28.3
	99.13	5,926	1,893	31.9	2,170	36.6
WEMO TOTAL		974,014	325,132	33.3	192,113	19.6
CALIFORNIA		37,325,068	14,072,515	37.7	5,590,100	15.0

*Tracts transect the planning area boundary.

¹ Bolded numbers within the percent minority population and percent low-income population columns, indicate a tract with environmental justice populations.

² Because U.S. Census 2008-2012 American Community Survey (ACS) estimates come from a sample population, a certain level of variability is associated with the estimates. Supporting documentation on ACS data accuracy and statistical testing can be found on the ACS website in the Data and Documentation section available here:

http://www.census.gov/acs/www/data_documentation/documentation_main/.

For purposes of this analysis, U.S. Census ACS 5-Year 2008-2012 data were utilized to provide current data, consistency between the data used to identify minority and low-income populations, and consistency between the different geographies presented. U.S. Census ACS data from census tracts are considered the best available information for representing the demographic makeup of the WEMO Plan Area communities for the environmental justice analysis in this EIS. Federal agencies commonly use published U.S. Census ACS data in compliance with Executive Order 12898 and CEQ and EPA guidance for incorporating Environmental Justice Concerns under the National Environmental Policy Act of 1969 (NEPA).

³ Represents individuals with mean annual incomes below the annual statistical poverty level, identified by poverty status in the last 12 months, identified as “percent below poverty level” within the US Census 2008-2012 ACS data set.

Source: U.S. Census Bureau American Community Survey 2008-2012.

3.6 Recreation Activities

Table 3.6-1 presents a summary of recreation uses throughout the WEMO Planning Area. It describes the primary destinations and recreational activities that occur at particular geographic locations within the planning area.

Many of the subregions are extensively used for OHV play and touring, Open Areas, and OHV events. The Barstow and Lancaster subregions have relatively limited OHV recreation because they have little public land, and most of their OHV Open and OHV Limited routes connect to private land and commercial developments. The Mojave Trails National Monument, Juniper Flats, Cronese Lake, and Iron Mountain subregions are the sites of historic and scenic trails, including the Old Spanish National Historic Trail, Mojave Trail, Mormon Road and Pacific Crest Trail, . Backcountry and non-mechanized recreation are prominent in the Darwin, Sierra, North Searles, Cronese Lake, Red Mountain, and Newberry-Rodman subregions.

OHV Open Areas

BLM's CDCA Plan has designated several areas within the West Mojave as OHV "Open Areas", totaling 271,661 acres. The Open Areas within the planning area are shown in Figure 3.6-1. The Open Areas constitute 7.8 percent of the approximately 3.1 million acres of BLM-managed public lands in the WEMO Planning Area. OHV Open Areas are some of the most popular destinations in the desert, and the designated access routes to these OHV Open Areas are some of the most heavily used routes on public lands. Within OHV Open areas, unlike limited vehicle access areas, there is no "route designation." OHVs may travel anywhere, subject to site-specific access limitations, so long as the vehicle is operated responsibly in accordance with regulations. However, dispersed OHV recreationists in OHV Open Areas generally follow a system of routes created over time that provide for touring at reasonable speeds that minimize likelihood of breakdown or vehicle damage.

In areas where the use is particularly concentrated, the density of routes can be very high. Staging areas and group camping areas are often located nearby to these areas of concentrated use. OHV Open Areas are destinations for uses that are not available in other parts of the desert where access is limited to designated routes. The types of uses may depend on soils, topography and historic patterns of use. Table 3.6-2 briefly describes each OHV Open Area, visitor use levels and the principal recreation activities that occur there.

Special Recreation Management Areas and Extensive Recreation Management Areas

The 2016 DRECP LUPA designated lands as Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs).

SRMAs are recognized and managed for their recreation opportunities, unique value and importance. SRMAs are high-priority areas for outdoor recreation as defined in the BLM Land Use Planning Handbook H-1601-1 (2005). SRMAs are public lands units identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific structured recreation opportunities (i.e., activity, experience, and benefit opportunities). Both land use plan decisions and subsequent implementing action for recreation in each SRMA are geared to a strategically identified primary market – destination, community, or undeveloped areas.

ERMAs recognize existing recreation use, demand, or recreation and visitor services program investments and are managed to sustain principal recreation activities and associated qualities and conditions of the ERMA, commensurate management with other resources and resource use.

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Broadwell Lake Subregion	Bounded by Interstate 40 on south, powerline road on the east, Newberry Springs to west, Hidden Valley Road to northwest, and Cady Mountains to the northeast.	A couple of large valleys dominate this subregion. The north boundary is the road bisecting Hidden Valley (traditional cattle grazing), running east-west, which connects on the east to Broadwell Dry Lake basin, a north-south running valley. The western portion receives higher OHV traffic exploring from nearby urban areas in Newberry Springs, significant north-south green sticker route, Route 66, OHV touring, scenic exploration. The area includes a large utility corridor.	Middle Country	Back Country	Middle Country
Afton Canyon Subregion	Bounded by Interstate 15 on north, Hidden Valley Rd and Mojave Trails National Monument on south, Mojave National Preserve/T&T east boundary, Newberry Springs west boundary.	This area includes a primary ancient, historic and current east west transportation/utility corridor which includes the Mojave Trail (used for nearly 10,000 years), Old Spanish National Historic Trail, Mormon Rd., Government/Mojave Rd. and today Hwy15 and BNSF railroad. Razor OHV Area, Big Horn Sheep drinker, hunting, wildlife viewing, and rock collecting. Fuel, food and water are available at Hwy15 exits for Afton and Razor.	Front Country	Middle Country	Front Country
Barstow Subregion	Directly east of Barstow, north boundary Highway 15, south boundary Highway 40.	The area includes assorted small scattered tracts of public land, including portions along the Mojave River. There are few open routes. Available routes primarily connect private roads and provide commercial rather than casual OHV recreation. The area includes a historic settlement area with Camp Cady and Soldier Mountain, Manix ACEC, Old Spanish National Historic Trail, Mormon Rd. Extensive agricultural developments with roads, and power and water systems. Other developments include commercial power plant, mining, and communications sites, Marine supply base, rail yard and airport; hotels, restaurants and gas stations.	Rural Country	Urban Country	Urban Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Darwin Subregion	Bounded by Highway 190 on the north, Death Valley National Park on the east, China Lake Naval Weapons Station (NWS) on the south, and Coso Range Wilderness on the west.	Open desert expanse that is sporadically interrupted topographically by the upper extent of the Coso Range, the Darwin Hills, and other unnamed hills. The Darwin Falls Wilderness is on the north east flank of the area which provides opportunities for primitive and unconfined non-mechanized forms of recreation. The area is popular for its backcountry vehicle touring and exploration of historic mining sites, primitive camping, packing, hiking, camping, rock collecting, wild horse viewing, and photography. Popular recreational destinations include China Gardens spring, Lower Centennial cabin site, and the historic mining community of Darwin.	Back Country	Back Country	Back Country
Sierra Subregion	Bounded by CDCA boundary and Highway 190 on the north, China Lake and Darwin Subregion on the east, Highway 178 on the south, and the Inyo National Forest and CDCA boundary on the west.	This area is generally a north south trending valley outlined on the western edge by the Eastern Sierra escarpment and the Coso Range on the east side. The area includes the Owens Peak, Sacatar Trail, and Coso Range Wilderness areas that provide for primitive and unconfined non-mechanized forms of recreation. Recreational activities include dispersed hiking and camping, rock climbing, upland game bird and deer hunting, bird watching, wildflower viewing, mountain biking, and horsebacking along with OHV travel and touring. Popular destinations within the area include Fossil Falls and its developed campground, Indian Wells, Short, and Sand Canyons, Ayers Rock, and the Olanca Sand Dunes Open Area.	Front Country	Middle Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
North Searles Subregion	Bounded by the Slate Range Crossing on the north, the ridge top of the Slate Range separating Searles Valley from Panamint Valley on the east, Township line 26S on the South, and China Lake NWS on the west.	The region consists of the upper part of the Searles Valley, part of the ancient lakebed above Searles Lake and is encircled by the Argus and Slate ranges on the west, east, and north respectively. Recreational pursuits include OHV driving for pleasure, technical four-wheel driving, rock climbing, birding, horseback riding, hunting, rock hounding, along with hiking and backpacking. Popular destinations in the region include Isham Canyon, the Escape Trail, and Great Falls Basin. The Argus Range Wilderness, Wilderness Study Area and ACEC provide opportunities for non-mechanized forms of recreation.	Back Country	Back Country	Back Country
South Searles Subregion	Bounded along Township line 26S on the north, China Lake NWS on the east, Randsburg Wash Road on the south, and China Lake NWS on the west.	The region consists of the lower part of the Searles Valley made up of mostly gravel to silty lakebed sediments accentuated by the unusual Trona Pinnacles. Recreational pursuits in the area include gem and mineral collecting, star gazing, photography, OHV driving for pleasure, along with motorcycle racing and commercial 4-wheel drive, dual sport, and equestrian tours. Popular destinations within the area include the Trona Pinnacles National Natural Landmark and Searles Lake when it is opened to guided gem and mineral collecting trips.	Front Country	Middle Country	Front Country
Joshua Tree Subregion	Bounded by Highway 62 to the north, Joshua Tree National Park to the south and east, and Sand to Snow National Monument on the west.	The area includes various recreation sites, features and connecting routes are found throughout this area, a transitional interface zone between the desert and mountains to the south. Features include extensive historic mines and related roads, ruins and camps; Pinto Mountain Wilderness, popular shooting areas; remote 4x4 touring and exploration.	Back Country	Primitive Country	Back Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Wonder Valley Subregion	Bounded by Highway 62 to the south, Twentynine Palms Marine Corps Air Ground Combat Center 29 on the north, Amboy Road on the east, and Highway 247 on the west.	Desert Valley basin oriented east-west; slopes rise gently to the south into rugged and remote Pinto Mountains, Joshua Tree NP and gateway community of 29 Palms, to the north desert lands gradually rise to ridgeline and 29 Palms Marine Base. The area includes extensive/dispersed urban interface, diverse features include Giant Rock, the Integratron and Copper Mountain Community College; full service town of 29Palms; small playas and dune systems popular with local OHV riders, and scattered staging areas.	Rural Country	Rural Country	Front Country
Rattlesnake Canyon Subregion	South bounded by San Gorgonio Wilderness; desert uplands around east-northeast base of San Bernardino Mountains. West boundary is Hwy18.	This area includes a swath of land along the base of the San Bernardino Mountains, extending north into the desert as far as Hwy 247. The area includes Bighorn Wilderness, numerous springs, thicker vegetation and larger wildlife, livestock grazing, historic mines, 4x4 exploration and scenic touring, and increasingly denser housing.	Front Country	Front Country	Middle Country
Juniper Flats Subregion	Southwest corner BFO; borders Highway 18 on east, San Bernardino National Forest to south, Mojave River on west, and Highway 247 to north.	This area includes an intensive urban interface with regular human activity, single track, OHV play, 4x4 exploration and scenic touring, equestrian, hiking, hot spring soaking, Pacific Crest Trail, Old Spanish National Historic Trail, hunting, numerous springs, fire wood collection, livestock grazing and dispersed camping. Features include community services, powerlines, pipelines, communications sites, railroad and dispersed visitor management control structures like signs, kiosks and fences.	Front Country	Front Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area²	Location	Primary Destinations and Recreational Activities	Physical Settings¹	Social Settings¹	Administrative Settings¹
Sand to Snow National Monument Subregion	The Monument has two separate areas. There are two sections in Rattlesnake Canyon T1NR5E SBM to include section 4, T2NR5E SBM and to include section 19-21 and 28-33. The second area is in Morongo Valley bound by the National Forest on the west, on the east is Joshua Tree National Park.	This area includes the transitional zone between the eastern base of the San Bernardino Mountains and dry upland desert ranges around Twentynine Palms and Joshua Tree NP. A series of parallel canyons, rocky ridges and boulder outcrops transected by numerous roads, rights of way, utility corridors, ranches, farms, cabins, tract homes, and more intensive developments in town; relatively artistic town w/unique architecture in harmony with landscape.. ROWs and access to private holdings are primary uses of roads; also 4x4 and OHV play, hunting (shotgun), hiking, wildlife viewing, photography, and nature appreciation.	Middle Country	Middle Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Mojave Trails National Monument Subregion	Bounded by the Union Pacific Railroad, to the south is 29 Palms MCACC and 29 Palms Hwy, the west boundary is County Road 20795 and Crucero Road.	This unique landscape contains a stunning diversity of lava flows, mountains, playas, sand dunes, bajadas, washes, and other features. The Cady Mountains contain important fossil fauna assemblages dating to the Miocene Period. Available routes primarily connect private roads and provide commercial rather than casual OHV recreation. Several smaller towns and rail stops were established along this stretch, including the alphabetically named Amboy, Bristol, Cadiz, Danby, Essex, Fenner, and Goffs; a prominent feature is Amboy Crater National Landmark. The easternmost portion contains Cady Mountains Wilderness Study Area; includes Afton Canyon, developed campground, overlooks, eligible Mojave River Wild & Scenic segment, The area includes scattered ruins of large mining operations, pipelines, powerlines, railroad and highways. This area is a swath of land about 12 miles long, but 20 miles across and 2-3 miles wide running in a NW-SE arc. The area contains Ludlow and busy Amboy Rd. It is an excellent area for early viewing of desert wildflower blooms in the lower desert. The area includes active and historic mines, T&T historic grade, and BNSF railroad. Recreational uses include hiking, rock collecting and wildlife viewing.	Middle Country	Back Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Jawbone Subregion	Bounded by Highway 178 on the north, Highway 14 on the east, Township line 31S on the south, and the CDCA boundary on the west.	This area is highlighted by the Jawbone Canyon and Dove Springs Open Areas along with the flat to rolling terrain that rises towards the western flank to take in the Scodie Mountains, along with the Kiavah and Bright Star Wilderness areas. The predominant recreational activity in the area is OHV riding including hill climbing, trail riding, and touring by both motorcycles and four-wheel drives. Additional recreational activities include camping, star gazing, hiking, upland game bird and deer hunting, picnicking, target shooting, wildlife and wildflower viewing. Popular destinations in addition to the Open Areas include the Jawbone Station Visitor Center, Butterbredt Springs, and the Pacific Crest National Scenic Trail.	Front Country	Rural	Front Country
Middle Knob Subregion	Bounded by Township line 31S on the north, Highway 14 on the east, Kern and Los Angeles county lines on the south, and the CDCA boundary on the west.	This area consists of two small groupings of public lands around Antimony Flats and Middle Knob along with scattered public lands south of Highway 58 down to the Los Angeles county line. Recreational pursuits include vehicle touring, single track motorcycle touring, site seeing, camping, hunting, target shooting, hiking and backpacking. Popular destinations in the region include the Pacific Crest National Scenic Trail and its various trailheads that provide the ability for one to take a short day hike or do a point to point hike.	Front Country	Front Country	Middle Country
Lancaster Subregion	Bounded by Highway 58 on the north, San Bernardino county line on the east, Angeles National Forest on the south, and the CDCA boundary on the west.	Assortment of scattered tracts of public land; predominantly within Los Angeles county. OHV Open routes primarily connect private roads and provide casual OHV recreation. Extensive private land developments w/roads, power and water systems. Other developments include commercial power plant, military bases, airports, hotels, restaurants and gas stations.	Rural	Back Country	Back Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Fremont Peak Subregion	Northwest corner of BFO; northern boundary is Ridgecrest Field Office, western boundary is Highway 395, southern boundary is Highway 58 and BNSF, the eastern boundary is Harper Dry Lake.	This area is in the western portion of the field office area along Highway 395. It provides popular access portals and staging areas for OHV recreation around Fremont Peak and points east. Features include Fremont Peak, the dominate landscape feature; good access, easy hike, historic mines, dry lakebeds and long roads connecting distant features. There are a few developments including scattered communication and radar sites.	Middle Country	Back Country	Back Country
Black Mountain Subregion	Northern boundary is Ridgecrest and China Lake NWS, western boundary is Fremont Peak, southern boundary is Highway 58 and BNSF, the eastern boundary is the Coolgardie subregion.	This area is relatively remote with few roads or developments. The area includes the Black Mountain Wilderness, Black and Inscription Canyons, Opal Mountain open dry lakebed Superior, and landsailing. The terrain varies from sandy expanses to rocky canyons and lava flows. The area includes extensive and significant petroglyphs and related sites; guzzlers and preserves. It is a popular 4x4 tour destination site, scenic touring and OHV play; dispersed camping, rock collecting, and hunting	Back Country	Back Country	Middle Country
Harper Lake Subregion	North of Highway 58, including Harper Dry Lake.	The north shore of the dry lakebed is the site of an ancient Native American settlement with extensive petroglyphs and springs, converted to historic farm and stage stop for Death Valley. Uses include farming, ranching, grazing, ACEC and watchable wildlife site. Historic center for stage, railroad, mining, ranching and agricultural sites, and is recently evolving into large scale industrial solar plants and transmission lines. Activities include 4x4 and OHV touring, hunting, landsailing, birding, rock collecting, photography, painting and night sky observation. Rainbow Basin and Owl Canyon Campground are also located here.	Front Country	Front Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Coolgardie Subregion	Between Fort Irwin to north and City of Barstow to south; Calico Mountains subregion to east, and Black Mountain subregion to west.	This area is in the north central portion of TMA5 and the Barstow field office area. It is a high plateau directly north of Barstow extending out to Ft. Irwin. It has an extensive Joshua Tree forest, with winter snow common. Gently terrain and good soils make ideal provide ideal OHV touring opportunities; extensive recreational gold mining area, active and historic uses. Soils (dg type) and slopes are well suited for scenic touring, 4x4 and OHV play and exploration. Features include springs, cabins, met towers and long roads connecting the horizon. A road to the top of Lane Mountain provides excellent vistas.	Middle Country	Middle Country	Front Country
Mitchel Mountains Subregion	Center of BFO. Borders the north side of Barstow City.	This area has few roads and trails, scattered historic mines, key communication sites on peaks, no springs; significant vista from top of Mitchel Mountain. Intensive use from urban interface includes recreation shooting, OHVs, 4x4s, mountain biking, running, hiking, dog walking, equestrian use, and geo-caching. People commonly wander and explore into fringes along city edge.	Middle Country	Middle Country	Back Country
Calico Mountains Subregion	Borders Interstate 15 on south, Fort Irwin Road to west and north, Alvord Mountains to east.	This area includes the rocky, rugged, colorful Calico Hills and historic mining town; Coyote Dry Lake in the north portion. The area is very popular for target shooting, riding OHVs and general exploration. Numerous roads, trails, mines, adits, and diggings are popular for groups, jeep clubs, SRPs, exploration, hiking, equestrian, 4x4 touring and OHV play. The town includes stores, historic cemetery, restaurants, and campground, and is popular with regional, national and international tourists; There is a KOA campground at the freeway. More activities include climbing, photography, painting and commercial photography.	Front Country	Front Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Cronese Lake Subregion	Borders Interstate-15 on south, Fort Irwin to north; west from Coyote Dry Lake east to almost Baker.	This area is remote and rugged with numerous jagged mountains and ranges, scattered small playas, and dry upland desert lands. There are few roads, vast Soda Wilderness Study Area, occasional communication sites, power, pipe and communication lines; mountaintop communication sites and few other developments. Similar to the MTNM subregion TMA this is an ancient, historic and modern day east-west travel corridor and includes portions of Old Spanish National Historic Trail, Mojave Rd, Route 61 and Hwy 15. This is the primary path travel and trade corridor between the west coast and all points east. Cronese Lake was the western border of the Anasazi Empire. The area includes a tank route.	Back Country	Primitive Country	Back Country
El Mirage	Pocket area north of El Mirage, west of Highway 395, east of Los Angeles county and south of Edwards.	This area is relatively flat open desert with few scattered low hills; soft sandy flats, small dry playas and rugged rocky knolls. Numerous roads and trails crisscross the area from years of intensive OHV use, a result of staging and encroaching urban areas. The area has easy access from 3 sides. Activities include hunting (shotguns), scenic touring, communication sites, powerlines, and scattered mines. This area is beginning to see more development on private property.	Middle Country	Primitive Country	Middle Country
Kramer Hills Subregion	West center portion of BFO. West boundary is Highway 395 and east boundary is Helendale Road; north boundary is Highway 59, and south boundary is Silver Lakes.	This is a relatively open area with soft sandy soils in flats and scattered rugged rocky knolls. Long straight roads seem to fade into distance. It provides areas of general exploration for nearby communities, and is popular for motorcycle and scenic touring and OHV play. Developments include scattered mines and powerlines.	Middle Country	Back Country	Back Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Iron Mountain Subregion	Area south of Hwy58, east of Helendale, and north of Route 66.	The major landscape feature is the Mojave River along the TMA southern boundary. Trails and roads in this area are popular for equestrian riding, hiking, scenic touring, 4x4 exploration and OHV play; hunting, photography and bird watching. Features include the Old Spanish National Historic Trail, Mormon Rd., BNSF tracks, historic mines and old stage routes north to Harper and Death Valley.	Middle Country	Primitive Country	Back Country
Ridgecrest Subregion	Includes the community of Ridgecrest. Bounded by China Lake NWS on the north and east, Golden Valley Wilderness on the south, and Highway 395 on the west.	The region abuts the communities of Ridgecrest and Inyokern. The topography includes sloping bajadas, braided washes, and narrow canyons along with the rolling Rademacher, Spangler, and Summit Range (Sand Hills) areas. Recreational opportunities include OHV and four-wheel drive touring, hunting and target shooting, stargazing, photography, exploring mine sites, social gathering, rock hounding, hiking, running, mountain biking, and horseback riding. Prominent recreational destinations include the Rademacher Hills trail system, Goldbug Interpretive Mine Site, and the Spangler Hills Open Area and the neighboring Summit Range	Urban	Rural	Rural
El Paso Subregion	Bounded by Highway 178 on the north, Highway 395 on the east, Garlock and Redrock-Randsburg Road on the south and Highway 14 on the west.	The region consist of prominent volcanic peaks (El Paso Mountains), broad valleys, rolling foothills, badlands, sloping bajadas, braided washes and narrow canyons. Popular recreational pursuits include upland game bird hunting, rock and mineral collecting, cultural site viewing, OHV touring, hiking, camping, mountain biking, horseback riding, along with commercial 4-wheel drive and dual sport tours, and competitive equestrian endurance rides. Recreational destinations include Burro Schmidt Tunnel, Bickel Camp, El Paso Mountains Wilderness, Goler Gulch and Sheep Springs.	Middle Country	Middle Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Rand Subregion	Bounded by Garlock and Redrock-Randsburg Road on the north, Highway 395 and the Kern/ San Bernardino county line on the east, Highway 58 on the south, and Highway 14 on the west.	The bajadas, alluvial fans, and undulating hills that lie between the towns of Randsburg and California City along with scattered sections of land south of California City within eastern Kern make up this area. Recreational activities within the region include OHV trail riding and touring, upland game bird hunting, rock hounding, gold prospecting, hiking, nature study, and photography. Popular destination locations include the Desert Tortoise Research Natural Area, Government Peak, and the living ghost town of Randsburg.	Middle Country	Back Country	Front Country
Red Mountain Subregion	Bounded by Golden Valley Wilderness and 29S Township line on the north, China Lake NWS on the east, Cuddeback Lake Road, Highways 395 and 58 on the south, and the Kern/San Bernardino county line on the west.	This region encompasses rolling hills, steep mountainous terrain of the Lava Mountains, and the flat desert terrain that slopes towards Cuddeback Lake. Recreational activities in the region include upland game bird hunting, wildflower viewing, cultural site viewing, photography, target shooting, dispersed camping, hiking, land sailing, horseback riding, mountain biking, and OHV touring. Additionally one can find many non-mechanized recreational opportunities within the Golden and Grass Valley Wilderness areas. Popular destinations include Steam Well, Red Mountain Spring, and Cuddeback Lake.	Middle Country	Back Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Stoddard Valley Subregion	Area between Victorville and Barstow, south of Highway 15; east boundary is Highway 247, west boundary is Mojave River and is near Slash X	The central portion is the Stoddard Valley OHV area; the north portion borders Mojave river with uses similar to Iron Mountain subregion. The area includes the Old Spanish National Historic Trail, Mormon Rd., Hwy 15, Route 66, springs, Sawtooth campground, climbing, hiking, rock hounding, birding, herping, model rockets, scenic touring, equestrian uses and hunting (shotgun). The area has extensive and intensive human use and sounds, significant urban interface and regular on-going use throughout the area for 4x4 exploration and OHV play, SRPs and commercial filming. The area includes travel facilities, powerlines, pipelines, communication sites, ranches, farms, light industry, large scale cement mines, and a few small scale wind turbines.	Front Country	Rural Country	Front Country
Ord Mountains Subregion	Nearly geographical center of Barstow Field Office. West boundary is Highway 247, east boundary is Camp Rock Road, north boundary is Highway 40 and Barstow, south boundary is Lucerne Valley.	This area is relatively remote in the sense that this area is off-set slightly east of nearby urban areas. It is a popular area for scenic touring with larger mountains separating numerous small valleys. The area has numerous springs and cacti species; ACEC relevance and importance criteria, extensive historic ranching and mining sites, nationally significant modern day infrastructure including communication sites, powerlines and pipelines. Activities include 4x4 and OHV touring, exploration and play, rock collecting, SRPs, commercial filming and grazing.	Middle Country	Back Country	Middle Country

Table 3.6-1. Summary of Recreational Activities in the West Mojave Planning Area

Area ²	Location	Primary Destinations and Recreational Activities	Physical Settings ¹	Social Settings ¹	Administrative Settings ¹
Newberry-Rodman Subregion	Bounded by Interstate 40 to the north, Powerline Road and Twentynine Palms Marine Corps Air Ground Combat Center 29 to the east, Camp Rock Road to the west, and the Johnson Valley Off Highway Recreation Area to the southwest.	This is a rugged area containing large areas of impassable lava flows near Route 66, and rugged mountains further south in the Newberry/Rodman ranges. The area includes the large Rodman Wilderness Area and sites with extensive petroglyphs. The area includes guzzlers, communication sites, historic and active mines, grazing, gravel pits, and on-going gold prospecting; hunting (shotgun) hiking and equestrian uses. The area is popular for scenic touring and photography. Pisgah cinder cone (active commercial mine) combine in unique mars type landscape. The area is popular for scenic touring and photography. It is a relatively remote area with few visitors, yet human sounds are near constant because of intensive ambient sounds associated with transportation activities and low flying aircraft.	Middle Country	Back Country	Back Country
Johnson Valley Subregion	Most of TMA includes Johnson Valley OHV Area and public lands as far south and west as Highway 247.	The major feature in this area is the Johnson Valley OHV Area designated for 4x4 and OHV use, including exploration, touring, play and competition. The area is popular for commercial filming and large scale OHV events and competitions. It includes the Cougar Buttes area popular with trials bike SRP events (KOH, etc),commercial filming, 4x4 touring, and rockhounding. The area includes dry lakebeds, lava flows, rugged mountains, long valleys, springs, Creosote and Yucca Ring plan assemblies, and extensive and large scale mine operations. Sensitive areas are closed and fenced.	Front Country	Front Country	Front Country

¹ Settings are based on BLM Recreational Settings ranging from Urban, Rural, Front Country, Middle Country, Back Country, and Primitive.

² Subregion locations are shown in Figure 2.1-1.

Table 3.6-2. Characteristics of BLM Open Areas

Open Area	Total Size (acres)	Visits (most recent year with available data)	Visitor Days (most recent year with available data)	Principal Recreation Activities	OHV Use Patterns
Dove Springs	3,840	51,662 (2018)	60,794 (2018)	OHV activities include motorcycle hill climbing, ATV/quad use. Non-OHV activities include camping, shooting, and hunting.	The entire Dove Springs open area is used for camping and OHV driving. OHV driving centers on riding up and down the hillsides using all types of OHVs.
El Mirage	25,600	44,939 (2018)	74,495 (2018)	Approximately 50% of the activity is not typical OHV activity (i.e. motorcycles, quads, jeeps). The dry lakebed attracts visitors with experimental vehicles, aircraft, land wind sailors, etc. The predominant OHV activity is motorcycle use.	Most use is concentrated on and around the dry lakebed. Significant motorcycle use takes place away from the lakebed towards the mountains to the northwest. Visitors generally stay on long-established routes. Permitted events, sightseeing, camping, and dispersed camping occur in the area.
Jawbone Canyon	7,000	58,565 (2018)	68,906 (2018)	Predominantly dirtbike motorcycle use engaging in hill climbing activities, as well as dual sport motorcycle and 4WD touring/sightseeing.	Camping areas are concentrated along three miles of the Jawbone Canyon Road. OHV users enjoy the challenge of riding up and down hillsides throughout the canyon. The steepness of the hillsides that riders use varies from moderate to extremely steep.
Johnson Valley	96,000 ¹	179,762 (2018) (combined Johnson and Stoddard)	215,791 (2018) (combined Johnson and Stoddard)	Unrestricted OHV recreation. Predominantly dirt bike motorcycle use, as well as dual sport motorcycle and 4WD touring/sightseeing. Permitted events, camping, and dispersed camping occur in the area.	Primarily “Green Sticker” motorcycle use participating in “trail riding”. Approximately 50% of that use takes place in the form of permitted “organized” events (e.g., races).
Rasor	22,400	7,786 (2018)	12,420 (2018)	Predominantly dirt bike motorcycle use, as well as dual sport motorcycle and 4WD touring/sightseeing. Camping, dispersed camping, and sightseeing occur in the area.	Dispersed OHV use.

Table 3.6-2. Characteristics of BLM Open Areas

Open Area	Total Size (acres)	Visits (most recent year with available data)	Visitor Days (most recent year with available data)	Principal Recreation Activities	OHV Use Patterns
Spangler Hills	62,080	54,175 (2018)	75,018 (2018)	Predominantly dirtbike, motorcycle use, as well as dual sport motorcycle and 4WD touring/sightseeing. Organized competitive events also occur here.	The area provides many OHV routes through open, gentle desert terrain. There are more challenging routes through hills along the sides of the open area. Three popular camping areas are Teagle Wash, Wagon Wheel, and east of US 395.
Stoddard Valley	54,400	179,762 (2018) (combined Johnson and Stoddard)	215,791 (2018) (combined Johnson and Stoddard)	Predominantly dirtbike motorcycle use, as well as dual sport motorcycle and 4WD touring/sightseeing. Permitted events, camping, and dispersed camping occur in the area.	OHV use is widely dispersed. Approximately 50% of the use is estimated to be associated with permitted events. Heaviest use occurs at staging areas. Visitors tend to stay on pre-existing routes as the terrain becomes rougher and as they travel away from the staging areas.
Olancha Dunes	341	14,200 (2018)	8,946 (2018)	Unrestricted OHV recreation. Predominantly ATV and Dune buggy use with some motorcycle use.	The dune system in the area provides a beginner to intermediate level riding experience. This is due to the fact that the dunes are small compared to other dune systems in the CDCA, such as those found at Dumont or the Imperial Sand Dunes. In addition to OHV use the dunes have been used for commercial photography purposes.

1 - This includes the 53,000-acre Shared-Use Area as well as the remaining 43,000 acres which now constitute the Johnson Valley Off-Highway Vehicle Recreation Area in PL 113-66.

The DRECP LUPA designated 14 SRMAs and 3 ERMAs within the WEMO Planning Area. These areas are listed in Table 3.6-3, and shown in Figure 3.6-2. The characteristics and management objectives of each unit are provided in Appendix D of the 2016 DRECP LUPA.

Table 3.6-3. Acreage of SRMAs and ERMAs Within WEMO Planning Area

Unit	Acreage
SRMAs	
East Sierra	49,934
North Searles	50,911
Panamint Valley	148,919
Afton Canyon	18,377
Rasor	23,896
Red Mountain	307,991
Stoddard/Johnson Valley	276,957
Sand to Snow	81,621
Desert Discovery Center	13
El Mirage	17,166
El Paso/Rand	177,254
Jawbone	126,735
Middle Knob	24,490
Superior/Rainbow	115,460
ERMAs	
Cadiz Valley	5,897
Crucero Valley	23,748

3.6.1 Trends

3.6.1.1 General Recreation Trends

Table 3.6-4 provides the numbers of visitors and visitor days at a variety of recreational sites since 1999, including campgrounds, trails, special-interest (archeological and geological) sites, information centers, and OHV areas in the Western Mojave Desert. Table 3.6-4 examines the direct and indirectly affect environment for recreation. In general, use levels at the sites which are non-OHV focused use range on the order of hundreds or thousands of visitors and visitor days per year, as is the level of OHV-focused activities, including OHV Open Areas. This reflects the popularity of OHV and non-OHV use as potential recreational activities in the Planning Area.

Table 3.6-4. Number of Visitors and Visitor Days in Western Mojave, 2008-2018

Area		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Barstow Field Office												
Afton Canyon												
Afton Canyon Campground	Visits	49249	772	752	394	n/a	n/a	n/a	n/a	n/a	1416	641
	Visitor Days	89469	1402	1365	716	n/a	n/a	n/a	n/a	n/a	2520	1164
Afton Canyon Natural Area	Visits	1584	2106	3363	2107	2106	n/a	n/a	n/a	n/a	7788	n/a
	Visitor Days	383	509	813	509	509	n/a	n/a	n/a	n/a	1882	n/a
Afton Group Area Campground	Visits	418	557	838	556	556	n/a	n/a	n/a	n/a	520	n/a
	Visitor Days	766	1021	1537	1019	1019	n/a	n/a	n/a	n/a	953	n/a
Dispersed Use Afton Canyon	Visits	3428	4561	7664	4561	4561	n/a	n/a	n/a	n/a	0	0
	Visitor Days	837	1114	1871	1114	1114	n/a	n/a	n/a	n/a	0	0
Mojave Road	Visits	3646	5193	8312	6295	5257	n/a	n/a	n/a	n/a	2450	n/a
	Visitor Days	608	866	1385	1049	876	n/a	n/a	n/a	n/a	408	n/a
Total Afton Canyon	Visits	58325	13189	20929	13913	12480	n/a	n/a	n/a	n/a	12174	641
	Visitor Days	92063	4912	6971	4407	3518	n/a	n/a	n/a	n/a	5763	1164
Calico Early Man Site	Visits	1195	1590	2886	2161	1588	1589	1589	0	0	0	0
	Visitor Days	208	277	1776	673	277	277	277	0	0	0	0
Dispersed Use Barstow	Visits	348117	463958	735801	463729	463798	463151	463573	628	0	0	0
	Visitor Days	199320	267357	421596	266645	267802	265552	266433	60	0	0	0
Juniper Flats Intensive Use Area	Visits	4832	6405	9638	6422	6422	6421	6421	0	0	6238	6179
	Visitor Days	1015	1345	2024	1349	1349	1348	1348	0	0	1310	1298
Lucerne Dry Lake Specialized Sport Site	Visits	913	964	1829	1099	917	1142	1107	190	0	2002	2,102
	Visitor Days	786	809	6122	916	764	1193	992	190	0	1668	1752
Mojave Road	Visits	533	711	1124	712	712	711	711	0	0	947	911
	Visitor Days	89	119	187	119	119	118	119	0	0	158	152
Total Barstow, Extensive	Visits	355590	473628	751277	474123	473437	473014	473401	818	0	921602	975606
	Visitor Days	201418	269907	431705	269702	270311	268488	269169	250	0	529240	563136
Information Center	Visits	3634	11	9395	0	5493	5491	4826	0	12591	12250	12188
	Visitor Days	345	1	893	0	522	522	458	0	1196	1164	1158
Dispersed Use Desert Discovery Center	Visits	493	5040	8063	0	4831	4830	0	0	0	4326	4245
	Visitor Days	41	420	672	0	403	402	0	0	0	361	354

Table 3.6-4. Number of Visitors and Visitor Days in Western Mojave, 2008-2018

Area		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Desert Discovery Center	Visits	4127	5051	17458	0	10324	10321	4826	0	12591	16576	16433
	Visitor Days	386	421	1565	0	925	924	458	0	1196	1525	1512
Dispersed Use El Mirage	Visits	83683	116356	170401	66684	95264	69542	68515	1281	79133	110140	44939
	Visitor Days	141793	196441	276768	119591	179835	120529	117663	320	134957	187905	74495
Total El Mirage	Visits	83683	116356	170401	66684	95264	69542	68515	1281	79133	110140	44939
	Visitor Days	141793	196441	276768	119591	179835	120529	117663	320	134957	187905	74495
Dispersed Use Rasor	Visits	3078	4998	6509	4349	4095	4096	4096	0	0	6122	6092
	Visitor Days	6133	9959	12969	8665	8159	8161	8161	0	0	12198	12138
Mojave Road	Visits	1497	1992	2988	1992	1992	1990	1990	0	0	1592	1694
	Visitor Days	250	332	498	332	332	332	332	0	0	265	282
Total Rasor	Visits	4575	6990	9496	6341	6087	6086	6086	0	0	7714	7786
	Visitor Days	6383	10291	13467	8997	8491	8493	8493	0	0	12463	12420
Anderson Dry Lake Staging Area	Visits	11583	12236	31132	14677	15256	12316	12235	0	0	12982	12737
	Visitor Days	13587	11216	34050	20035	20637	11552	11215	0	0	11900	11676
Cougar Buttes Intensive Use Area	Visits	8252	8391	13657	10231	10537	8557	8786	0	0	8493	8370
	Visitor Days	7842	5649	9561	13737	11754	5840	6521	0	0	5719	5636
Dispersed Use Stoddard/Johnson	Visits	77330	149053	157663	98722	97432	100567	92665	93937	3611	104128	71657
	Visitor Days	94117	242937	215208	126960	128846	126824	108565	7978	7481	117793	82109
Means Dry Lake Intensive Use Area	Visits	4520	15698	24592	21616	38332	41354	6593	0	0	1241	53545
	Visitor Days	3718	12585	89175	120197	317292	342734	12170	0	0	995	90347
Sidewinder Road Staging Area	Visits	5558	6974	16215	9568	8179	7403	7403	0	0	9119	9840
	Visitor Days	4159	5219	27336	8464	6121	5540	5540	0	0	6824	7364
Slash-X Staging Area	Visits	10730	4872	7311	8599	4871	5821	4931	0	0	6904	9840
	Visitor Days	26875	3638	5459	11706	3637	5141	3680	0	0	5155	7364
Soggy Dry Lake Intensive Use Area	Visits	15238	15762	26501	19146	14772	15762	15762	0	0	15246	16435
	Visitor Days	20148	12754	27283	21442	12389	12754	12754	0	0	12337	13299
The Rockpile Staging Area	Visits	10615	14123	22695	14124	14623	14122	14122	0	0	12777	0
	Visitor Days	7439	9898	17842	9899	10815	9897	9897	0	0	8955	0
Total Stoddard and Johnson	Visits	143826	227108	299766	196683	204002	205902	162497	93937	3611	170890	179762
	Visitor Days	177885	303896	425914	332440	511491	520282	170342	7978	7481	169678	215795
Dispersed Use	Visits	4354	5451	8836	5520	5555	5530	5530	0	0	11296	11472

Table 3.6-4. Number of Visitors and Visitor Days in Western Mojave, 2008-2018

Area		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Superior/Rainbow	Visitor Days	1622	2030	3655	2235	2186	2060	2060	0	0	4208	4273
	Visits	1585	2106	3346	2227	2106	2106	2106	0	0	2001	315
Harper Dry Lake	Visitor Days	264	351	558	371	351	351	351	0	0	334	1891
	Visits	2000	1025	925	748	134	1639	1508	908	868	1230	2505
Owl Canyon Campground	Visitor Days	3665	1878	1696	1371	246	3003	2763	1664	1591	2254	4590
	Visits	592	787	1184	1253	788	788	1477	0	0	870	953
Owl Canyon Group Campground	Visitor Days	1064	1415	2128	2252	1416	1416	2655	0	0	1564	1713
	Visits	3310	4477	9945	4999	4999	5000	5000	0	0	4692	4519
Rainbow Basin Natural Area	Visitor Days	662	895	1989	1000	1000	1000	1000	0	0	938	904
	Visits	11841	13846	24237	14747	13582	15063	15621	908	868	20089	21340
Total Superior/Rainbow	Visitor Days	7277	6569	10026	7229	5199	7830	8829	1664	1591	9298	11795
	Visits	661967	856168	1293564	772491	815176	779928	730946	96944	96203	1362155	1298627
Total for Barstow Field Office	Visitor Days	627205	792437	1166416	742366	979770	926546	574954	10212	145225	1243986	1017985
	Visits	21164	23298	23300	22836	22902	21859	22013	24151	29568	30447	29107
Dispersed Use Eastern Sierra	Visitor Days	19400	21356	21358	20933	20994	20037	20162	22086	27104	28341	27520
	Visits	19527	18648	19500	18720	9572	9211	9186	10000	11945	12221	12001
Owens Peak Trailhead	Visitor Days	18290	17467	18265	17534	8966	8628	8604	9367	10770	11019	10821
	Visits	3784	3621	3712	3608	3706	3673	3687	3899	5121	5300	5210
Sacatar Trailhead	Visitor Days	3248	3108	3186	3097	3181	3153	3165	3347	4396	4549	4472
	Visits	13421	11598	12177	11924	11503	12000	11834	14532	15962	16632	16230
Short Canyon Trailhead	Visitor Days	5285	4567	4795	4695	4529	4725	4660	5722	6285	6549	6391
	Visits	57896	57165	58689	57088	47683	46743	46720	52582	62596	64600	62548
Total Eastern Sierra	Visitor Days	46223	46498	47604	46259	37670	36543	36591	40522	48555	50458	49204
	Visits	7502	6301	6020	5939	6223	5999	6087	6257	7001	7152	7154
Boral Corral Pit Shooting Range	Visitor Days	1188	934	878	866	908	875	888	912	1021	1043	1043
	Visits	40139	46573	49188	47712	48270	47751	49331	51310	51216	52386	52837
Dispersed Use El Paso Mountains	Visitor Days	31089	35762	37921	36977	37275	37007	38228	39737	39692	40995	41786
	Visits	22045	500	733	779	752	743	3677	3702	5325	5794	5801
El Paso Mountains Trailhead	Visitor Days	16166	367	467	528	551	545	2663	2715	3905	4239	4248

Table 3.6-4. Number of Visitors and Visitor Days in Western Mojave, 2008-2018

Area		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Last Chance Canyon Trailhead	Visits	3587	100	36555	3590	36455	3625	3354	3765	4859	4745	4852
	Visitor Days	5485	153	55899	5490	55746	5543	5129	5757	7430	7256	7420
Total El Paso Mountains	Visits	73273	53474	92496	58020	91700	58118	62449	65034	68401	70077	70644
	Visitor Days	53928	37216	95165	43861	94480	43970	46878	49121	52048	53533	54497
Cache Peak PCT Trailhead	Visits	5803	5826	5900	5889	5815	5779	5759	5670	5584	5601	5609
	Visitor Days	10349	10390	10522	10502	10370	10306	10270	10112	9958	9988	10003
Desert PCT Trailhead	Visits	7988	7821	8000	7801	7813	7552	7543	8321	8336	8442	8419
	Visitor Days	14245	13947	14267	13912	13933	13468	13452	14839	14866	15055	15014
Dispersed Use Mojave	Visits	23598	24607	24611	24365	24590	24536	24627	26321	26500	26640	26691
	Visitor Days	31956	32807	33326	32994	33037	33226	33349	35643	35885	36111	36033
Total Mojave	Visits	37389	38254	38511	38055	38218	37867	37929	40312	40420	40683	40719
	Visitor Days	56550	57144	58115	57408	57340	57000	57071	60594	60709	61154	61050
Desert Tortoise Natural Area	Visits	38765	9325	9675	9486	9512	9121	9109	10003	9996	10001	9899
	Visitor Days	9174	2207	2290	2245	2251	2159	2156	2367	2366	2367	2343
Dispersed Use Rand Mountain	Visits	5702	5828	6524	6263	6345	6333	6381	6472	7589	7884	7951
	Visitor Days	3578	3783	3773	3591	3638	3635	3669	3717	4351	4532	4572
Rand Mountain and Fremont Valley Intensive Use Area	Visits	50007	44297	50009	39900	40017	48439	65576	58530	68500	68682	68700
	Visitor Days	25545	22628	25544	20382	20442	24762	56259	71163	83285	83506	528
Total Rand Mountain	Visits	94474	59450	66208	55649	55874	63893	81066	75005	86085	86567	86550
	Visitor Days	38297	28618	31607	26218	26331	30556	62084	77247	90002	90405	90443
Dispersed Use Red Mountain	Visits	46490	48971	49696	48571	49106	49033	50832	52248	53789	53885	54063
	Visitor Days	84960	89310	89798	88724	88993	89659	92808	95527	98389	98470	98618
Golden Valley Trailhead	Visits	4291	3921	4154	3898	4035	4022	4031	4643	5555	5553	5500
	Visitor Days	2396	2189	2317	2176	2253	2246	2251	2592	3102	3100	3071
Grass Valley Trailhead	Visits	8297	8045	8150	7980	8127	8085	8073	8765	9652	9701	9705
	Visitor Days	4632	4492	4550	4456	4538	4514	4507	4894	5389	5416	5419
Spangler OHV Area	Visits	26157	27331	27725	2389	2549	25559	26854	29046	50159	52277	54175
	Visitor Days	66186	76093	72844	1821	6309	35804	36164	39652	70264	72294	75018
Steam Wells	Visits	1327	1306	1340	1314	1213	1301	1322	1540	2000	1899	1900
	Visitor Days	387	381	391	383	354	379	386	449	583	554	554

Table 3.6-4. Number of Visitors and Visitor Days in Western Mojave, 2008-2018

Area		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Summit Range Intensive Use Area	Visits	7955	7943	7999	7859	7903	7768	7788	7878	7785	7789	7990
	Visitor Days	7027	7016	7066	6942	6981	6862	6879	6959	6877	6880	6881
Total Red Mountain	Visits	94517	97517	99064	72011	72933	95768	98900	104120	128940	131104	133133
	Visitor Days	165588	179481	176968	104502	109428	139464	142995	150073	184604	186714	189561
Argus Range Trailhead	Visits	21006	19985	20017	19216	19248	9197	9185	8656	8456	8512	8510
	Visitor Days	18905	17987	18015	17294	17323	8277	8267	7790	7610	7661	7659
Ayers Rock	Visits	1786	1763	1776	1769	1782	1699	1689	1721	2320	2351	2400
	Visitor Days	149	147	148	147	149	142	141	143	193	196	200
Briggs Cabin	Visits	NA	2319	NA	NA	2273	2251	2198	1676	1602	1632	1640
	Visitor Days	NA	2551	NA	NA	2500	2476	2418	1844	1762	1795	1804
Coso Range Trailhead	Visits	2351	2243	2300	2208	2198	2187	2153	1976	2000	2058	2000
	Visitor Days	4898	4673	4792	4600	4579	4556	4485	4117	4167	4288	4167
Darwin Falls Trailhead	Visits	3587	3421	3541	3470	3434	3468	3458	4001	3995	4032	4015
	Visitor Days	3766	3592	3718	3644	3606	3641	3631	4201	4195	4234	4216
Dispersed Use Ridgecrest	Visits	22024	24013	24768	25172	26694	24898	25489	28301	41110	41789	42046
	Visitor Days	19011	20472	21454	21534	23239	21060	21603	23963	34772	35847	36465
Fossil Falls Trailhead	Visits	31571	31549	31560	30361	30373	30401	30387	31158	29512	30232	29999
	Visitor Days	25494	25476	25485	24517	24526	24549	24538	25160	23831	24412	24224
Fossil Falls Campground	Visits	177	155	233	215	199	177	495	554	707	695	726
	Visitor Days	118	103	155	331	306	273	763	854	1090	1071	1119
Keynot Mine Cabin	Visits	NA	168	NA	NA	102	72	68	85	100	101	99
	Visitor Days	NA	95	NA	NA	58	41	39	48	57	57	56
Kopper King Cabin	Visits	NA	32	NA	NA	36	29	31	41	45	48	45
	Visitor Days	NA	18	NA	NA	20	16	18	23	26	27	26
Lower Centennial Canyon Cabin	Visits	1782	1695	1699	1611	1615	1585	1578	1787	0	1777	1778
	Visitor Days	1010	961	963	913	915	898	894	1013	0	1007	1008
Olancho Dunes OHV Area	Visits	14784	14206	14212	13578	13584	13591	13159	14101	14121	14126	14200
	Visitor Days	9314	8950	8954	8554	8558	8562	8290	8884	8896	8899	8946
Rademacher Hills Intensive Use Area	Visits	69480	69354	69774	69624	69504	70000	70062	78878	79101	79912	79397
	Visitor Days	24784	24736	24808	24815	24790	24967	24962	28137	28213	28610	6536

Table 3.6-4. Number of Visitors and Visitor Days in Western Mojave, 2008-2018

Area		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ridgecrest Field Office Information Center	Visits	1854	1116	1120	998	2124	760	781	877	900	1086	1100
	Visitor Days	1125	67	68	60	1775	46	53	59	54	70	513
Salt Wells Corrals Information Center	Visits	27287	26973	27001	26482	26648	26251	25384	27321	28211	28215	31357
	Visitor Days	1160	1146	1148	1125	1133	1116	1079	1161	1199	1199	1333
Trona Pinnacles	Visits	23356	24687	24692	24454	24532	24605	26843	29953	30100	30110	31000
	Visitor Days	21410	22630	22634	22416	22488	22555	24606	27457	27592	27601	28417
Total Ridgecrest	Visits	221045	223679	222693	219158	224346	211171	212960	231086	242280	261029	261947
	Visitor Days	130131	133604	132342	129950	135965	123175	125787	134854	143657	155876	133507
Bright Star Trailhead	Visits	3021	2900	2847	2790	2815	2801	27682	28543	28456	18228	18230
	Visitor Days	5035	4833	4745	4650	4692	4668	46137	47572	47427	30380	30383
Cameron Ridge PCT Trailhead	Visits	6687	5803	5821	5762	5780	5801	5736	6543	6600	5020	5100
	Visitor Days	11925	10349	10381	10276	10308	10345	10229	11668	11770	8952	9095
Dispersed Use Southern Sierra	Visits	53007	51993	48596	64000	60824	61221	61391	65520	65502	65391	65451
	Visitor Days	71250	69403	65233	86027	81488	82291	82476	87969	88046	87932	87810
Dove Springs OHV Area	Visits	50138	54150	73747	45000	54597	52736	49083	50742	51500	51552	51662
	Visitor Days	149369	191071	219705	134063	162654	157109	57761	59680	60641	60702	60794
Dove Springs PCT Trailhead	Visits	6759	6191	6196	6022	6164	6009	5987	5789	5800	5863	5864
	Visitor Days	12054	11041	11050	10739	10992	10716	10677	10324	10343	10456	10457
Jawbone OHV Area	Visits	53574	47337	87820	51000	52259	51899	51674	52853	4000	58825	58565
	Visitor Days	159517	140897	259454	151853	155601	154529	60812	62140	4710	69266	68906
Jawbone Station Information Center	Visits	10631	6575	4425	5514	400	4087	5761	7514	0	4084	3600
	Visitor Days	461	285	192	239	174	177	317	413	0	225	198
Kiavah Trailhead	Visits	21491	15985	15867	15231	15344	15302	15067	15678	15599	15600	15558
	Visitor Days	35818	26642	26445	25385	25573	25503	25112	26130	25998	26000	25930
Robbers Roost Climbing Area	Visits	5978	5550	5347	5293	5249	5176	4697	4990	5000	5012	5011
	Visitor Days	2690	2498	2406	2382	2362	2329	2114	2246	2250	2255	2255
Total Southern Sierra	Visits	211286	206484	250126	200612	207054	205032	227078	238172	182457	229575	229041
	Visitor Days	448119	457019	599611	425614	453844	447667	295635	308142	251185	296168	295828
Total Ridgecrest Field Office	Visits	789880	736023	827787	700593	737808	718592	767102	806311	811179	971093	970360
	Visitor Days	938836	939580	1141412	833812	915058	878375	767041	820553	830760	946284	925396

California's population is increasing rapidly. The State's population is projected to grow from 34 million in 2000 to 46 million by 2035 (California Department of Finance 2013). The population of the planning area is projected to grow from 795,000 in 2000 to more than 1.5 million people by 2035. This increase in population is reflected in an increase in use of public lands for recreation throughout the Planning Area, as shown in Table 3.6-4. The total levels of recreational use are about the same in the Barstow and Ridgecrest Field Office areas, on the order of about 800,000 to 1 million visitors and visitor hours in each area in 2012. This level of use is approximately double the levels in both areas in 1999.

3.6.1.2 Trends in OHV Use

California has the greatest number of OHV recreation enthusiasts in the country. Its 3.5 million recreationists constitute 14.2% of all California households. Since 1980, however, the number of acres available to OHVs for dispersed recreation has decreased 48 percent in California's deserts alone (from 13.5 million acres in 1980 to 7 million acres in 2000). At the same time, OHV "green sticker" registrations have increased by 108%. Attendance at the State of California's State Vehicular Recreation Areas (SVRAs) increased from 1985 to 2000 by 52%. Registration of OHVs through the California Department of Motor Vehicles increased from 235,003 in 1980 to a peak of 1,135,919 in 2008. Since 2008, the number has declined every year to 905,366 in 2013.

OHV Vehicle Trends: Californians have embraced the sport utility vehicle (SUV). As SUV sales increase, the demand for off-highway opportunities for SUV owners is also on the rise. Simultaneously, there have been notable declines in motorcycle sales in California concurrent with steady increases in ATV and SUV sales. As a consequence, there appears to be a trend toward wider trails for larger off-highway vehicles as opposed to single-track trails used for motorcycling.

The Recreational Off-Highway Vehicle (ROV) is fast becoming the OHV of choice due to its size (smaller than a truck/SUV but larger than an ATV) and cost. Sometimes referred to as side-by-sides or UTVs, ROVs are motorized off-road vehicles designed to travel on four or more non-highway tires, with a steering wheel, non-straddle seating, seat belts, an occupant protective structure, and engine displacement up to 1,000cc. Most current models are designed with seats for a driver and one or more passengers. ROV manufacturers are continuing to expand their designs and have developed a single seat model along with a model that is for an operator that is age 10 or older.

The increase in California's population has caused significant increases in urban development. Expansion of development in high desert cities may reduce the land area available for rural OHV recreation areas, and has occurred against a backdrop of decreasing availability of public land access and use. The expansion of the Twenty-Nine Palms Marine Base resulted in an additional withdrawal of 152,500 acres, of which 98,547 acres was public land available to motorized and non-motorized recreational use. This is the loss of 98,547 from the largest OHV Area in the U.S. A portion of this area, approximately 53,000 acres of public lands, is managed as a Shared Use Area (SUA). The (SUA) is available for 10 months of the year for recreational use, including the King of the Hammers event.

The listing as threatened or endangered of species and conservation of sensitive habitats has also resulted in a general decrease to OHV Open use. Wilderness designations have also resulted in

large areas that are no longer accessible to OHV Open use or OHV Limited use. Air pollution controls imposed by the California Air Resources Board's Red Sticker Program have restricted the use of two-cycle engine motorcycles in OHV riding areas to a limited number of months in the year instead of year-round. OHV touring on popular historic trails has been minimized to preserve the historic integrity of the trails, making them less accessible to many users.

The levels of OHV use have generally not been affected by livestock grazing. Both OHV use and grazing use varies widely at any particular time in grazing allotments, but few conflicts occur between these two uses, whether or not stocking rates are high or low. Where range fences are built to restrict and direct cattle movements, route access on OHV Open routes is maintained and cattle movements are restricted at openings in fences across OHV Open routes using cattle guards or gates. Major OHV restrictions at range improvements in grazing allotments are generally for resource protection, such as riparian areas, rather than due to grazing activities and conflicts. OHV Trends are generally unaffected by stocking rates or the retirement of allotments.

Access for Disabled and the Elderly: A few improved non-motorized trails have been developed on public land to provide better access and use for the disabled and elderly. The number of these trails is limited by the resources available for intensive design costs and maintenance levels. Also, these publics desired experiences not readily available on other federal and State lands. Therefore, access for disabled and elderly focus on providing and enhancing OHV touring opportunities. In 1994, surveys were conducted at the Oceano Dunes SVRA. This survey revealed that approximately 9% of all those surveyed had within their group a disabled individual who was able to access and use the dunes and beach because vehicles were allowed in those areas. Increasing numbers of senior citizens want to experience remote outdoor areas via OHVs. As the baby-boomer population continues to age, they find it increasingly difficult to access these areas without the use of off-highway vehicles.

Behavioral Trends: OHV Open use can be for a variety of purposes, including economic pursuits, to access private property, and for recreation such as touring, hunting, accessing trailheads or unique resource values, and rockhounding. With expanded leisure time, conflicts have arisen between those who use vehicles as a means of access and those who operate vehicles as a recreational activity. Safe access by the public to the desert is primarily provided by motor vehicle. However, many members of the public are concerned that increased use of OHVs decreases the unique values, such as scenic values and quiet spaces, which attract many recreationists to the desert. As use levels increase, available land for recreational pursuits decreases, and local landowners are concerned with trespass by OHV recreational users.

Tread Lightly is a national nonprofit OHV organization with a mission to promote responsible recreation through ethics education and stewardship programs. Tread Lightly's environmental educational message, along with its training and restoration initiatives are strategically designed to instill an ethic of responsibility in OHV enthusiasts. Their program is long-term in scope with a goal to balance the needs of the people who enjoy outdoor recreation with our need to maintain a healthy environment. This program has educated many OHV users on being respectful and responsible land users.

At the El Mirage OHV Area there is a program for youth called Junior Ranger Program specifically designed for responsible off-road riding behavior. Either a BLM Park Ranger or an employee of the Friends of El Mirage will teach a group of young people about the principles of safe riding with the addition goal of gaining an appreciation of their riding environment. The

program is free to the public and is offered most weekends during the riding season. The program promotes principles of responsible outdoor recreation to empower youth to do their part and help sustain OHV recreation.

OHV enthusiasts have donated their time to projects combating erosion, replanting recently burned forests, trash collection, renovating trails to improve rider safety, patrolling of OHV areas, being campground hosts, and more to promote responsible use. Such volunteerism is an indication of the commitment that most OHV enthusiasts share to conserve the environment and future opportunities to experience the desert.

Technological Improvements: OHV manufacturers have made huge strides in improving their vehicles to minimize excessive noise. Since 1990, noise levels from motorcycle dirt bikes have decreased from 96 to 88 decibels. Noise reduction can also be accomplished by utilizing specific design and construction techniques in OHV areas, through careful trail planning and construction of berms to impede or dissipate sound. Further technological innovations are being made to reduce noise, and air pollution.

3.6.2 Off-Highway Vehicle Use

Users of OHVs engage in many different types of recreation in the Mojave Desert. These can be categorized into two general groups: (1) where the driving of the vehicle is itself the recreational activity, and (2) where the vehicle is a means of access to other forms of recreation.

3.6.2.1 Driving OHVs for Recreation

There are various types of OHV recreation. These include general vehicular touring, motorcycle recreation, UTV, ATV and four-wheel-drive use (4WD). These are the primary types of vehicular use to enter and exit recreation areas. The BLM utilizes a Recreation Management Information System (RMIS) to collect visitor data. In Table 3.6-4, the number of visits for each recreation area that can be accessed with OHVs within the Barstow and Ridgecrest Field Office boundaries is displayed. Needles and Palm Springs Field Offices were not included in the driving OHVs recreation affected environment because the portions of those field offices within WEMO do not directly support OHV recreation. The Palm Springs Field Office area within WEMO is primarily checkerboard lands with a section of the Sand to Snow National Monument and, the Needles Field Office area is bounded by highway and Twentynine Palms Marine Corps Base.

Motorcycle Recreation

Many desert recreationists engage in motorcycling and motorcycle events. In most (but not all) cases, the motorcycles, equipment and supplies have to be transported to the desired locations by street-legal vehicles, such as SUVs. Motorcycle touring provides a unique opportunity to get off the beaten path and experience areas of the WEMO Planning Area that are not accessible to other OHV users.

One popular activity is dual sport motorcycling. Dual sport motorcycles are designed to perform off-road, and they are also “street-legal” for operation on paved roads. Therefore, the use of a street-legal vehicle to transport the bike is not necessary. A person using this type of motorcycle can enjoy riding on the highway, and then go off-road when the desired trail is reached. The dual sport motorcycle gives the rider a broader and more flexible recreational experience.

There are also many popular motorcycle events that occur in the study area, including enduros, hare n’ hound, hare scramble, and European scrambles. These events allow participants to ride in varying types of terrain, which present different challenges and require varying degrees of skill. Many of these events occur in OHV Open Areas, on a fairly regular basis. Several types of events also can occur on the designated competitive “C” routes outside of Open Areas. Table 3.6-5 presents a descriptive summary of motorcycle events that can occur outside of OHV Open Areas on the “C” routes in the WEMO Planning Area.

Table 3.6-5. Types of Motorcycle Events Outside of OHV Open Areas

Name	Type of Start	Speed Event?	Comments
European Scramble	Mass	Y	The race course is ten miles, using a mass start by class.
Hare Scramble	Mass	Y	The race course contains a 30 mile loop repeated for stronger riders.
Hare & Hound	Mass	Y	The race course is two thirty-mile loops configured as a figure 8, not repeating the same track in the second loop. The second loop continues with only the more advanced riders.
Enduro	Staggered	N	This is a time-controlled event and speeds can be slowed through sensitive areas. Riders lose two points for every minute they are early to the finish and one point for every minute they are over the specified course time.
Dual Sport Ride	NA	NA	This is a tour event and portions of the ride can be on paved routes as well as off road. The participant numbers can be limited to 50 to 100 entrants and speeds can be limited as well.

Each year there are a few commercial tours and dual sport rides that take place on BLM land. These activities generally use well-defined public land vehicle routes. These tours typically involve motorcycle and 4WD sightseeing and exploration tours. There are generally two types of commercial tour events: guided and unguided (self-guided), which are described below.

- **Guided Tours:** A typical guided tour operator might lead three to ten tours each year, with participants following a trail leader. The group stops together several times during the day to see and learn about various natural and manmade features. The trip leader is generally an expert on the particular area and is able to relay information pertaining to natural and historic resources to participants. These are often organized by local or regional natural history, geology, or environmental clubs or educational institutions.
- **Unguided Tours (including Dual Sport Events):** Dual Sport Events, those events designed for street-legal motorcycles capable of off highway travel, are the best example of unguided tours. In these events, participants are given a map and “Roll Chart” that depict the tour route turn by turn. There is no element of competition so participants may arrive at the final destination at their convenience. Often “bail out” opportunities are identified so that participants can safely leave the off highway portion of the route to return to paved roads and the final destination on their own.

ATV and “Technical” 4WD Recreation

ATVs are small motor vehicles with wheels or tractor treads for traveling over rough ground. They often have 4WD capability. ATVs are often viewed as being more agile than other 4WD vehicles and can use narrower routes since they are relatively small and handle like motorcycles. ATVs, however, are only allowed to accommodate one person unless designed for two by the manufacturer. ATVs are not appropriate for dual sport activities, since they are not legal on public highways.

Typical 4WD vehicles (SUVs and jeeps) have fairly similar capabilities, including the capability to travel off-road on rocky terrain. They are significantly larger than ATVs, as they can accommodate several passengers, supplies and equipment. 4WD vehicles such as SUVs and jeeps often have “dual sport” capabilities and perform efficiently both on regular streets, roads, and highways, as well as off-road. SUVs are generally used to traverse relatively flat, yet rough, terrain, while jeeps with their narrower and shorter wheelbase are more capable of negotiating rougher terrain than a typical stock SUV.

Technical 4WD vehicles constitute a class of vehicle that includes jeeps, trucks, and SUVs that have been significantly modified from their “stock” condition. Through the addition of specialty tires, transmissions, engines, and suspensions, these vehicles are less functional in open-highway situations, but very effective in traversing otherwise impassable routes (e.g. large boulders). “Rock-crawling” is an example of an activity that utilizes vehicles of this class. Travel is typically very slow (i.e. less than 5 mph) over and around rocks, in contrast to SUV and even jeep touring. Enthusiasts must possess a high level of technical “four-wheeling” skill. They may even employ the use of power winches to pull the vehicle over the more difficult rock formations. The challenge in technical 4WD use is to apply one’s skills to cross the rocks, rather than tour large regions.

Competitive Events

BLM permits within the planning area hosts about 90 competitive events annually. These include about 70 OHV events and 20 equestrian, mountain biking and running events. Most of these events occur in the Spangler Hills, Stoddard, and Johnson Valley Open Areas.

The current system of Competitive “C” routes are designated routes outside of the Spangler Hills Open Area upon which competitive OHV races are allowed to occur. The designation of the original system of “C” routes to the northeast, south, and west of the Spangler Hills OHV Open Area, comprising approximately 50 miles, occurred in the OHV Area Management Plan (1993). During the development of the Spangler Hills OHV Area Plan many public comments wanted to see the Spangler Hills OHV Open area expanded to include as much as possible of the original Desert Plan’s 1980 Spangler/Rademacher Open Area Planning Unit. In response to these comments, the concept of the “C” routes was developed—to provide for some competitive OHV opportunities in the area while maintaining the natural character of the landscape.

Prior to the implementation of the CDCA Plan, competitive events were very popular in the desert and occurred both in and outside of Open areas. The Summit Range area south of the Spangler Hills was classified as an Open Area; thus cross-country travel was allowed. The CDCA Plan changed the Summit Range area to a limited use area, and the MUC in the area to moderate use. Therefore, after 1980 vehicles were required to stay on existing routes of travel. The CDCA Plan specifically allowed for competitive events on all existing routes of travel in

limited use areas as long as mass starts and camping remained inside open areas. The area was used in this manner until the temporary listing of the desert tortoise in August, 1989. From 1989 until 1993, no competitive events occurred outside of Spangler Hills or other Open Areas.

With the adoption of the Spangler Plan (pg. 14) and supporting BO (pgs. 2, 6-8), from 1993 until 2001 competitive OHV events were allowed to take place under permit on the designated “C” routes. In 2001 competitive events were discontinued on the “C” routes as a result of the Stipulated Settlement Agreement reached between the BLM and the Center for Biological Diversity. In 2006 “C” routes were partially reopened with the WEMO Plan ROD being signed. The 20 miles to the northeast were reopened to competitive use while the southern and western area routes were not (2005 WEMO Final EIS pg. 2-163). The 2016 DRECP LUPA also provides guidance and policy for use of “C” routes in Ridgecrest.

Similarly in 1980, three competitive corridors were identified to provide long-distance opportunities for competitive OHV races to cross through limited use lands. None of these have been run since the designation of critical habitat in the WEMO Planning Area in 1989. Three of the four have been subsequently eliminated in the land-use plans. Routes used in the past for the competitive events generally are now used for long-distance opportunities for non-competitive OHV events.

The Stoddard Valley to Johnson Valley non-competitive connector route was illustrated generally on the oversize maps accompanying the 2006 WEMO Plan (Maps 2-1, 2-15, 2-16, 2-17, 2-19 and 2-21). Slight deviations from the illustrated path have been made to avoid private land where permission to cross has been denied.

Non-motorized competitive events in the planning area are not necessarily restricted to designated routes of travel. These events, because they are competitive, do require a permit and will have an identified course. Non-motorized or non-mechanized events are generally directed to designated routes out of resource concerns, and staging areas may be restricted or precluded in areas based on their location or elements of ACEC or other activity plans. Non-participant OHV support vehicles would be restricted to specified designated routes of travel.

Compliance With Regulations

Compliance has generally improved since the implementation of the CDCA plan. With the exception of a few areas, OHV free play has gradually moved to the OHV open areas. Compliance is most problematic in popular areas of historic OHV use and adjacent to local communities. Compliance has been most effective when a pro-active approach to vehicle management is used, including the identification of outstanding recreation opportunities to direct recreationists to, such as through quality signing and mapping to help visitors locate appropriate opportunities, as well as through enforcement and additional education efforts. Limitations to resources, including sign replacement, law enforcement and rehabilitation resources have historically been issues in further improving compliance.

3.6.2.2 Driving OHVs to Access Other Recreation Uses

Many visitors use a vehicle as a means to attain a recreation end, rather than as the end itself. This recreation type falls into two classes: (a) point and (b) dispersed forms of recreation.

Point Forms of Recreation

Often an OHV is driven to a specific destination such as a scenic geologic or cultural site, trailhead, staging area, or campsite. For instance, equestrians use an OHV to tow horse trailers and other equipment to designated staging areas where they can set up for horseback riding. The recreational activity is not the driving of the OHV itself; it is merely used to access the staging area for the equestrian ride. Similarly, hikers may use an OHV to travel to a trailhead; once there, the recreationist would then begin their hike.

Dispersed Forms of Recreation

This form of recreation is more dependent upon vehicle use than point forms of recreation, but the use of the vehicle is still not viewed as the primary source of recreation. For instance, a recreationist who desires to photograph a particular species of wildlife or wildflower may hike, ride a horse or use an OHV to search for a subject. Driving a vehicle is not the primary recreation; photography is. Because there is no specific destination, this form of recreation is referred to as “dispersed” rather than “point.”

3.6.3 Non-Motorized Use (Mechanized and Non-Mechanized)

The public lands along with the designated road and trail systems provide many opportunities for travel by both mechanized and non-mechanized means. Mechanized travel is moving by means of a mechanical device that is not powered by a motor such as a bicycle or landsailer. While non-mechanized travel is movement by foot, horseback, or other animal-powered travel. Common forms of non-motorized travel that occurs within the WEMO Planning Area include mountain biking, land sailing, horseback riding, backpacking, running, walking, and hiking.

Many non-motorized and non-mechanized activities occur on more remote multiuse trails that also accommodate motorized users. Popular camping areas including Afton Canyon, Rainbow Basin/Owl Canyon, Sawtooth Canyon, Sand Canyon and Short Canyon. These popular destinations serve as staging areas for non-motorized exploration of the surrounding area.

The Rademacher Hills Trail (RHT) is a 14 mile network of trails which extends through the desert terrain on the south side of Ridgecrest. The RHT is comprised of trail segments which pass through a variety of terrain. These segments provide differing degrees of trail difficulty ranging from open flat desert to steep rocky ridges. The trail system is designed to provide the opportunity for both loop trips as well as point-to-point trips.

The Pacific Crest National Scenic Trail extends along the entire western boundary of the planning area, connecting the San Bernardino and Angeles Mountains with the Sierra Mountains. In the southern portion of the planning area, the PCT is almost completely located on private land. The central and northern portions of the trail in the WEMO Planning Area, comprising about 80 miles, include substantial portions of public land. However, this is a small portion of the more than 2,800 miles of this nationally designated trail. The 80-mile segment starts at Tylerhorse Canyon outside of the community of Rosamond in the south and extends to just north of Bird Springs Pass where the trail enters the Sequoia National Forest.

The Harper Lake ACEC includes a 1-mile system of wheelchair accessible trails that pass over and offer views of a marshy wetland and lake with migrating and nesting birds of all types.

Sawtooth Canyon, adjacent to the campground, provides a unique recreational experience for rock climbers. Up the side of the canyons pitons have been put in place by area climbers to serve as anchors and climbing aids for subsequent users.

Much non-motorized use in the WEMO Planning Area occurs in the backcountry off of designated routes. Recreationists stage along designated routes or parking areas, and explore the backcountry on their own. Local recreationists, particularly equestrians, will stage from their property or corrals near public lands.

3.6.4 Facilities, Improvements, and Special Uses

The BLM has developed facilities and made improvements at locations that attract many recreational users during their travels into the west Mojave Desert region. Some of these developed facilities include Harper Lake, Fossil Falls, Rainbow Basin Natural Area, and Trona Pinnacles. Campground facilities have been developed for both individuals as well as groups at Sawtooth Canyon, Afton Canyon, Owl Canyon, and Fossil Falls.

Additionally, there are three Visitor Centers run by the BLM within the WEMO Planning Area. Those are the Desert Discovery Center located in downtown Barstow, the El Mirage Visitor Center located on the shores of El Mirage Dry Lake, and the Jawbone Station Visitor Center located at the entrance to the Jawbone Canyon Open Area.

These facilities have proven to be very popular stop off location for both OHV recreation enthusiasts and the public as a whole, as well as providing educational outreach with local organizations and schools. They provide maps, books, interpretive displays, and environmental education to all who stop by. In addition, specific environmental classes of all types and OHV safety classes are offered.

Rand Mountain Permit Program

Off-highway vehicle use within the Rand Mountains Management Area (RMMA) and the Western Rand Mountains ACEC has gone through significant changes over the years. From 1973 until 1980 the area was designated as “Open” which allowed vehicle travel anywhere in the area, and the area hosted numerous competitive OHV events. In the 1980 CDCA Plan, vehicle use within the area was changed to being allowed on “existing routes of travel” and no more OHV competitive events were allowed. Then the Rand Mountains Fremont Valley Management Plan was approved in 1994, an approved route network was designated, and the miles of routes approved for use was reduced from a network of approximately 764 miles down to 129 miles, according to the Plan. Much evidence of the routes that were not included in the approved network still remains on the ground, due to their historic use.

In 2006, the BLM adopted the 1994 network, expanded the ACEC, and approved a visitor use permit program for OHV use in the Rand Mountains in WEMO, to manage impacts to sensitive resources in the area. Visitors to the area are required to complete a short educational orientation program and once this was completed could purchase a permit. The goal of the Permit program is to increase compliance with applicable rules and regulations. A fee for these permits covers the cost of managing the permit program. In 2008, implementing this new program was begun in a two phased approach. The first phase is underway, which focuses on outreach and education of users, and implements a no cost permit for OHV use of the area. The second phase of the

program has not yet been initiated, and would require the completion of the educational course and the payment of the fee for use of the area.

To date the program is currently in Phase 1. Visitors desiring to use OHVs on the designated route system within the area are able to receive a free permit after they are informed of the use regulations for the area and certify they understand the designated route network and agree to only operate vehicle on the designated routes in the management area. The continued need and feasibility of implementing this visitor use permit system is of concern to the BLM due to use pattern changes, quantity of entry ways, and the staffing needed to implement.

3.6.5 Recreation Safety

As discussed above, recreation in the WEMO Planning Area is dependent on the availability of OHV Open and OHV Limited routes to either directly support recreational uses, or to provide access and use to recreation areas. Therefore, the analysis of impacts in Chapter 4 is primarily linked directly to mileage of routes available for various recreational activities. Another factor affecting recreation is the potential for safety hazards to exist along these routes. In the planning area, a common safety hazard is abandoned mine features, of which 10,254 have been inventoried by BLM in the planning area. These features commonly include human-dug excavations which may be visually prominent or may be masked by vegetation or soil. These excavations can be entered accidentally if they located within the stopping, parking, and camping distance from the route. Similarly, they can be entered intentionally, and the odds of this occurring are highest when the feature is closest to an OHV Open or OHV Limited route. Therefore, BLM has evaluated the mileage of routes within 100 feet of an inventoried safety hazard as a factor in considering the impact of the route network on recreation.

3.7 Grazing

3.7.1 Grazing Allotments

There are currently a total of 19 leased public land grazing allotments (areas designated as suitable for grazing of domestic livestock) within the West Mojave (WEMO) Planning Area (Figure 3.7-1). Two of these allotments have been donated back to BLM and retired from grazing under the authority of the 2012 Appropriations Act. The type of livestock and type of forage allocation for allotments have been designated in the BLM's CDCA Plan. Allotments are designated as ephemeral, perennial, or ephemeral/perennial based on the type of forage that is available on the allotment. Cattle, sheep, and, horses, or a combination of these may be authorized to graze on an allotment. Table 3.7-1 indicates the livestock type and forage type designated for each allotment.

There are 105 natural water sources located on the 19 currently active grazing allotments within the WEMO Planning Area. Natural water sources include seeps, springs and creeks. There are also 47 wells and manmade water sources on the active grazing allotments in the planning area. The standard distance to place salt or mineral blocks from natural water sources (riparian areas) is one quarter mile. The one-quarter mile requirement is a standard term and condition for most grazing permits and leases issued in the WEMO Planning Area where natural water sources occur within a grazing allotment. This requirement is also a proposed regional guideline.

Grazing use of perennial vegetation in all of the active allotments that have been grazed since 1992 (on at least a periodic basis) is expected to continue at lower stocking rates overall, except where the permittee or lessee voluntarily relinquishes their lease or permit. In 2012, Congress passed the Consolidated Appropriation Act of 2012. A provision of that act allows for the reallocation of forage from livestock use to wildlife use consistent with the donation language contained in Section 122 (b) of the Act. The donation language in this act specifically states that “the Secretary shall accept the donation of any valid existing permit or lease authorizing grazing on public lands within the California Desert Conservation Area.” The BLM California State Office applied this all existing permits as of 2012 (Instruction Memorandum: No. CA-2015-009). A list of these allotments available for donation was created through the memorandum. The Lava Mountain and Walker Pass Common Allotments have been relinquished under the authority of this act. Overall, livestock producers have voluntarily reduced stocking rates for much of the 1990s and 2000s, resulting in less livestock use than the lease or permit allows. In 1992, a high of 78,314 AUMs were authorized in the CDD for both sheep and cattle use. Between 2006 and 2016, the AUMs authorized within the West Mojave Planning Area ranged from 20,064 AUMs in 2006 to 13,039 AUMs in 2016 for all classes of livestock (BLM, Rangeland Administration System [RAS]). Both cattle and sheep grazing have been authorized under existing biological opinions in desert tortoise habitat.

Since 1992, lessees with allotments classified as ephemeral/ perennial have not requested, nor has grazing been authorized for, ephemeral forage or temporary non-renewable (TNR) perennial forage within the southern half of the WEMO Planning Area. During the same period, lessees and permittees in the higher, more northern desert portions of the WEMO Planning Area have routinely requested ephemeral authorizations, and have requested and been authorized to use TNR perennial forage when conditions allowed. Table 3.7-1 summarizes the acreage, classification, type of livestock and season of use for the 19 active grazing allotments within the WEMO Planning Area. The authorization of sheep grazing on ephemeral allotments is common in both field office areas in years when sufficient forage production occurs. However, the number of ephemeral sheep allotments, the numbers of sheep, and the number of woolgrowers have substantially declined over the last 10 years. Three allotments were eliminated by the 2006 WEMO Plan, and one additional allotment and substantial portions of another cannot be grazed due to their proximity to bighorn sheep habitat, unless changed by further land use planning.

The 2006 Biological Opinion from FWS prepared for the 2006 WEMO Plan concluded the following: “The Valley Well Allotment occupies 480 acres east of Highway 247; it is authorized for 24 animal unit months and has been grazed 5 of the last 10 years. The Bureau’s biologist recommended that it not be included in the Ord-Rodman DWMA because of its proximity to the base property of the rancher and its degraded condition (Chavez 2004). This allotment is within the boundaries of the Ord-Rodman Critical Habitat Unit. Because of the small size of the allotment, its degraded condition, and location adjacent to the heavily used Highway 247 and other human disturbances, we do not consider that it supports the primary constituent elements of critical habitat and will not discuss it further in this biological opinion.”

In 2005, the Army purchased the base property for the Harper Lake, Cronese Lake and Cady Mountain Allotments as mitigation for the expansion of Ft. Irwin Army Training Center. These allotments remain inactive and vacant. The 2016 DRECP has reclassified these allotments as unavailable for livestock grazing, unless changed by further land use planning. The AUMs from these allotments have been reallocated from livestock grazing to wildlife and ecosystem

function. In 2014, the 29 Palms MCAGCC acquired 10,880 acres of the Ord Mountain Allotment.

Additional descriptions of specific allotments are available in the 2006 WEMO Plan Volume II, Appendix O. In 2007, allotment-specific Environmental Assessments (EAs) were prepared for the actively grazed allotments after the 2005 WEMO Final EIS was published. Additional information on the allotments can be found in these EAs, and they are included by reference. Updates on specific resources and associated impacts such as soils from these EAs have been incorporated into the analysis in Chapter 4 of this FSEIS. The grazing EAs are available for download from the ePlanning website or can be requested from the Barstow and Ridgecrest Field Offices.

Table 3.7-1 presents the most current information on each cattle and sheep grazing allotment, and Table 3.7-2 describes BLM’s most recent environmental assessments (EAs) and current grazing status on each allotment.

3.7.2 OHV Access to Allotments and Range Improvements

OHV access is required for all aspects of range management. Most access and use of allotments occurs via designated routes. OHV access to range improvements and fences is generally limited to the authorized permittee or lessee, depending on the duration and frequency of activities and the sensitivity of the resources in the area. During cattle grazing activities, OHV access is intermittent and light in most of the allotment except during gathering and redistribution of livestock. These activities are concentrated in specific areas that comprise a very small portion of the allotment, and are accessed several times a season, including larger trucks for transport of the animals. For cattle and horse allotments, the concentration areas are identified in the permit/lease or planning documents, and do not change from year to year without further analysis.

Ephemeral sheep grazing, by contrast, involves a more dispersed OHV access and a good deal of constant pedestrian use of the allotment. Individual herders that accompany the sheep, herd the animals to different portions of the allotment from grazing season to grazing season, depending on the relative production and past use. Sheep are accompanied by the herder, who travels with a trailer that is parked adjacent to the OHV route, and moves about with the herd. The size, number, and location of trucks and trailers are modest, and few areas are re-frequented on a regular basis. Sheep are watered at temporary troughs via a water truck. Watering and bedding areas are dispersed throughout the allotment, and are typically sited in previously disturbed areas. In Chapter 4, BLM uses the mileage of routes in close proximity to range improvements as an indicator of impacts from OHV use for grazing operators. There are a total of 191 inventoried range improvements throughout the WEMO Planning Area.

Table 3.7-1. Affected Grazing Allotment Information

Allotment Name	Allotment Acres			Active AUMs	Range Type ¹	Livestock Type	Season of Use ²
	Public Land	Total	Within DT ACEC/CHU				
Antelope Valley ¹	7,158	7,871	0	0	Ephemeral	Sheep	N/A

Table 3.7-1. Affected Grazing Allotment Information

Allotment Name	Allotment Acres			Active AUMs	Range Type ¹	Livestock Type	Season of Use ²
	Public Land	Total	Within DT ACEC/CHU				
Bissell ¹	777	48,889	0	0	Ephemeral	Sheep	N/A
Boron ¹	11,202	82,892	0	0	Ephemeral	Sheep	N/A
Cantil Common ¹	202,897	233,693	6,726	0	Ephemeral	Sheep	N/A
Hansen Common ¹	34,848	72,102	0	354	Perennial	Cattle and Sheep	12/1-9/30
Kelso Peak ¹	2,718	2,718	0	132	Perennial	Cattle	Y-L
Lacey-Cactus-McCloud ³	162,765	165,140	0	2,214	Perennial	Cattle	11/1-5/31
Monolith-Cantil ¹	10,825	14,739	0	0	Ephemeral	Sheep	N/A
Olancho ¹	13,762	15,876	0	606	Perennial	Cattle	4/1-6/30
Ord Mountain ²	117,428	133,088	107,779	3,632	Perennial	Cattle	Y-L
Rattlesnake Canyon ²	26,832	28,757	0	1,081	Perennial	Cattle	Y-L
Round Mountain ¹	15,253	18,093	0	880	Perennial	Cattle	12/1-3/31
Rudnick Common ¹	163,842	236,184	0	6,736	Perennial	Cattle and Sheep	Y-L
Shadow Mountain ¹	16,965	86,384	3,323	N/A	Ephemeral	Sheep	N/A
Spangler Hills ¹	57,695	69,141	0	0	Ephemeral	Sheep	N/A
Stoddard Mountain ¹	16,889	173,297	0	N/A	Ephemeral	Sheep	N/A
Tunawee Common ⁴	51,729	55,931	0	1,889	Perennial	Cattle and Sheep	2/16-5/31
Valley Well ²	480	480	480 ⁵	24	Perennial	Horses	Y-L
Warren ¹	584	584	0	55	Perennial	Sheep	Y-L

1 - Those allotments classified as ephemeral (E) produce forage from primarily ephemeral (annual) plants. Those allotments classified as perennial (P) produce forage from perennial grass and shrubs. Those allotments with ephemeral and perennial (E/P) forage have a mixture of both range (forage) types.

2 - The period livestock typically graze forage on the allotment. Grazing use on some allotments is authorized to occur all year long or YL. The grazing period of use does not apply (NA) to ephemeral allotments because grazing use occurs when forage is available.

3 - Lacey-Cactus-McCloud (LCM) Allotment was evaluated in an EA in 2013; as a result the LCM Allotment has absorbed the Darwin Allotment.

4 - Grazed only by sheep at this time.

5 - Although Valley Well includes acreage within a CHU, it is not included as part of PA VII in Alternative 2.

Table 3.7-2. Status of Grazing Allotments

Allotment Name	EA Prepared and DR approved for grazing lease/permit renewal	Date of EA	Status¹
Antelope Valley	Yes	April 24, 2007	Active-10 yr. Lease
Bissell	Yes	April 24, 2007	Active-10 yr. Lease
Boron	Yes	April 24, 2007	Active-10 yr. lease
Cantil Common	Yes	April 24, 2007	Active-10 yr. Lease
Hansen Common	Yes	April 24, 2007, revised September 2008	Active-10 yr. Lease
Kelso Peak		EA in progress	Active Lease
Lacey-Cactus-McCloud	Yes	July 2011, Approved August 13, 2013	Active-10 yr. Lease
Monolith-Cantil	Yes	April 24, 2007	Active-10 yr. Lease
Olancha	Yes	May 2007	Active-10 yr. Lease
Ord Mountain	Yes	July 2007	This is currently an active cattle allotment within a DT ACEC as allowed through formal consultation with FWS (see 1-8-03-F-58) -10 year grazing lease.
Rattlesnake Canyon	Yes	June 2007	This is an active cattle allotment, portions of which are located in non-critical habitat for the desert tortoise, as allowed through formal consultation with FWS (see 1-8-03-F-58) -10 year grazing lease.
Round Mountain	Yes	September 2007	This is an active cattle allotment outside of habitat for the desert tortoise-10 year grazing lease.
Rudnick Common	Yes	April 24, 2007, revised July 2007	Active-10 yr. Lease
Shadow Mountain	Yes	August 2007	Active-10 year grazing lease. Ephemeral sheep grazing restricted to portions of this allotment outside DT ACEC and critical habitat for the desert tortoise.
Spangler Hills	Yes	April 24, 2007	Active-10 yr. Lease
Stoddard Mountain	Yes	April 2007	Active. Ephemeral sheep grazing restricted to portions of Middle Stoddard outside of critical habitat for the desert tortoise and the Mojave Monkey Flower Conservation Area-10 year grazing lease.

Table 3.7-2. Status of Grazing Allotments

Allotment Name	EA Prepared and DR approved for grazing lease/permit renewal	Date of EA	Status ¹
Tunawee Common	Yes	October 2008	Active-10 yr. Lease
Valley Well	Yes	March 2007	Active. This is a small domestic horse allotment. Grazing is authorized and allowed to continue in critical habitat for the desert tortoise based on formal consultation with the FWS (1-8-07-F-37R) -10 year grazing lease.
Warren	Yes	April 24, 2007	Active-10 yr. Lease

¹ Terms and conditions of the new leases will be reconsidered within six months of issuance of the West Mojave (WEMO) Route Network Project Record of Decision (ROD). This action is consistent with Section 402(c)(2) of FLPMA and the 2011 WEMO Remedy Order that allowed “the current grazing decisions to remain in effect pending revisions of the FEIS and ROD during remand,” and ordered “that the grazing decisions be reconsidered within six months after the revised FEIS and ROD are adopted by the BLM.”

3.8 Energy Production, Utility Corridors, and Other Land Uses

Most land uses in the WEMO Planning Area require the provision of some sort of OHV access and use. Land uses on public lands primarily consist of a number of different types of approvals for commercial, private or other governmental purposes. Land uses authorized on public lands include a wide variety of industrial and commercial development, examples of which are pipelines, roads, transmission lines, commercial filming, small and large scale industrial sites, power facilities, mines, and communication sites. Types of authorizations range from permits and leases (including Recreation and Public Purpose Act leases) to right-of-way (ROW) grants.

3.8.1 General Land Uses Affected by Transportation Network

OHV access within the boundaries of new facilities is generally handled through a plan of development. Roads within facility boundaries are managed as additional facilities equivalent to other structures, and are not available for public access without the permittee’s permission and oversight. Authorizations generally are issued with a set of stipulations that prescribes allowable development with associated design features to address site specific resource values. Permitted OHV use restrictions may also be considered when there are safety issues, when routes dead-end beyond a project, if the project is short-term or temporary, and in consideration of associated impacts, or to manage sensitive resources.

Authorized land uses can affect the transportation network and other resources in several ways. Most authorizations include provisions for OHV access to the site during facility construction or operation. These provisions can include authorization for use of existing routes, or authorization to construct and use new routes. Authorization for use of these OHV access roads often includes route maintenance activities or requirements, and therefore these are frequently some of the best maintained routes on public lands. Most frequently, public use of these routes precedes

authorized use since each applicant for a permit, plan of development, or ROW is strongly encouraged to propose an existing, OHV Open use route to access their project site. Therefore, in general, these authorized access routes are also available to the public at the time they are permitted. New routes generally serve as connectors from an existing OHV Open use route to the project boundary. New routes to projects most frequently are identified as Limited Use routes (routes to be used only by the specific authorized users), but if a new route provides through access or crosses OHV Open use routes, some or all of the route may be made available to the public and/or other users.

Authorizations can also affect the transportation network if the requested land use is incompatible with continued public use of one or more routes. This can occur with land-intensive uses in which a large land area is fenced and made inaccessible to the public. In these cases, the requested land area may include one or more publicly-available routes that would no longer be available. This is a common occurrence with large-acreage sites such as solar power plants. The common practice in these cases is to evaluate the need for OHV use associated with the routes that are being made inaccessible, and to re-route them around the facility if that OHV use is still needed.

A third effect of the authorization of new routes associated with land uses is the potential for proliferation of associated unauthorized routes. For a single-site land use such as a solar facility, the potential for route proliferation is expected to be low because the new route would likely not be very long, and would likely be located near other major transportation arteries. However, land uses that involve multiple sites in remote areas, such as communications sites or wind turbines, may have a greater potential for route proliferation because they provide new OHV use to remote areas.

3.8.2 Land Uses Within WEMO Planning Area

Within the WEMO Planning Area, there are currently approximately 1,705 active ROWs. These land and mining authorizations almost always involve some level of OHV use across public lands. This use occurs at intervals which vary widely, and range from many times per day to less than once a year. The number of active rights-of-way and other authorizations changes frequently as new authorizations are issued and existing ones expire or are terminated.

Utility Corridors

The CDCA Plan, as amended, established a network of sixteen utility planning corridors across the Mojave and Colorado Deserts. All new linear utilities exceeding the following thresholds must be located within a utility corridor:

- New electrical transmission towers and cables of 161 kV (kilovolts) or above;
- All pipelines with diameters greater than 12 inches;
- Coaxial cables for interstate communications; and
- Major aqueducts or canals for interbasin transfers of water.

Eight of these corridors cross the WEMO Planning Area: Corridors A, B, BB, C, D, G, H, and P. Each of these corridors is between two and five miles wide. The intent of the corridors is to provide a delivery system network that meets public needs in a manner that minimizes the

proliferation of widely separated rights of way by encouraging the joint use of corridors for utilities. By locating a project within a corridor, a project proponent does not receive immediate approval to construct a project: a federal right of way grant must still be obtained and a NEPA document prepared.

Utility corridors comprise the most extensive linear network in the planning area, and they generally parallel U.S. highways. Since these utility corridors extend hundreds of miles in length and are two to five miles in width, it is the goal to share OHV access roads within the corridors whenever feasible to minimize route proliferation. These major corridor routes are also routes available to the public, and serve as major arterial access across the planning area. They also may include many side routes to access above-ground or below-ground facilities. As aerial and remote monitoring of facilities increases, the frequency of OHV use on these side-routes is declining. However, many maintenance activities still need to be performed on-site, requiring continued OHV use.

Occasionally the unique needs of a project may require that it be located outside of a corridor. To accommodate these situations, several “contingent” corridors were identified by the CDCA plan that could be activated through a CDCA plan amendment. A project could be located outside of either an activated or contingent corridor, but only through a CDCA plan amendment that examined whether the need for a one-time exemption from the corridor network warranted construction in a non-corridor location. This has happened only once since the CDCA plan was adopted, for the All American Pipeline in 1983, in a region outside of the western Mojave Desert.

In general, the utility corridors established in the CDCA Plan already contained transmission lines and pipelines at the time of their designation as corridors. Therefore, the corridors also contained a network of parallel access roads to support maintenance and operations of these facilities. In many cases, newly proposed facilities within these corridors can be constructed and operated without the need for additional routes. Each route within the corridors must be evaluated, based on its authorized use, potential resource impacts, and other access needs, to determine if it can be made accessible to the public in addition to the authorized users.

The Energy Policy Act of 2005 designated corridors in this planning region called Section 368 or West-Wide Energy Corridors. Section 368 Corridors overlap certain CDCA corridors and are similar, except that they are specific to energy transmission and distribution (electricity, oil, gas, and hydrogen). Projects approved within them have distinct Interagency Operating Procedures that are adopted as appropriate, including measures for transportation and access.

Access for Private Landowners

Private land owners may also receive authorization to utilize routes on public land to access and use their property. The location and manner of that access is a discretionary action if it involves issuance of an authorization for an existing or upgraded road, and private landowners may request a ROW through filing an application for this additional access. However, BLM regulation does not require an authorization for non-commercial access by private landowners. Although some federal lands do have such requirements, the CDCA Plan has not adopted such a policy. Due to the amount and distribution of private land in the planning area, most private landowners do not possess authorizations for use of access routes to their land; therefore access to private lands is generally a consideration of providing public access.

Renewable Energy Facilities

Renewable energy includes solar power, wind, and biomass resources. As demand has increased for clean and viable energy to power the nation, consideration of renewable energy sources available on public lands has come to the forefront of land management planning. The West Mojave region contains the natural resources to support the development of alternative energy sources such as wind, geothermal and solar facilities, and there will likely be future proposals for the development of these resources as energy demands increase. The DRECP LUPA identified DFAs. These are locations where renewable energy generation is an allowable use, incentivized, and could be streamlined for approval under the DRECP LUPA.

Each existing and proposed renewable energy facility interacts with the designated travel network, but the interaction is different depending on the type of facility. The facilities have in common a need for access roads to the power generation site, electrical substations and switchyards, and transmission system. However, the configuration of the power generation facilities affects the number and configuration of roads needed to support each facility.

For solar power plants that occupy a single site, a single access road may be sufficient to support construction and operation of the facility. Ease of access to local highways and existing transmission systems is generally a factor in site selection by the applicants, so the number and length of necessary access roads, including newly constructed roads, is relatively low. However, the facilities also occupy very large land areas of several thousand acres. By the nature of the facilities, the land area must be completely fenced and public access excluded from this large area. In almost all cases, OHV Open and OHV Limited routes already exist within the project area, and public access and use of those routes must be eliminated. This closure, in turn, may affect the public's use of the routes for recreation or access to other recreation areas, or the use of the route by an authorized user to access their permitted facilities. In general, the environmental analysis of each solar facility includes an evaluation of the impact of the project on existing routes, and commonly includes a requirement that roads or trails be re-routed, if necessary, to ensure continued access and use for the public and authorized users.

Wind power facilities have a different effect on routes than solar facilities. Instead of being concentrated in a single, large land area, the power generation facilities exist as hundreds or, in some cases, thousands of individual small turbines. Due to the small footprint of the individual turbines, wind generation facilities do not have a long-term impact on use of routes by the public or authorized users. However, because the applicant must have long-term access to each individual turbine for construction and maintenance, the number and length of routes necessary to support the facility is relatively high. In almost all cases, facility construction requires new roads covering a large area. Also, wind turbines tend to be located in higher elevations. By needing to access higher elevations, these routes tend to cross areas with steep slopes, presenting the potential for increased erosion. These mountain slope areas also tend to be the locations of springs, presenting the potential to impact riparian resources, unusual plant assemblages, water quality, and biological resources associated with these areas. Finally, the higher elevation areas are commonly attractive for recreational uses such as hiking, camping, rock hounding, and wildlife viewing. By adding lengthy new routes in high elevation areas, wind turbine facilities present the potential for increasing the proliferation of unauthorized routes in these sensitive areas. Evaluation of wind power applications, therefore, requires consideration of resource impacts across the entire facility route network, including decisions such as the types of impacts

that may occur, whether new routes are to also be available to the public or other users, and how to ensure that construction of new routes does not lead to proliferation of unauthorized routes.

Table 3.8-1 lists the renewable energy projects which have been approved or are currently being evaluated in the area.

Table 3.8-1. Renewable Energy Projects

Project	Type	Field Office	Size (MW)	Acreage	Status
Soda Mountain	Solar	Barstow	350	4,397	Proposed
Abengoa Mojave	Solar on private land, transmission on public land	Barstow	250	154	Approved
Alta East	Wind	Ridgecrest	300	2,592	Approved and online
Camino	Solar	Ridgecrest	44	360	Proposed
Haiwee	Geothermal ¹	Ridgecrest	NA	NA	Proposed
Barren Ridge	Transmission	Ridgecrest	NA	NA	Approved

⁽¹⁾ Current evaluation is for general leasing decision, not specific projects.

Non Renewable Energy

The majority of the natural gas fueled power plants within the study area are cogeneration facilities, the one exception being the Coolwater facility east of Barstow. In May of 2000, the California Energy Commission granted approval to the High Desert Power Plant Project, a new natural gas fueled 750-MW facility. This facility is proposed to be located on a 25-acre site of the Southern California International Airport, formerly George Air Force Base, in the city of Victorville.

Non-renewable energy facilities tend to occupy a single, small-scale site near existing roads, and thus do not require construction of or access to an extensive route network. These facilities are generally supported by a single access road into the facility, and access roads adjacent to supporting pipelines and transmission lines.

Communication Sites

The WEMO Planning Area also supports a large number of communications sites operated by leaseholders. In general, these facilities are similar to wind turbines in that they occupy a small land area that is unlikely to interfere with use of nearby routes by the public or other authorized users. However, they also tend to be sited in distal locations, at high elevations, thus requiring a lengthy access road for construction and maintenance. The impacts associated with these routes at higher elevations would be similar to those for wind turbines, including increased potential for erosion on steep slopes, presence of riparian and other sensitive resources, and the potential for proliferation of unauthorized routes for recreation purposes.

Mine and Mineral Claim Access

As with other land-use authorizations, whenever appropriate, the designated route network is used for OHV access. Frequently additional access is required to reach the sites of minerals.

Less frequently, restrictions are placed on the use of these access routes for safety and/or security reasons, in order to protect discoveries. Generally, mining activities are of a small scale and do not affect the continuity of the overall network. However, the major salt mining operations on Searles Dry Lake do provide constraints on through-area access by other users.

Locatable minerals, which include metallic and more precious or unique commodities, are located on public lands, and can be potentially patented to mining interests based on discovery and evaluation. Access for locatable minerals is provided under the 1872 Mining Law and implementing regulations in 43CFR3809, and is non-discretionary. BLM retains authority over the appropriate manner and specific location of access routes. There are currently 5 active mines within the WEMO Planning Area. In addition, there are more than 3,000 active lode, placer, and millsite claims, most of which require a plan of operation in the WEMO Planning Area.

Each mine and claim requires use of the transportation network for access and use of claims. An approved plan is required for most surface disturbance in the WEMO Planning Area associated with mining or exploration activity greater than one acre. Access to these active mines and claims is included in a plan of operations submitted to BLM for review and approval. In addition, some mines outside of the planning area may require use of the planning area's transportation network. Notice-level operations are smaller exploratory activities causing surface disturbance. In more sensitive areas, a notice is appropriate up to one-acre, unless otherwise further restricted in the land-use or activity plan. In less sensitive areas, a notice may be appropriate for operations up to 5 acres in size. The notice must specify access, which BLM reviews and may modify.

Casual use mining exploration, for which an operator need not notify the BLM, pertains to those projects that do not exceed casual use. Many of these claimants do not file a plan or notice, and therefore are not provided OHV use designations specific to their activity on public lands. Rather, they may use OHVs provided the use is consistent with the regulations governing such uses at 43 CFR 8340 for off-road vehicle use designations contained in BLM land-use plans.

Approval for authorizations for most saleable and leasable minerals is discretionary; therefore providing access to those minerals is also discretionary. If mining is approved, BLM determines the appropriate manner and specific location of access routes, as with locatable minerals. In many cases, technical considerations govern the location of the necessary access route, and the impacts associated with access and use are considered by BLM, along with the rest of the facility and operation, in determining whether to authorize the facility. As with other routes, BLM may apply minimization requirements, as necessary to avoid or reduce impacts. There are some specific commodities, such as Strategic and Critical Minerals, for which authorization, and therefore access, is not discretionary.

3.9 Cultural Resources

This chapter presents the existing management situation and environmental setting/affected environment for cultural resources in the planning area, which is the scope of the analysis. The following describes the broad category, cultural resources, as well as the subsets historic properties and historical resources.

A cultural resource is an object or definite location of human activity, occupation, use, or significance identifiable through field inventory, historical documentation, or oral evidence. Cultural resources are prehistoric, historic, archaeological, or architectural sites, structures,

buildings, places, or objects and locations of traditional cultural or religious importance to specified social and/or culture groups. Cultural resources include the entire spectrum of objects and places, from artifacts to cultural landscapes, without regard to eligibility for inclusion on the NRHP or California Register of Historical Resources (CRHR).

Historic Properties are a legally defined subset of cultural resources that are included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior and per the NRHP eligibility criteria at 36 CFR 60.4. Historic Properties may include any prehistoric or historic district, site, building, structure, traditional cultural property, or object. The term also includes properties of traditional religious and cultural importance to a Native American tribe that meets the NRHP criteria. "Eligible for inclusion on the NRHP" refers both to properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the NRHP criteria.

3.9.1 Definition of the APE

The Area of Potential Effects (APE) is defined in 36 CFR Part 800, the implementing regulations of Section 106 of the National Historic Preservation Act, as "[t]he geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" [36 CFR Part 800.16(d)].

The APE for the land-use plan amendment is the WEMO Planning Area. This takes into account the potential for direct and indirect impacts to physical, visual, and auditory attributes of cultural resources and cultural landscapes, from all decisions allowable as part of the WEMO Plan. This includes the proposed amendments and revisions, grazing use decisions, and the establishment of a travel management framework specific to the Planning Area.

The APE for specific route designations developed as part of the West Mojave Route Network Project is defined as the area formed by the actual routes plus the 300-foot-wide corridor along each side of OHV Open and OHV Limited routes that is available for pulling off and parking of vehicles. This encompasses areas near or adjacent to routes that may be subject to effects related to use of the route, such as camping and secondary-vehicle staging. This area forms the basis for the NEPA analysis in this document.

3.9.2 Identified Resources

Cultural Resources

The CDCA Plan provides management for approximately 25 million acres in Imperial, Kern, Los Angeles, Inyo, Riverside, and San Bernardino counties. The 9.4 million acres encompassed by the West Mojave Area are entirely within the CDCA. To describe the cultural resources within the Planning Area on a programmatic level, various sources were researched to gather information regarding the types and number of cultural resources. The baseline of the knowledge and understanding about cultural resources within the CDCA Planning Area comes from studies completed between 1969 and 1980 in support of the Plan. During the CDCA planning phase, approximately 179,200 acres were systematically inventoried using a variety of methods including stratified random sample surveys to intensive purposive surveys. Surveys and

overviews conducted as planning for the CDCA within the Planning Area are listed in Table 3.9.1. Each of these investigations identified areas with higher sensitivity for finding cultural resources, the types of resources found, and the ethnographic and historic background. They also contained recommendations for protecting cultural resources including installations of fencing, signage, and road closures.

As of January 1, 1980, there were an estimated 14,229 recorded cultural resources within the CDCA Planning Area. A sample of 2,903 sites were categorized by site type, including: villages, temporary camps, shelter/cave, milling station, lithic scatter, quarry site, pottery locus, cemetery, cremation locus, intaglio/geoglyph, rock alignment, petroglyph, pictograph, trail, roasting pit, isolated find, cairn, historic, other, and multiple (Table 3.9-1). The table identifies a wide range of cultural resources including habitation sites, temporary camps, rock shelters, caves, milling stations, lithic scatters, chipping circles, quarries, ceramic scatters, cemeteries, cremation features, rock alignments, geoglyphs, petroglyphs, pictographs, trails, roasting pits, cairns, isolated artifacts, mines, homesteads, historic campsites, and historic trash scatters. For definitions for these site types, see the CDCA Proposed Plan Final Environmental Impact Statement, Appendix Volume D (BLM 1980).

Table 3.9-1. Sample of Sites From the CDCA Plan

Site Types in CDCA Plan	# of Sites	Time Period	Eligibility
Village	27	Prehistoric	Eligible
Temporary camp	426	Prehistoric	Possibly
Shelter/cave	163	Prehistoric	Possibly
Milling station	262	Prehistoric	Possibly
Lithic scatter	689	Prehistoric	Possibly
Quarry site	30	Prehistoric	Possibly
Pottery locus	67	Prehistoric	Possibly
Cemetery	0	Prehistoric	Eligible
Cremation locus	2	Prehistoric	Eligible
Intaglio/geoglyph	1	Prehistoric	Eligible
Rock alignment	11	Prehistoric	Possibly
Petroglyph	57	Prehistoric	Eligible
Pictograph	0	Prehistoric	Eligible
Trail	41	Prehistoric	Possibly
Roasting pit	342	Prehistoric	Possibly
Isolated find	311	Prehistoric	Not eligible
Cairn	18	Prehistoric	Unknown
Historic	319	Historic	Possibly
Other	49	Unknown	Unknown
Multi-component	88	Both	Possibly
Total		2903	

Prehistoric and historic properties and traditional cultural properties on federal lands are formally identified as significant by being listed in the National Register of Historic Places (NRHP) or

determined eligible for listing. In Table 3.9-5 the results of the 2015, 2016, 2017 and 2018 Class III cultural surveys results for eligible and ineligible sites for the NHRP are listed. Class III surveys for 2019 are in process and have not occurred at the time of the FSEIS 2018 Notice of Availability. The 2019 sample survey results will be considered for future decision making as they become available. Survey results from 2015 through 2018 have increased cultural knowledge of the WEMO Planning Area, but have not resulted in significant route closures. Routes that are considered for transportation linear disturbance classification in future travel management planning implementation efforts do not generally result in a lack of connectivity, access issues or other resource conflicts. Furthermore, all designation criteria, including impacts to cultural resources based on existing knowledge have been considered during decision-making process. The 2019 final survey results will be consulted on with the SHPO and shared with the consulted parties of the Programmatic Agreement as they become available.

Current Status of Sites within the West Mojave

Cultural resource inventories completed to date in the WEMO Planning Area include the sampling survey associated with the original CDCA Plan, and inventories completed for large-scale renewable energy projects, infrastructure projects such as highway and transmission corridors, and small-scale development projects. The BLM has also conducted 229 inventories associated with OHV travel and ACECs, covering approximately 32,739 acres. BLM has prepared a summary of OHV related inventories as a component of the Section 106 process.

In 2013, BLM conducted a review of cultural resource records for the West Mojave planning area to update the BLM cultural resource GIS-based geodatabase and identify additional sites that may be affected by the transportation network alternatives. This data was integrated into a GIS layer file used during development and analysis of alternatives. This review identified a total of 6 National Register Listed Districts, 7 National Register Listed Sites, and 7,446 total resources, including isolates within the West Mojave planning area. Table 3.9-2 provides an overview of resources listed on the NRHP which occur within the West Mojave Area.

Table 3.9-2. West Mojave Sites and Historic Districts Listed in the National Register of Historic Places

Property Name	County	Sites Included	Known Values	Current Condition
Ayres Rock	Inyo County	Rock Art	Traditional Use; Conservation; Scientific	Site has some erosion evidence from an old user created trail no longer in use. A single MC trail was noted on site during monitoring. Site is regularly monitored by a team of site stewards.
Bandit Rock (Robber's Roost)	Kern	1 (several sites present were not included in nomination)	Historic (sites not included in nomination are prehistoric)	Unauthorized OHV activity beyond posted signs, currently used for camping, shooting and hunting.

Table 3.9-2. West Mojave Sites and Historic Districts Listed in the National Register of Historic Places

Property Name	County	Sites Included	Known Values	Current Condition
Black Mountain Rock Art District	San Bernardino	9000 (est)	Scientific, conservation, traditional use, public; within Black Mountain ACEC and Black Mountain Wilderness	2 sites noted with some ongoing damage from looters. Signs have been erected and site stewards monitor the locations. Signs posted at Black Wash to inform visitors of fragility and punishment. Fence also erected to keep vehicles out of Inscription Canyon is in good condition.
Blackwater Well	Kern	17	Prehistoric	Open routes through the site. Artifacts occur within the roadways and erosional drainages created by use of the road.
Burro Schmidt's Tunnel	Kern	1	Historic (Not Yet Recorded)	Ongoing tourism, mining and looting have impacted the site over the years.
Calico Mountains Archeological District	San Bernardino	n/a	Scientific, traditional use, public	One site under excavation for recovery of artifacts. Other sites within and adjacent to a County Park. Ongoing scientific inquiry and tourism have impacted the sites over the years. Unauthorized OHV activity beyond posted signs, currently used for camping, shooting and touring.
Fossil Falls Archaeological District	Inyo	32	Scientific, conservation, traditional use, public; Prehistoric; includes part of Fossil Falls ACEC	One set of recent MC tracks noted past the barrier for 120 meters, which turned around at that point, site in the area was not disturbed. Indicates more signing may be needed.
Last Chance Canyon Archaeological District	Kern	160 (an additional 55 sites within 2 mile radius of boundary)	Prehistoric/historic/Native American; Last Chance Canyon ACEC within boundaries	Wilderness sites are generally intact. Other sites are currently being mapped and monitored under contract. Some important contributing sites are evaluated separately in this table.
Newberry Cave	San Bernardino	1	Conservation, traditional use	The site is in good condition and shows no signs of OHV activity in the area. Newberry Cave is situated on a rocky steep mountain with no OHV access.

Table 3.9-2. West Mojave Sites and Historic Districts Listed in the National Register of Historic Places

Property Name	County	Sites Included	Known Values	Current Condition
Red Mountain Spring Archaeological District	San Bernardino	23 formally recorded; a number of others being documented as a result of recent research	Mostly prehistoric but some historic remains	Area has been partially fenced and closed to OHV use. A guzzler and weather station are located on one edge of the district boundary. Sites are in good condition, however, unauthorized OHV tracks were observed in several of the sites off of a two track road
Rodman Mountain Petroglyphs Rock Art District	San Bernardino	4 major loci: SBR307A, B, C (Deep Tank), SBR306A, B, C (Surprise Tank Howes Tank Rodman Mtns Geoglyph Site	Scientific, Conservation, Traditional Use, Public	Howe's Tank is in Wilderness, and has no damage. The road to the site shows no evidence of use. Deep Tank is in good shape and no damage was observed. Rodman Mountain Geoglyph site is fenced and shows no signs of incursions. Surprise Tank Canyon has existing damage from graffiti and attempted removal of glyphs (first noted in the 1970s.) Signs posted at the canyon to inform visitors of fragility and punishment. Fence also erected to keep vehicles out of canyon is in good condition. Site stewards regularly monitor the District. New OHV incursions not noted.
Steam Well Petroglyphs Archaeological District	San Bernardino	4	Prehistoric	Sites in Wilderness. OHV is noted to the boundary of the Wilderness area and trailhead, but does not appear to be entering the Wilderness. Sites not monitored inside of Wilderness.
Trona Pinnacles Railroad Camp	San Bernardino	Camp associated with the Trona RR.	Scientific, Historic	Site in good condition. OHV impacts minimal despite location near an authorized route and increased visitation to the area.
Twenty-Mule Team Borax Wagon Road	San Bernardino	1	Historic	The road alignment is currently open to use by OHV. Portions of the route are widened by use.

The site location data collected as part of this planning effort indicate many portions of the planning area may be considered sensitive for the occurrence of cultural resources. The West Mojave Planning Area is characterized by a variety of environmental zones and associated natural resources that include, among other features, Pleistocene lakes, the Owens and Mojave River Corridors, perennial seeps and springs, the prominent Sierra Nevada Mountain Range, and

smaller desert mountain ranges. The northwestern and southeastern portions of the planning area are typified by environmental transitions between the Mojave Desert and the Great Basin and the Mojave Desert and Sonoran Desert, respectively. As part of the initial data acquisition program developed between BLM and SHPO, BLM completed monitoring of all NRHP listed sites on public lands in the planning area, and a sample of sites per Subregion. The results of this program are listed in Table 3.9-3.

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
CA-INY-372	Conservation; Scientific; Traditional use	No evidence of unauthorized OHV use on site; frequent visitation
CA-INY-372/H	Conservation; Scientific; Traditional Use	Recent OHV travel noted thru the site, and an informal turnaround on-site. LADWP or site visitors continuing to use historic route. Potential evidence of recent attempts at looting. Noted additional minimization action needed.
CA-INY-1639	Scientific; Traditional Use; Public	Fossil Falls Contributing: Footprints noted in the site, but no evidence of recent vandalism.
CA-INY-1642	Traditional Use; Public	Fossil Falls Contributing: One set of recent MC tracks noted past the barrier for 120 meters, site in the area was not disturbed.
CA-INY-1643	Conservation; Scientific; Traditional Use	Fossil Falls Contributing: Majority of site now protected from OHV access by barriers and regular monitoring. Visitation directed away from this site toward main lava flow (Fossil Falls) has been effective.
CA-INY-1997	Traditional Use	The site is in stable condition. Signs of recreational shooting and OHV traffic are noted in the vicinity. Burros are currently utilizing natural water retention areas near the site.
CA-INY-2147/H	Traditional Use	Site in stable condition. Road in good condition. Additional recordation of sites conducted during monitoring.
CA-INY-2268H	Scientific	No impact; inaccessible. Needs additional recordation.
CA-INY2821/H	Traditional Use	Site in stable condition with minimal impact from OHV use or visitation. Site regularly monitored by a site steward.
CA-KER-140	Scientific; Traditional Use	Numerous OHV incursions noted thru the site.
CA-KER-148	Traditional Use; Contributing to listed district	Last Chance Canyon: Continued OHV use through site
CA-KER-208/H	Scientific; Traditional use	Site in Stable Condition, fencing keeping most OHV and livestock away from site
CA-KER-226/H	Conservation; Scientific; Traditional use	New vandalism (spray paint of rock art) and single OHV tracks into site. Noted needed fence repair and add'l rehab
CA-KER-250	Traditional Use; Contributing to listed district	Last Chance Canyon: Impacts from erosion and OHV intrusions, location is near a mine and 2 routes
CA-KER-261	Scientific; Public; Contributing to listed district	Last Chance Canyon: Designated route adjacent to site
CA-KER-437	Scientific; Contributing to listed district	Last Chance Canyon: Site condition improving after barriers and rehab. No recent OHV traffic

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
CA-KER 967	Traditional Use	Site approx. 300 meters from designated route. No OHV use noted on site—existing impacts limited to use of main access route leading to major destinations. Additional recordation of site needed.
CA-KER-968/1716	Traditional Use	Site larger than previously recorded and bisected by an authorized route. MC tracks and a campfire ring were noted off the main route. Needs signing to direct camping and use to main camping area further to the west, and additional recordation.
CA-KER-6430	Scientific	Site stable and conditions improving since barrier installation. Newly exposed diagnostic artifacts collected to prevent additional site looting
CA-KER-7816	Scientific; Traditional use	Site in good and stable condition but OHV activity continues through site past installed barrier. Noted needed add'l rehab
CA-KER-7819/H	Conservation; Scientific; Traditional use	Site in stable condition. Grazing impacts noted outside of fenced area. No signs of looting or vandalism.
CA-SBR-134	Traditional Use: Rock Art	Site in good condition.
CA-SBR-211	Traditional Use, Habitation Site	Red Mountain Spring ACEC. Site is in stable condition. Signs of OHV incursions beyond locked gate.
CA-SBR-561	Conservation; Scientific; Traditional Use: Large habitation site with artifacts, spring, mortar, previous discoveries of human remains.	Site in good condition and shows no signs of OHV disturbance. Site is fenced, within a preserve, and has a caretaker who monitors and lives at the preserve.
CA-SBR-697	Scientific; Traditional Use: Large lithic quarry.	Site substantially disturbed by a modern, abandoned quarry. Evidence of visitation and traffic in and around the quarry has had minimal adverse effects on the site.
CA-SBR 1012/H	Scientific, Traditional Use: Prehistoric and historic quarry	Christmas Canyon ACEC. Site is in stable condition. Elimination of this area from OHV events has contributed to restoration of sites previously impacted by OHV use.
CA-SBR-1908/H	Conservation; Scientific; Traditional Use: Multicomponent site with 494 features	Site in good condition and shows no signs of OHV disturbance
CA-SBR-1968	Scientific; Traditional Use: Large lithic procurement and habitation site	Site in good condition and shows no signs of OHV disturbance
CA-SBR-2071H	Traditional Use: Large historic dump site	Site in good condition and shows no signs of OHV disturbance
CA-SBR-2142/H	Scientific; Traditional Use: Prehistoric camp site with lithic tools, and debitage surrounding Stoddard Well (Smith 1939). Historic component includes Stoddard Well and area, and represent several phases of use or development.	Site in good condition and shows minimal damage despite its location along the well-used Stoddard Wells Road (CA-SBR-9360H).

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
CA-SBR-2280	Traditional Use	Site previously described with 4 loci. The probable locations were inventoried, but site not relocated.
CA-SBR-2596	Conservation; Scientific; Rock Art	Red Mountain Spring ACEC. Site is inaccessible by OHV and is in stable condition
CA-SBR-2597	Conservation; Scientific; Prehistoric campsite	Red Mountain Spring ACEC. Unauthorized and previously open OHV route in vicinity of the site. Site is in stable condition.
CA-SBR-2600/H	Conservation; Scientific; Prehistoric habitation and historic development	Red Mountain Spring ACEC. Unauthorized, single-track motorcycle tracks observed through site. Previously open route has been blocked by locked gate.
CA-SBR-2609	Conservation; Scientific Use. Prehistoric habitation	Red Mountain Spring ACEC. Unauthorized, single-track motorcycle tracks observed through site. Previously open route has been blocked by locked gate.
CA-SBR-2610	Conservation; Scientific Use. Prehistoric habitation	Red Mountain Spring ACEC. Unauthorized, single-track motorcycle tracks observed through site. Previously open route has been blocked by locked gate.
CA-SBR-2611	Conservation; Scientific Use. Prehistoric habitation	Red Mountain Spring ACEC. Unauthorized, single-track motorcycle tracks observed through site. Previously open route has been blocked by locked gate.
CA-SBR-2612	Conservation; Scientific Use. Prehistoric habitation	Red Mountain Spring ACEC. Unauthorized, single-track motorcycle tracks observed through site. Previously open route has been blocked by locked gate.
CA-SBR-2613	Conservation; Scientific Use. Prehistoric habitation	Red Mountain Spring ACEC. Unauthorized, single-track motorcycle tracks observed through site. Previously open route has been blocked by locked gate.
CA-SBR-2614	Traditional Use: Lithic reduction scatter of 5,435 sq. meters near the National Old Trails Road with 90 prehistoric artifacts and 4 loci.	The overall condition of this site is good with no alterations. The site shows no signs of OHV disturbance.
CA-SBR-2910H	Scientific; Traditional Use: Prehistoric occupancy site	Site on both public and private land and shows no sign of OHV activity.
CA-SBR-3594 (Ragtown)	Traditional Use; Public: Historic mining and RR features, mostly post1930's covering approx. 2 sq. miles.	Site access fenced on private land and shows no sign of OHV activity.
CA-SBR-3780	Scientific; Traditional Use: Prehistoric occupancy site	Site on both public and private land and shows no sign of OHV activity.
CA-SBR-4020H	Traditional Use: 2 concentrations of historic and non-historic trash.	Site in fair condition and shows continuing authorized OHV activity (transmission line).
CA-SBR-4022/H	Traditional Use: Prehistoric small lithic and historic refuse scatter. The historic components may be associated with the historic wagon road or other linear features.	Site in fair condition with nearby authorized OHV activity (transmission line).

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
CA-SBR-5340	Conservation, Traditional Use: Prehistoric lithic scatter and occupation site	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site in stable condition.
CA-SBR-6018	Scientific; Traditional Use: Prehistoric lithic and occupation site	Site in good condition and shows no sign of OHV activity.
CA-SBR-10509	Traditional Use	Site intersected by SR247 and shows no sign of OHV disturbance
CA-SBR-10576/H	Scientific; Traditional Use: Prehistoric quarry, reduction sites, and rock cairns	Site in stable condition and shows no signs of OHV disturbance
CA-SBR-10850/H	Conservation, Scientific Use: Prehistoric lithic scatter with historic mining features	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site in stable condition.
CA-SBR-11422H	Traditional Use: Remnant industrial site and historic blacksmith shop remnants	Site in stable condition and shows no signs of OHV disturbance
CA-SBR-11776	Traditional Use	Site on both public and private land, and continues to be used as an illegal trash dump
CA-SBR-12297	Conservation, Scientific Use: Prehistoric habitation	Red Mountain Spring ACEC. Unauthorized, single-track motorcycle tracks observed through site. Previously open route has been blocked by locked gate
CA-SBR-13182	Conservation, Scientific Use: Prehistoric lithic scatter and habitation	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site is immediately adjacent to existing OHV route. Site is in stable condition.
CA-SBR-13183	Conservation, Scientific Use: Prehistoric lithic scatter and habitation	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site is immediately adjacent to existing OHV route. Site is in stable condition.
CA-SBR-13184	Conservation, Scientific Use: Prehistoric lithic scatter and habitation	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site is immediately adjacent to existing OHV route. Site is in stable condition.
CA-SBR-13185	Conservation, Scientific Use: Prehistoric lithic scatter and habitation	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site is immediately adjacent to existing OHV route. Site is in stable condition.
CA-SBR-13186	Conservation, Scientific Use: Prehistoric lithic scatter	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site is immediately adjacent to existing OHV route. Site is in stable condition.
CA-SBR-13187	Conservation, Scientific Use: Prehistoric lithic scatter	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site is immediately adjacent to existing OHV route. Site is in stable condition.

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
CA-SBR-13193	Conservation, Scientific Use: Prehistoric lithic scatter	Christmas Canyon ACEC. Removal of this area from OHV events has allowed sites to rehabilitate. Site is immediately adjacent to existing OHV route. Site is in stable condition.
CA-SBR-13370	Scientific; Traditional Use: Prehistoric habitation from two periods	Site in good condition and does not show signs of OHV disturbance
CA-SBR-15917H	Traditional Use; Public: Historic mine features	Site in good condition and does not show signs of OHV disturbance
CA-SBR-16064	Site evaluation indicates the site does not meet NRHP eligibility requirements	Site in good condition and does not show signs of OHV disturbance
CA-SBR-14818	Scientific; Traditional Use: Prehistoric graves	This site is in good condition and shows no sign of OHV activity.

There are 63 areas of critical environmental concern (ACEC) within the West Mojave Area. Of these, 19 are important and relevant in total or in part for their cultural resources values and many include sites that are listed in Table 3.9-2 or Table 3.9-3 above. Table 3.9-4 describes ACECs with cultural components that have been designated within the West Mojave planning area. Each ACEC has its own management plan with more specific protection goals and descriptions of the cultural resources. Some are valued for their prehistoric sites, some for their historic era sites, some for their Native American values, and some for a combination of these.

Table 3.9-4. Cultural Resource ACECs in the West Mojave Area

ACEC	Cultural Resource Values
Afton Canyon	Moderate density and complexity of sites. Twenty recorded prehistoric sites, including quarries, lithic scatters with ground stone, and occupation/multi-use sites. Represent riparian and lacustrine resource exploitation, tool manufacture, trade, and desert settlement (Bureau of Land Management 1989:38). Scientific use.
Bedrock Spring	Prehistoric. Subject to current research by BLM, this ACEC also contains a variety of site types including habitation sites, rock shelters, rock art, milling, and others. Publication of current research will add materially to our understanding of prehistory in this portion of the Mojave Desert.
Black Mountain	Area contains the most extensive assemblages of prehistoric petroglyphs within California. Quarry and lithic workshops are found within the ACEC as well as evidence for obsidian trade (Bureau of Land Management 1988:6). Scientific, traditional use.
Calico Early Man Site	Lithic tools and debitage are associated with possibly the earliest human occupation on the North American continent. Continued research investigates human occupation and settlement of the Western Hemisphere (Bureau of Land Management 1984:2.1). Public use.
Cronese Lakes	This area contains sites representing occupation beginning 8,000 years ago. Cultural remains provide information regarding subsistence and settlement patterns in the Great Basin (Bureau of Land Management 1985:1-5). Scientific use.
Denning Spring	Cultural resource values include at least four major resource locations. In addition to historic resources not formally recorded, prehistoric sites are designated SBR3828 and SBR 3829B and 3829C (Bureau of Land Management 1982:3). Scientific use.

Table 3.9-4. Cultural Resource ACECs in the West Mojave Area

ACEC	Cultural Resource Values
Fossil Falls	Large complex of prehistoric sites associated with Pleistocene Owens River, 32 of which are listed in the National Register. Research here dates back to work of M.R. Harrington in the 1950s. Area includes the Stahl site, on private land, also an important type site for explication of western Great Basin/Northern Mojave cultural chronology.
Jawbone-Butterbredt	Native American values. Contains a number of locations that were identified by a Kawaiisu elder whose family had lived in the area, including prehistoric and proto-historic/historic archaeological sites, sacred areas, and areas that were known or thought to contain burials.
Juniper Flats	Numerous sites have open trash middens, evidence of cooking, tool manufacture, hunting, and plant/animal processing. An occupied rockshelter is also present. Early historic remains are related to homesteading and mining (Bureau of Land Management 1988:9). Scientific use.
Last Chance Canyon	Prehistoric. Part of the Last Chance Canyon National Register District; the portion of the District considered to be most at risk was selected for ACEC status. Also includes important historic resources.
Pipes Canyon	Native American values. Contains several prehistoric resources which contribute to a district eligible for listing on the National Register of Historic Places (NHRP). Considered to be the greatest concentration of known NHRP eligible sites within the Barstow Field Office. Prehistoric resources include petroglyphs, pictographs, rock shelters, milling sites and village sites. This area is of particular cultural interest to local Native American Tribes.
Rainbow Basin	The badlands within the planning area expose one of the best known and most intensively studied late Miocene age fossil assemblages in the United States. Fourteen archaeological sites have been located, characterized by temporary habitation, flake scatter, petroglyphs, historic mining remnants (Bureau of Land Management 1991:32, 36). Scientific, traditional, public use.
Red Mountain Spring	Prehistoric. Contains 23 recorded sites and other sites that have been located during recent research by Cal Poly Pomona archaeologists. Site types include habitation sites, lithic scatters, milling features, rock art, trails, stacked stone structures, and hunting blinds. Although the ACEC was designated for prehistoric resources there are also historic materials within the ACEC.
Rodman Mountains	Rock art sites in this area have been listed on the NRHP.
Rose Spring	Contains several prehistoric sites. Research at these sites started in the 1950s and continues (Lanning 1963, Riddell 1956). These sites are type sites for cultural chronology of the western Great Basin.
Salt Creek Hills	Site of the first hard rock gold mine in the Mojave Desert (Bureau of Land Management 1992:5). Public use.
Santos Manuel	Prehistoric Native American values and Historic mining values. Includes an extremely rare prehistoric site type and considered a cultural landscape by San Manuel Band of Mission Indians. Eligible for listing on the National Register of Historic Places with implications stating great archaeological importance to the prehistory of the area. Contains several historic mining districts.
Steam Well	Prehistoric. Contains four petroglyph sites

One of the criteria for determining whether or not a site may be eligible for listing in the National Register is that the site has “yielded, or may be likely to yield, information important in prehistory or history” (36 CFR 60) many site types are a priori eligible for listing and are treated as such for management purposes regardless of whether or not formal determinations have been made. Such site types include permanent or semi-permanent habitation sites (“villages”);

temporary camps containing multiple tool types, especially if they contain obsidian; and utilized shelters or caves that contain the same types of materials. As analytical techniques improve or new technologies are perfected, the kinds of data that can be extracted from archaeological materials increase. In contrast to most archaeological sites, which generally provide information on aspects of material culture and relationships between sites and groups of people, sites containing rock art (petroglyphs and pictographs) can provide glimpses into the intellectual and spiritual aspects of culture. Historic sites may yield information on industrial technologies and how they were used or adapted in individual situations; ethnic, gender and age make-up of working populations; food preferences; availability of luxury items to various groups; and even how speculation on Wall Street affected small mining operations in the western United States (Barnes 2001).

All of this means that many, many archaeological sites, both recorded and unrecorded, are likely to be found to be significant and eligible for listing in the National Register of Historic Places if formally evaluated. For these reasons the actual number of sites listed in the National Register is not an accurate indicator of the significance of the resource base as a whole.

Historic Trails

National Historic Trails with alignments within the Planning Area include the Old Spanish National Historic Trail, a unit of the National Park System. Approximately 135 miles of the Old Spanish National Historic Trail are within the Planning Area. In total, this trail is over 2,700 miles in length and crosses New Mexico, Colorado, Arizona, Utah, Nevada, and California. The various route alignments of this historic trail network were a combination of indigenous people's paths, and horse and mule exploration and trade routes utilized to transport merchandise and people in the early 1800s. In an attempt to solidify their position in the American Southwest, Spain wanted to link its colonies of California and New Mexico. As a result, it attempted to find a route that would go from Santa Fe, New Mexico to Monterey, California. Early efforts to find such a path included the trail blazing explorations of mission priests. Mexican trader Antonio Armijo is said to have led the first commercial caravan from Abiquiú, New Mexico, to Los Angeles late in 1829 (NPS 2012). By 1848, at the end of the Mexican–American War, the United States had taken control of the southwest, and with the subsequent Gadsden Purchase, planned a southern route for a transcontinental railroad. After 1848, use of the Old Spanish Trail declined as other routes to California were utilized. The Old Spanish National Historic Trail was established in 2002 and is co-administered by the NPS and BLM, but includes all land statuses. The Old Spanish National Historic Trail is not a constructed contiguous trail with a demarcated alignment, and it has very few officially designated hiking trails along the trail corridor. Although portions of the trail are in private ownership, points along it have public access, viewpoints, and interpretive sites for visitors. Almost none of Old Spanish National Historic Trail is on the Register, and because it is hard to find through pedestrian survey, it is not likely to even be recorded and evaluated. The BLM and the NPS have issued several maps illustrating the various routes comprising the historic trail system from New Mexico to California. Much of this historic trail system has not been confirmed on the ground and the locations of routes are based primarily on historic sources, including diaries and period maps. Therefore, the Old Spanish National Historic Trail designated alignment will be considered and treated as eligible for the National Register on the basis of its setting and visual characteristics and verified historical significance, unless the particular segment lacks integrity.

Sites within Grazing Allotments

As stated in Chapter 1, BLM currently utilizes the Supplemental Procedures for Livestock Grazing Permit/Lease Renewals: A Cultural Resources Amendment to the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer to address the NHPA Section 106 compliance for processing grazing permit renewals for existing livestock allotments.

3.9.3 Methodology to Increase Information

The BLM, in consultation with the California SHPO and the Advisory Council on Historic Preservation (ACHP), has determined that compliance with 43 CFR 8342.1 and Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations at 36 C.F.R. Part 800 will be accomplished through the negotiation of a WEMO specific implementation of the Programmatic Agreement among the Advisory Council on Historic Preservation, the Bureau of Land Management-California, and the California Office of Historic Preservation Regarding National Historic Preservation Act Responsibilities for the West Mojave Plan Environmental Impact Statement and the West Mojave Route Network Project (September 2015) (Agreement) Programmatic Agreement (PA). The Agreement was developed in consultation with the ACHP, SHPO, Indian tribes, and other consulting parties identified by the BLM, between June 2012 and September 2015. In compliance with the provisions of the Agreement, BLM has used the Phase I information to develop a GIS-based sensitivity analysis and predictive modelling program (Model), and is currently working on field verification of the Model. The Model will be used to inform the implementation of the Historic Properties Management Plan (HPMP), as required by the Agreement. The Model and HPMP will guide the BLM in designing inventory strategies for the WEMO Planning Area; in evaluating identified resources for NRHP eligibility; in assessing effects to historic properties. The eligibility results for the 2015, 2016, 2017 and 2018 surveys years are shown in Table 3.9-5 Class III Survey Results for Eligible and Ineligible Sites for the NHRP.

Table 3.9-5. Class III Survey Results for the NRHP

Totals	2015	2016	2017	2018
Total New Sites Recorded	298	91	115	113
Total Sites Monitored	10	8	36	26
Total Sites Recommended for Eligibility	9*	8	1	TBD ¹

* In 2015 eligibility determinations were not made for monitored sites.

¹ Eligibility and ineligibility have not be determined by the SHPO at time of publication.

3.10 Visual Resources

Visual resources refer to any objects (man-made and natural, moving and stationary) and features, such as landforms and water bodies that are visible on a landscape. These objects and features contribute to or detract from the overall visual appeal or scenic (visual) value of the

landscape. Scenic (visual) value refers to the measure of relative worth of a landscape's inherent natural beauty. Disciplines within the environmental design arts (e.g., landscape architecture, architecture, or similar) use the basic design elements of form, line, color, and texture to describe and evaluate landscapes. Modifications in a landscape that repeat the landscape's basic visual elements are said to be in harmony with their surroundings. Modifications that do not harmonize often typically look out of place and they create contrast and stand out in unpleasing ways. Visual impacts are any introduction or reduction of modifications to the landscape that negatively or positively affects the visual character or quality of a landscape based on the basic elements of form, line, color, and texture.

Landforms, vegetation, water surfaces, and human-made physical changes all contribute to a landscape's visual qualities. A landscape's existing visual character is the baseline used to determine whether a proposed action would be either compatible or incompatible with that character. The public's expectations, goals, values, awareness, and concerns also inject a social dimension into this visual resource analysis. This social dimension helps determine both the visual sensitivity and the relative degree of public interest in a landscape, and therefore the public concern over potential changes to that landscape (DRECP LUPA 2016).

3.10.1 Visual Resource Management and Inventory Classes

Visual resources management goals and objectives are managed through BLM Manual H-8410-1. To accomplish this, BLM has developed and uses an analytical process—the VRM system—to identify, set, and maintain those scenic values. The VRM system has two key aspects: inventorying visual resources and managing those resources (BLM 1984[a]). Through the Visual Resource Inventory (VRI) process, BLM identifies the visual resources of a given area and, based upon specific standards, assigns an inventory class to each area. This process, further described in detail in BLM Manual H-8410-1, Visual Resource Inventory (1984[b]), involves rating the resource's visual qualities or “Scenic Quality”, measuring public concern or “Sensitivity Level”, and determining the extent to which an area is visible from travel routes and other observation points or “Distance Zones” (See regulations in Appendix E.10). Those three factors then determine which of four VRI classes are assigned to each area of BLM-administered lands (see Visual Resource Inventory Classification Matrix in Appendix E.10). These four VRI classes represent the relative values of the existing visual resources. VRI Classes I and II represent the highest visual value, Class III represents moderate value, and Class IV represents relatively low visual value. The four VRI classes are the foundation upon which BLM considers visual values in its management planning processes. As shown in the Visual Resource Inventory Classification Matrix, inventory classifications are based on scenic quality, sensitivity level (high, medium, and low), and distance.

Using its VRM approach, BLM considers VRI values in the larger context of other management needs and decisions. The BLM then determines the appropriate visual resource management classes to assign to each specific geographic area. Due to management considerations, the VRM class that BLM assigns to a given area does not always correspond to the area's VRI class assignment. For example, management decisions could result in a management class of VRM II assigned to a VRI Class III area. In cases where VRM classes have not been designated in management plans, BLM assigns interim VRM classes on a project-specific basis through the permit approval process. VRM Class I is assigned to areas identified as VRI Class I, including Wilderness, wilderness study areas, and other locations where natural environments must not be

altered by human actions, even where exceptional scenic values may be absent. Each of the VRM classes contains visual objectives ranging from preservation to the accommodation of major modifications. The classes therefore allow different degrees of modification to the basic landscape elements of form, line, color, and texture, among other elements (DRECP LUPA 2016).

The four VRI Classes assigned to public lands based on scenic quality, sensitivity level, and distance zones and the acreage of each of the four VRM classes affected within the WEMO Planning Area are shown in Table 3.10-1. Each class has an objective that prescribes the amount of change allowed in the characteristic landscape. Through the DRECP LUPA process, the BLM has designated VRM Classes to all public lands in the CDCA, which includes the WEMO Planning Area. Each VRM Class allows for landscape changes from management activities and use authorizations that contrast at different levels with the existing characteristic landscapes based on the respective VRI class/classes in a given area. VRM Class objectives are one of many parameters used for the management and conservation of public land values (includes visual values).

Although special areas generally fall into VRI I and II classifications with VRM Class I and II objectives, they are managed on a case-by-case basis for the values, objectives and relevance and importance criteria for which they were designated (See Appendix E.11).

3.10.2 Characteristic Landscape

The topography within the WEMO Planning Area is varied, and ranges from valley floor elevations of approximately 1,700 to 4,000 feet above sea level to mountain elevations of over 8,000 feet above sea level. Mountain ranges border the western side of the planning area, and include the San Gabriel, San Bernardino, Sierra Nevada, and Tehachapi Mountains. The mountains are generally oriented in a north-south direction, with broad alluvial fans at their bases. The mountain ranges tend to be rugged land forms, more scenic than flatter areas, and providing good scenic quality and value. However, these mountain ranges are also monochromatic, and ranges are generally low in vegetation. Between the mountain ranges are broad valleys which are also oriented north-south, and many have flat dry lakes in the valley bottoms. The valleys generally have large, uninterrupted panoramic vistas of the surrounding mountain ranges.

Vegetation types in the planning area depend on the topographic setting. The valley floors tend to be dominated by creosote bush, cholla, and yucca. Vegetation in washes in the mountains includes cat claw, mesquite, and shrubs, perennials, and grasses. Vegetation within the mountain ranges is sparse, and much of it is not visible from a large distance. However, it is visible when in close proximity from viewing points within the mountains, and includes Joshua trees, barrel cactus, and beavertail.

National Historic and Scenic Trails also occur within the planning area. The 1982 Pacific Trail Comprehensive Management Plan provides the overall strategy and guidance for managing the trail and its significant resources. Approximately 52 miles of the trail traverse the northwestern portion of the WEMO Planning Area and provides vistas to the Pinto and Lucerne Valley and the West Mojave and Eastern Slopes ecoregion subareas (NPS 2012[a]). Approximately 34 miles of the Old Spanish National Historic Trail are within the WEMO Area. The NPS is developing the Old Spanish Trail Comprehensive Management Plan, which will provide guidance for

identifying trail routes, protecting trail resources, and enhancing the visitor’s experience along the trail. The trail is a combination of indigenous tribal paths and the horse and mule exploration and trade routes of the early 1800s (NPS 2012b). The Old Spanish National Historic Trail is not a continuous trail alignment, and there are very few officially designated hiking trails along the trail corridor. Although portions of the trail are on privately owned land, there are numerous locations that have public access and viewpoints.

3.10.3 Visual Resource Management and Inventory Affected Classes

Through the 2016 DRECP LUPA, the BLM designated Visual Resource Management (VRM) Classes and approximately 90 percent of VRI classes on all federal lands within the WEMO Planning Area. The distribution of VRM Classes is shown in Figure 3.10-1, VRI Classes in Figure 3.10-2, VRI Scenic Quality Units in Figure 3.10-3, VRI Sensitivity Levels in Figure 3.10-4, and Distance Zones in Figure 3.10-5. The acreage included in each VRM and VRI Class as well as VRI values is summarized in Table 3.10-1. Visual resources for special designation areas, which are often managed and inventoried separately due to special considerations that these areas are designated for, are summarized in Table 3.10-2.

Table 3.10-1 Visual Resource Management and Inventory Total Acres in the WEMO Area

	Resource	Total (acres)	Percent of Planning Area
Visual Resource Inventory Classes¹	Class I ²	229,711	7.4
	Class II	503,189	16.2
	Class III	892,459	28.8
	Class IV	1,174,468	37.9
Visual Resource Management Classes	Class I	510,908	16.5
	Class II	572,239	18.5
	Class III	1,172,252	37.8
	Class IV	839,164	27.1
Scenic Quality	A	206,469	6.7
	B	854,256	27.6
	C	1,695,213	54.7
Sensitivity Level Analysis	Low	660,737	21.3
	Middle	667,547	21.5
	High	1,241,832	40.6
Distance Zones	Foreground-Midleground	2,190,202	70.7
	Background	168,431	5.4
	Seldom Seen	211,482	6.8

1- VRI has not been completed for the total acreage of the WEMO or DRECP Plan Areas

2- VRI Class I includes Wilderness and Wilderness Study Areas

Table 3.10-2 Visual Resources: Special Areas in the WEMO Area

Special Areas	Acres	Percent of Planning Area
Wilderness Areas	538,436	17.4
Wilderness Study Areas	138,560	4.5
Wild and Scenic Rivers	20.4	.0007
National Scenic and Historic Trails (Pacific Crest Trail and Old Spanish Trail)	126	.004
Mojave Trails National Monument	342,791	11.1
Sand to Snow National Monument	62,845	2

3.10.4 Characterization

The WEMO Planning Area is highly fragmented, with a landscape experiencing a high degree of human modification due to urban development, its associated infrastructure and uses, and energy development. In addition, recreation plays a major role in the economy of the area, and much of the area is viewed en-route to or from major tourist destination areas, such as national parks. As the state’s population grows, more visitors will be attracted to public lands for recreation in natural landscapes. With increases in both resident populations and in tourism, scenic values and visual open space have become more important. Management direction aimed at preserving sensitive viewsheds will continue to compete with other land use allocation decisions and management activities for urban development, infrastructure needs, energy development, recreation uses, and other surface-use activities.

The WEMO Planning Area contains just over 65 percent of VRM Class III and IV and approximately 35 percent of VRM Class I and II. Thus, nearly two-thirds of the network’s visual resources are managed for VRM Class III and IV, which have less restrictive goals and objectives than VRM Class I and II that focus on preserving and retaining existing landscapes. VRM Class I consists of designated Wilderness (OHV Closed use) and Wilderness Study Areas (OHV Open/OHV Limited use), comprise approximately 1 percent of the OHV route network within the WEMO Planning Area. Thus, 35 percent of the route network is being actively managed for VRM Class I and II goal and objectives due to FLPMA regulations and as congressionally or legislatively designated lands. VRM Classes III and IV within the WEMO Planning Area contain 99 percent of the OHV network and must be managed with the designation of routes to partially retain and provide for management activities that meet the BLM’s multiple-use mandate in conjunction with all other statutes and regulations associated with travel, right-of-way, grazing and other management plans. The inventory of visual resources, or VRI, provides values that are fairly consistent with VRM goals and objectives. Moreover, VRI does provide a more in-depth look at visual values with Scenic Quality, Sensitivity Level and Distance Zone GIS analysis. The WEMO Planning Area has a majority of Scenic Quality “C” with 1,695,213 acres or 54.7 percent, Sensitivity Level of “high” with 1,241,832 acres or 40.6 percent, and Distance Zones being primarily in “foreground-middleground” at 2,190,202 acres or about 70.7 percent. Furthermore, these three overlays that comprise VRI are considered in conjunction to determine the inventory class.

Scenic Quality C, which is the most prevalent in the planning area, generally follows the 7 criteria factors and descriptions:

- Landform: Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features.
- Vegetation: Little or no variety or contrast in vegetation.
- Water: Absent, or present, but not noticeable.
- Color: Subtle color variations, contrast, or interest; generally mute tones.
- Influence of adjacent scenery: Adjacent scenery has little or no influence on overall visual quality.
- Scarcity: Interesting within its setting, but fairly common within the region.
- Cultural modifications: Modifications add variety but are very discordant and promote strong disharmony.

VRI Sensitivity is determined to be one of three levels: low, medium and high. Approximately 40.6 percent of the WEMO Planning Area is classified as “high”, and generally receives more detailed attention. There are six factors generally considered when determining the sensitivity level:

- Types of users
- Amount of use
- Public interest
- Adjacent land uses
- Special areas
- Other factors such as research or studies that include indicators for visual sensitivity

The VRI Distance Zone that occurs most commonly in the planning area is foreground-middleground at 70.7 percent, however there are 5.4 percent of background and 6.8 percent of seldom-seen within the planning area:

- Foreground-middleground: This is the area that can be seen from each travel route for a distance of 3 to 5 miles, and from which management activities might be viewed in detail.
- Background-zone: This is the remaining area which can be seen from each travel route to approximately 15 miles.
- Seldom-Seen Zone: These are areas that are not visible within the foreground-middleground and background zones and areas beyond the background zones.

3.11 Special Designations and Other Inventoried Areas

Specially designated areas and other inventoried areas within the WEMO Planning Area include Wilderness areas, Wilderness Study Areas (WSAs), Areas of Critical Environmental Concern (ACECs), Desert Tortoise ACECs (formerly designated as Desert Wildlife Management Areas [DWMAs, California Desert National Conservation Lands (CDNCLs), Lands Managed for

Wilderness Characteristics (other inventoried area), National Monuments, and National Scenic and Historic Trails. These areas are managed to protect specific resources and values that were associated with their designation or inventory. The locations of ACECs are shown in Figure 3.11-1, Wilderness areas and WSAs are shown in Figure 3.11-2, and Lands Managed for Wilderness Characteristics in Figure 3.11-3. CDNCL locations are illustrated in Figure 3.11-4. The locations of DT ACECs were shown in Figure 3.4-69. Information on designated Wilderness areas is displayed in Table 3.11-1. Additional information on special designated areas can be found in Appendix E.

3.11.1 Wilderness

By enacting the California Desert Protection Act of 1994 (P.L. 103-433), Congress designated 69 Wilderness areas in southern California and directed that they be administered by the BLM pursuant to the Wilderness Act of 1964 (P.L. 88-577). Seventeen of these Wilderness areas are within or partially within the planning area. Subsequently, Congress enacted the Omnibus Public Land Management Act of 2009 (P.L. 111-11), which designated three additional BLM-managed Wilderness areas in southern California, including the Pinto Mountains Wilderness within the WEMO Planning Area. Table 3.11-1 lists these 21 Wilderness areas and 4 Wilderness study areas, together with the amount of public land ownership within each. More information on each of these Wilderness areas can be found at <https://www.blm.gov/node/9974/>.

Table 3.11-1. Wilderness Areas and Wilderness Study Areas within the WEMO Planning Area

Wilderness Area Name	Acres Managed by BLM
Argus Range	18,392
Bighorn Mountain	26,626
Black Mountain	20,929
Bright Star	8,738
Cleghorn Lakes	39,797
Coso Range	52,309
Darwin Falls	8,812
El Paso Mountains	24,279
Golden Valley	36,553
Grass Valley	32,835
Joshua Tree	9
Kelso Dunes	15
Kiavah	21,910
Mojave	3
Newberry Mountains	27,746
Owens Peak	50,860
Pinto Mountains	24,950

Table 3.11-1. Wilderness Areas and Wilderness Study Areas within the WEMO Planning Area

Wilderness Area Name	Acres Managed by BLM
Rodman Mountains	34,239
Sacatar Trail	34,087
San Gorgonio	41,460
Sheephole Valley	33,887
Total = 21 Wilderness areas	538,436 acres
Wilderness Study Areas	Acres Managed by BLM
Cady Mountains	84,400
Soda Mountains	46,153
Great Falls Basin	7,867
Total = 3 Wilderness study areas	138,560

Wilderness areas in the WEMO Planning Area include important habitat of several West Mojave species of concern, particularly bighorn sheep, prairie falcon, and golden eagle. The majority of the known golden eagle and prairie falcon nest sites are within Wilderness areas.

Five of the 21 Wilderness areas are encompassed or partially encompassed within desert tortoise critical habitat. These include the Rodman Mountains, Newberry Mountains, Black Mountain, Grass Valley, Pinto Mountains, and portions of Golden Valley.

Wilderness Study Areas (WSA)

There are three designated Wilderness study areas in the planning area. These include Cady Mountains, Soda Mountains, and Great Falls Basin Wilderness study areas.

3.11.2 Lands Managed for Wilderness Characteristics

To address lands managed for wilderness characteristics, the BLM updated its inventory for the DRECP LUPA. The updated inventory was utilized for the West Mojave Planning Area. The 2016 DRECP designated a portion of the lands inventoried to have Wilderness characteristics in the CDCA to be managed for Wilderness characteristics. These units are listed in Table 3.11-2, and shown on Figure 3.11-3. The 2016 DRECP LUPA contains CMAs for lands that have Wilderness characteristics but are not being managed for those characteristics, including those lands inventoried after the DRECP LUPA ROD. In the DRECP LUPA, BLM designated a portion of the Wilderness inventory units to be managed for Wilderness characteristics. The units identified within the planning area are listed in Table 3.11-2, and shown on Figure 3.11-3.

Table 3.11-2. Lands Managed for Wilderness Characteristics

Unit Number	Acres
132A	28,551.3
132B	34,849.3
158	67,450.8
159	25,273.2
159A	3,787.3
160	15,280.5
160A	24,811.2
160B	15,286.1
170	12,305.6
193	30,835.2
206	66,547.6
251	297,747.9
251A	464.2
252	91,104.4
305	36,126.2
Total Number of Units = 15	Total Acres = 750,420.8

3.11.3 Areas of Critical Environmental Concern

Thirty ACECs wholly or partially within the WEMO Planning Area were established by the BLM through the CDCA Plan and amendments prior to 2005. Of these, the Darwin Falls ACEC was later incorporated into Death Valley National Park.

The 2006 WEMO Plan made numerous changes to the system of land designations for protection of resources in the WEMO Planning Area. Many of these overlapped with each other. The 2006 WEMO Plan established four Desert Wildlife Management Areas (DWMAs, now designated as DT ACECs under the DRECP LUPA), totaling 1,523,936 acres for the protection of the desert tortoise, and four conservation areas totaling 1,726,712 acres for protection of other species. In addition, the 2006 WEMO Plan made modifications to MUC classifications, boundaries, and management objectives of the existing ACECs, and acted as an amended management plan for 25 of these ACECs to incorporate provisions to conserve protected species. In addition, the Plan also brought forward from existing ACEC Plans, where they existed, or adopted modified route networks for each of the areas. The 2006 WEMO Plan established 10 new ACECs within the planning area.

The 2016 DRECP LUPA recognized 63 ACECs within the WEMO Plan Area. The current list of ACECs and conservation areas, with their current acreages, disturbance caps, and estimated current status of disturbance with the planning area, are provided in Table 3.11-3.

Table 3.11-3. Acreage of ACECs and Conservation Areas in the WEMO Planning Area

ACEC/Conservation Area Name	Total Acreage ¹	Disturbance Cap	Disturbed Acres (Preliminary) ²	Percent Disturbed (Preliminary)
Afton Canyon	8,830	1%	122	1.38%
Amboy Crater	639	1%	5	0.74%
Ayres Rock	1,525	0.1%	8	0.54%
Barstow Woolly Sunflower	19,079	0.5%	158	0.83%
Bedrock Spring	785	1%	11	1.37%
Bendire's Thrasher Conservation Area	9,780 ³	-	-	-
	2,212	0.5%	25	1.11%
	7,568	1%	60	0.80%
Big Morongo Canyon	24,940	1%	100	0.40%
Big Rock Creek Wash	309	0.1%	6	1.88%
Black Mountain	51,261	0.5%	241	0.47%
Brisbane Valley Monkeyflower	11,674	1%	196	1.68%
Bristol	102,822	1%	2,888	1.38%
Cady Mountains WSA	101,373	0.25%	242	0.24%
Calico Early Man Site	833	No Cap	-	-
Carbonate Endemic Plants Research Natural Area ⁴	5,040 ³	-	-	-
	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
Coolgardie Mesa	9,835	0.5%	152	1.55%
Cronese Basin	8,468 ³	-	-	-
	2,291	0.5%	1	0.03%
	6,178	1%	50	0.81%
Daggett Ridge Monkeyflower	25,994	0.5%	398	1.56%
Desert Tortoise Research Natural Area	22,189	0.1%	207	0.93%
Eagles Flyway	10,982	1%	141	1.29%
El Paso to Golden	57,921	1%	1,217	2.10%
Fossil Falls	1,630	1%	20	1.19%
Fremont-Kramer	238,387	0.5%	5,798	2.43%
Granite Mountain Corridor	39,249	0.25%	1,198	3.05%
Great Falls Basin	10,312	0.25%	42	0.41%
Harper Dry Lake	485	1%	26	5.33%
Jawbone/Butterbrecht	144,379	1%	8,467	7.33%
Juniper Flats	2,387	1%	171	7.18%
Last Chance Canyon	5,134	1%	139	2.71%
Manix	2,904	1%	28	1.25%
Mesquite Hills/Crucero	5,040	1%	N/A	N/A
Middle Knob	17,766	1%	100	0.56%
Mojave Fishhook Cactus	636	0.5%	11	1.74%
Mojave Fringe-Toed Lizard	22,439	1%	162	0.72%

Table 3.11-3. Acreage of ACECs and Conservation Areas in the WEMO Planning Area

ACEC/Conservation Area Name	Total Acreage ¹	Disturbance Cap	Disturbed Acres (Preliminary) ²	Percent Disturbed (Preliminary)
Conservation Area				
Mojave Ground Squirrel	198,497	1%	4,207	1.54%
Northern Lucerne Wildlife Linkage	21,897	0.5%	902	4.11%
Olancha Greasewood	25,224	1%	270	1.07%
Old Woman Springs Wildlife Linkage	55,971 ³	-	-	-
	2,536	0.1%	61	2.00%
	39,954	0.5%	411	1.03%
	13,458	1%	142	1.05%
Ord-Rodman	204,860 ³	-	-	-
	198,493	0.5%	1,362	0.69%
	6,369	1%	160	2.51%
Panamints and Argus	34,004	1%	458	0.45%
Parish's Phacelia Conservation Area	515	0.5%	16	3.14%
Pinto Mountains	108,200	0.5%	609	0.56%
Pipes Canyon	8,718	0.1%	82	0.94%
Pisgah Crater	46,497	1%	804	1.80%
Rainbow Basin/Owl Canyon	4,104	0.5%	33	0.81%
Red Mountain Spring	718	0.5%	8	1.10%
Rodman Mountains Cultural Area	6,208	0.5%	25	0.41%
Rose Springs	838	1%	38	4.54%
Sand Canyon	2,581	1%	13	0.49%
Santos Manuel	27,358	0.1%	588	0.74%
Short Canyon	754	1%	3	0.42%
Soda Mountains Expansion	16,720	1%	245	1.46%
Soda Mountains WSA	88,780	0.25%	45	0.05%
Soggy Dry Lake Creosote Rings	184	0.1%	7	3.84%
Steam Well	40	1%	3	6.59%
Superior-Cronese	330,674	0.5%	5117	1.13%
Trona Pinnacles	4,058	1%	68	1.66%
Upper Johnson Valley Yucca Rings	330	1%	18	5.35%
Western Rand Mountains	30,321	0.5%	584	1.93%
West Paradise	239	0.5%	4	1.59%
Whitewater Canyon	14,610	1%	98	0.67%

1 – Approximate acreage on BLM land only.

2 – Disturbance cap calculations are preliminary, and currently being modified by BLM.

3 – Unit is split into sub-units that have separate disturbance cap calculations

4 – Disturbance cap calculation not currently available.

3.11.4 Eligible Wild and Scenic River

Appendix F of the 2005 WEMO Final EIS included an analysis of the eligibility of the Mojave River for inclusion in the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq*). The Mojave River is the focal hydrologic system of the central portion of the West Mojave Desert planning area. It is a closed groundwater basin and the free-flowing segments of the Mojave River are largely subterranean. It begins its northerly, largely underground flow near Hesperia at the boundary of the San Bernardino National Forest and the CDCA. The two primary forks of the upper watershed, Deep Creek and the West Fork of the Mojave River, converge at the Mojave Forks Dam to form the main stem of the Mojave River.

The eligibility report determined that a 22.5 mile long reach (14 miles on BLM public lands) of the river near Afton Canyon were eligible for inclusion in the NWSRS. The report recommended a classification of “Recreational” for this segment. The area was cited for its outstanding and remarkable scenic, geologic, recreational, wildlife, cultural and historic values. Seven miles of the river are within Afton Canyon ACEC and one mile is within Manix ACEC. Afton Canyon is one of the most heavily used recreation areas of the California desert. The area is used by OHV enthusiasts, equestrians, rockhounds, campers, picnickers, hikers, hunters and birdwatchers. Public lands in this segment have been previously designated as an Area of Critical Environmental Concern in part because of spectacular scenery. Regionally rare plant communities such as Cottonwood-Willow Riparian Forest, Willow Riparian Scrub, Mesquite Bosque, as well as alkaline meadow, and emergent plant communities can also be found along this portion of the river. Wildlife supported by these plant communities includes a high percentage of neotropical migratory birds and local or regional disjuncts. The threatened desert tortoise occurs near this segment, as well as a host of sensitive and/or special concern species such as the Southwestern Pond Turtle and Bighorn sheep. The presence of flowing water in this segment has served to attract humans for thousands of years. The high relief, stark topography and lush riparian vegetation provided by this segment continue to offer many opportunities for non-intrusive recreation.

3.11.5 California Desert National Conservation Lands

The 2009 Omnibus Public Land Management Act directed the BLM to include lands managed for conservation purposes in the California Desert Conservation Area as NCLs. The BLM used the DRECP LUPA process to identify these lands. The CDNCLs are managed using CMAs, including a 1% ground disturbance cap and the ACEC ground disturbance caps as a conservation delivery mechanism.

The DRECP LUPA, and the accompanying environmental review, provided a comprehensive review of public land conservation in the CDCA, updating and consolidating the conservation decisions made in the CDCA Plan of 1980 and its subsequent amendments, using landscape-scale data. This review considered the criteria for National Conservation Lands, as defined in the Omnibus Act, and identified nationally significant landscapes with outstanding cultural, ecological, and scientific values. The BLM used the DRECP LUPA planning process to formally identify those lands within the CDCA that the BLM will manage for conservation purposes in the CDCA, as a component of the NLCS.

The DRECP LUPA designated CDNCLs within five ecoregion subareas partially or wholly within the WEMO Planning Area. These areas are listed in Table 3.11-4, and shown in Figure 3.11-4. These areas total approximately 1.7 million acres, or approximately 55 percent of the public land within the WEMO Planning Area. The characteristics and management objectives of each unit are provided in Appendix A of the 2016 DRECP LUPA.

Table 3.11-4. Acreage of CDNCLs Within WEMO Planning Area

Ecoregion Subarea	Approximate Acreage	Disturbance Cap	Disturbed Acres (Preliminary) ¹	Percent Disturbed (Preliminary)
Basin and Range	377,000	1%	3,133	0.83%
Mojave and Silurian Valley ²	128,477	-	-	-
	14,135	0.5%	121	0.85%
	114,342	1%	1,238	1.10%
Western Desert and Eastern Slopes	181,515	1%	3,502	1.93%
South Mojave-Amboy	616,849	1%	8,516	1.40%
Pinto, Lucerne Valley and Eastern Slopes	272,831	1%	2,472	0.91%

1 – Disturbance cap calculations are preliminary, and currently being modified by BLM.

2 – Unit is split into sub-units that have separate disturbance cap calculations

3.11.6 National Monuments

In February, 2016, President Obama established the Mojave Trails and Sand to Snow National Monuments, both of which encompass BLM-managed land within the WEMO Planning Area. As discussed in Appendix D, these monuments overlapped the boundaries of subregions which were used as an evaluation tool for the FSEIS. As a result, the subregion boundaries have been re-defined for this FSEIS, and each of these monuments is now a stand-alone subregion. The characteristics of these monuments are described below.

Mojave Trails National Monument

The Mojave Trails National Monument encompasses 1.6 million total acres. The monument area within the WEMO Planning Area is 342,791 acres. The monument helps protect irreplaceable cultural resources both historic and prehistoric. Prehistoric sites include ancient Native American trading routes, habitation, and lithic quarry sites. Historic sites include World War II-era training camps, historic railroads, mining, and the longest remaining undeveloped stretch of Route 66. A portion of the Old Spanish Trail passes through the Monument.

The Mojave Trails National Monument includes all or a portion of six Wilderness areas, one WSA, 16 ACECs, and four CDNCL ecoregion subareas.

Sand to Snow National Monument

The Sand to Snow National Monument encompasses 154,000 total acres, including 83,000 acres of BLM land and 71,000 acres of National Forest land. The monument area within the WEMO Planning Area is 62,845 acres. The Sand to Snow National Monument was designated in part to

protect irreplaceable cultural resources. Thirty miles of the Pacific Crest National Scenic Trail go through the monument and the history of this renowned trail dates back to the 1920s. These resources include Native American trade routes, habitation sites lithic quarry sites, numerous petroglyphs and pictographs.

The Sand to Snow National Monument includes all or a portion of one Wilderness area, four ACECs, and two CDNCL ecoregion subareas.

Disturbance Cap Calculations

A key feature of the DRECP LUPA is the Conservation and Management Actions (CMAs) that establish parameters for allowable land uses within the Land Use Planning Area as a whole (LUPA-wide CMAs), and within each category of special designation areas. These CMAs included caps on the cumulative disturbance permitted within ACECs, DT ACECs, and CDNCLs. In areas where disturbance levels are currently under the cap, new disturbances can only be authorized up to the cap limit. In areas where disturbance already exceeds the cap, authorization of any new disturbances would include a requirement for mitigation of an equivalent area to ensure that the proportion of the area disturbed does not increase.

The ACEC disturbance caps, estimated current disturbed acres, and estimated current proportion of each area disturbed, are shown in Table 3.11-3. The CDNCL disturbance caps, estimated current disturbed acres, and estimated current proportion of each area disturbed, are shown in Table 3.11-4.

3.11.7 National Scenic and Historic Trails

Congress established the National Trails System in 1968 and designated the Appalachian and Pacific Crest as the first national trails. From that time on, the BLM engaged with other agencies and volunteers along the Pacific Crest, and on many other trails later enacted. Today there are 30 congressionally designated National Scenic and Historic Trails in the National Trails System. National Scenic and Historic Trails are signature components of the National Trails System, and protected by the BLM as a part of the National Conservation Lands. The Pacific Crest Trail is the only National Scenic Trail that runs along the southern and western borders of the WEMO Planning Area. In addition to one National Scenic Trail, the planning area also coincides with the Old Spanish National Historic Trail.

The Old Spanish National Historic Trail was established by Congress in 2002. National Historic Trails are extended trails that closely follow a historic trail or route of travel that is of national significance. The BLM identifies and protects the historic routes, remnants, and artifacts for public use and enjoyment. They are managed by the BLM for outdoor recreation, conservation, and public enjoyment. These trails are discussed in more detail in Appendix C of the DRECP LUPA 2016.

3.12 Noise

This section describes the existing ambient noise conditions and sensitivities in the West Mojave Planning Area, and applicable laws and regulations. Individual sources of noises and the potential sensitive receptors of noises in the planning area are discussed. See also the biological section for a discussion of sensitive biological receptors. Most noise studies that quantify

ambient noise conditions are based on chronic sustained noise levels that occur throughout the day, and have limited application to the planning area. Transportation noise studies assume route usage levels and a sustained usage level that are significantly higher than those found on public lands, unless adjacent to major freeways or highways. The types of noises from use of routes on public lands in the West Mojave planning area are generally intermittent noises created by the passage of single vehicles or vehicles in small groups on an irregular and infrequent basis. Higher levels or frequencies of intermittent noise are present along arterial routes and routes used for organized activities, particularly adjacent to start and staging areas on weekends in OHV Open Areas. Organized events can result in modestly higher noise levels along popular routes outside of OHV Open Areas, as well as on the arterial access roads to OHV Open Areas before and after the events.

3.12.1 WEMO Planning Area Ambient Noise Conditions

Noise Sources

Generally, transportation-related noise sources, including road traffic, railroads, and aircraft, characterize the ambient noise environment of the planning area according to the Southern California Association of Governments (SCAG) (2012). The magnitude of noise generated by a given roadway depends upon the overall traffic volume, fleet mix (particularly the percentage of trucks), and average vehicle speed. According to a noise study conducted in 2003 by SCAG on road segments with the highest traffic noise levels in the region (based on data on daily traffic volumes), maximum noise levels (Ldn) in roadways in Southern California, such as the Interstate 15, ranged from 61.5 to 78.1 dBA (SCAG 2003). Although the latest SCAG report came out in (2012), the SCAG 2003 report provided the latest research for ambient noise levels within the planning area. In addition, on arterial roadways with typical daily traffic volumes of 10,000 to 40,000 vehicle trips, noise levels typically range from Ldn 65 to 70 dB at 50 feet from the roadway centerlines. The two major freeways and a handful of highways through the planning area do experience a continuous or near-continuous stream of traffic and associated noise levels, which may fluctuate with diurnal and nocturnal cycles. Other, major projects, during construction periods can last anywhere from days to months, and experience diurnal noise levels that may be substantial and continuous. To view a list of noise sources and associated sound levels, see Appendix E, Section 12.

Most public lands in the planning area are rural and are subject primarily to much lower levels of background noise interrupted by intermittent natural and human-caused noises. Noise in rural areas varies considerably over the course of a day or throughout the year. This noise level variation makes it difficult to accurately determine background noise levels, levels that include natural but not human-caused sounds. Background noise levels in Wilderness areas or very rural areas typically range between 35 and 45 dBA (Ldn) (Department of State 2007). The majority of the OHV use would be located in rural areas where there are few other existing human-caused noise sources. However, these areas also have fewer sensitive receptors in the planning area.

Due to the extent and nature of adjacent military uses in the West Mojave, one intermittent source of loud noise on public lands is from overflights of military aircraft; another is from training activities on adjacent military lands. Hunters utilize high-pitched whistles directed at specific targeted bird species that may disrupt other species. Land uses on public lands tend to generate substantially less noise during operation activities than during construction, and

operational noises are limited in extent and localized in nature. Some maintenance activities may result in loud, but very infrequent noises.

Another consistent, intermittent noise source on public lands is from motor vehicles and trains. Motorcycles are the primary source of loud intermittent transportation-related noise off of highways and major arteries throughout the planning area. The Environmental Protection Agency (EPA, 40CFR205, 1980) under the Noise Control Act set noise emissions standards for large truck and motorcycle exhaust systems to manage their noise levels. The standard for street-legal exhaust noise emissions is 80 dB(a). All motorcycles manufactured after 1985 must operate at 80 dBA or lower. Since 1990, noise levels from motorcycle dirt bikes have decreased from 96 to 88 decibels. A contributing factor for motorcycle noise on public lands is the illegal modification of motorcycle exhaust and muffler systems that can substantially increase noise levels above legal standards. Moreover, due to the intermittent nature and high variability of this noise source, it is difficult to quantify the environmental effects through testing. OHV manufacturers have made huge strides in improving their vehicles to minimize excessive noise. Since 1990, noise levels from motorcycle dirt bikes have decreased from 96 to 88 decibels. Noise reduction can be accomplished by utilizing specific design and construction techniques in OHV areas, through careful trail planning and construction of berms to impede or dissipate sound. Further technological innovations are being made to reduce noise, and air, pollution. At the same time, some individual users have deliberately modified the exhaust systems of their vehicles in order to increase their noise level, a practice which was addressed in California Senate Bill (SB) 435, or Motorcycle Anti-Tampering Act. Another a major contributor to noise levels are railroad operations.

Railroad operations generate high, relatively brief, intermittent noise events. These noise events are an environmental concern for sensitive uses located along rail lines and in the vicinities of switching yards. Locomotive engines and the interaction of steel wheels and rails primarily generate rail noise. The latter source creates three types of noise: (1) rolling noise due to continuous rolling contact; (2) impact noise when a wheel encounters a rail joint, turnout, or crossover; and (3) squeal generated by friction on tight curves. For very high speed rail vehicles, air turbulence can be a significant source of noise as well. In addition, use of air horns and crossing bell gates contribute to noise levels in the vicinity of grade crossings (SCAG 2003).

These ambient noise levels associated with traffic and railroads are expected to be limited to areas near these major transportation arteries, and are likely not applicable to most of the planning area. Most of the public land in the area is relatively remote from these noise sources, and would be expected to exhibit ambient noise levels that are more characteristic of rural areas.. The majority of the OHV use would be located in these rural areas where there are few existing noise sources. These areas would also be expected to have fewer sensitive human receptors, but may also have a larger number of wildlife receptors.

Military and commercial aircraft also incrementally contribute to existing ambient, and these noises would occur in both developed and rural areas of the Planning Area. Aircraft noise generates occasional, but intrusive noise levels for the occupants of property adjacent to airports and/or under the flight patterns of aircraft using airports (San Bernardino General Plan 2007). There are 12 commercial airports within the planning area, including large jet operations at Mojave Airport and the Southern California Logistics Airport. Military aircraft operations occur at Edwards Air Force Base, Twentynine Palms Marina Corps Base, and China Lake. Military operations result not only in ambient noise from jet engines, but sonic booms associated with

military and experimental aircraft. A literature synthesis of the effects of aircraft noise on wildlife summarized numerous experimental studies in which sonic booms were simulated (USFWS and USAF 1988), and the simulations ranged from 72 to 156 db in magnitude.

3.12.2 Sensitive Receptors

Human Receptors

Some land uses are considered more sensitive to ambient noise levels than others due to the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Consequently, the noise standards for sensitive land uses are more stringent than those for less sensitive uses, such as commercial and industrial (SCAG 2003).

Certain human activities and sensitive land uses (e.g., residences, schools, and hospitals) generally require lower noise levels. A noise level of Ldn 55 to 60 dB on the exterior is the upper limit for speech communication to occur inside a typical home. In addition, social surveys and case studies have shown that complaints and community annoyance in residential areas begin to occur at Ldn 55 dB (SCAG 2003).

For purposes of impact analysis among route network alternatives, BLM compared the proximity of OHV Open and OHV Limited routes to sensitive receptors and residences. Sensitive receptors were defined as schools and health facilities. The distribution of noise-sensitive land uses is shown in Figure 3.12-1. The number of sensitive receptors within the WEMO Planning Area is presented in Table 3.12-1.

Table 3.12-1. Sensitive Receptors in WEMO Planning Area

Type of Sensitive Receptor	Within ¼ miles of a Route	Within 1 mile of a Route
Public School	12	43
Private School	0	6
Colleges	1	4
Health Facilities	0	7

In the impact analysis in Chapter 4, BLM identified the mileage of OHV Open and OHV Limited routes within various distances of these receptors. The distances evaluated were 0.25 and 1.0 miles from the receptors.

To estimate the impacts to residences, BLM used the “developed area” layer of the vegetation database as a surrogate for areas where residences exist. In the analysis in Chapter 4, mileage of routes within 300 feet of the developed areas was used as a conservative assessment of the potential for noise impacts to residents.

Wildlife Receptors

Noise from OHVs can affect wildlife by altering movement patterns, causing behavioral changes, and causing stress. The sensitivities of various groups of wildlife to noise vary

substantially, and may be affected by ambient conditions as well as season. FHWA, in its study of traffic noise and wildlife summarized the following relative sensitivities (http://www.fhwa.dot.gov/environment/noise/noise_effect_on_wildlife/effects/wild04.cfm):

- Humans 20Hz to 20kHz; sensitivity at 10-20 dB
- Mammals < 10 Hz to 150 kHz ; sensitivity to -20 dB
- Birds (more uniform than mammals) 100 Hz to 8-10 kHz; sensitivity at 0-10 dB
- Reptiles (poorer than birds) 50 Hz to 2 kHz; sensitivity at 40-50 dB
- Amphibians 100 Hz to 2 kHz; sensitivity from 10-60 dB

In its review of the effect of aircraft noise the authors identify a number of at least potentially, deleterious effects that accompany these sound levels in both domestic and wild species ranging from alert reactions to physiological indicators of stress (e.g. changes in hormonal levels, organ function, etc.). It should be noted that noise levels in these studies are generally intermittent and occur at levels greater than that typically encountered for road or motorcycle traffic (i.e. aircraft sounds generally > 100 dB).

A study conducted by Bowles et al. (1999) showed very little behavioral or physiological effect on desert tortoises of loud noises that simulated jet over flights and sonic booms. They also demonstrated that tortoise hearing is fairly sensitive (mean = 34 dB SPL) and was most sensitive to sounds between 125 and 750 Hz, well within the range of the fundamental frequency of most of their vocalizations. The authors concluded that tortoises probably could tolerate occasional exposure to sonic boom level sounds (140 dB SPL), but some may suffer permanent hearing loss from repeated long-term exposure to loud sounds such as from OHV and construction blasts. Boarman (2002) also indicated noise or vibration might affect tortoises that live alongside railroads, but found there were no studies to document the impact. He concluded, it is not known if train noise negatively affects the behavior, audition, or reproductive success of these tortoises.

3.13 Travel and Transportation Management Network

3.13.1 Relationship to Other Plan Elements

There is considerable overlap of travel management and all BLM uses on public lands. For example, many users of public lands are there for recreation. For visitors, a route system may serve as either a route to a destination or as the recreation location itself. For destination recreation, vehicle routes are the means to get to a starting point to engage in the activity, such as a parking area or trailhead. The route itself also can serve as the focus of the activity, (e.g., pleasure driving, four-wheel vehicle driving, motorcycling, all-terrain vehicle (ATV; see definition below) riding, biking, horseback riding, hiking, snowmobiling, and cross-country skiing). Further, the FSEIS also aims to provide access and use to lands of other ownership and connectivity consistent with travel and transportation management regulations. To reduce the duplication of narrative between travel management and the other sections of this Supplemental EIS, this section addresses only public travel and access concerns; discussion of how other resource programs use the BLM's transportation system are found in those programs' respective sections.

For the purposes of land use planning, Comprehensive TTM can be considered as two basic components, the designation of OHV Areas and the designation of individual routes. OHV Area designations represent the land use planning level decisions and can only be modified through a land use plan amendment or revision. The route designations are considered implementation level actions and occur in unison with many site-specific actions and projects. Route designations are presented in this plan amendment to establish a baseline upon which subsequent site specific activities can work from. The travel network resulting from the route designations should be viewed as dynamic, with changes and modifications occurring with new authorizations throughout the life of the plan.

3.13.2 Modes of Travel and Access Points

Transportation Methods

Traditionally, the BLM’s travel management program focused primarily on motor vehicle use. Within the framework of Comprehensive TTM, this program is significantly expanded to encompass all forms of travel, including travel by foot, horseback and other livestock, mechanized vehicles (such as bicycles), motorized vehicles (such as two-wheeled motorcycles and four-wheeled OHVs, cars, and trucks), and motorized and non-motorized boats. Mode of travel refers to the mechanisms used to move across the land. It is broadly defined in three categories, those that use motors, those using some mechanical method and those reliant only on the movements of the human (or animal) bodies.

Defining the Transportation System includes determining a transportation asset classification and a route designation for each linear travel feature (route) in the TMA. The transportation asset classification identifies the appropriate design and maintenance standards for a route, which is no higher than necessary to accommodate the intended function(s) of the route. The asset classification is not a route designation, but by its nature is correlated with the route designation. The route designation, and, if appropriate, subdesignation, determines the allowable mode of transportation (motorized, non-motorized, non-mechanized) of the route, while the subdesignation(s), if assigned, further defines the types of vehicles and/or users that may use each route. There are three main asset classification categories (road, primitive road, and trail), and there may be associated sub-classification categories as well, which are noted in parentheses in the table below after each asset classification (e.g. primary, secondary, tertiary). The asset classifications and the associated route designations that are used to classify routes are summarized in the following table.

Table 3.13-1. Transportation System Asset Classification and Route Designation Categories

Asset Classification	Designation	Subdesignation
Road (either Collector or Resource)	OHV Limited	Street legal only
Primitive Road (Primary, Secondary or Tertiary)	OHV Open, OHV Limited	OHV Open, ATV/UTV, administrative, authorized/permited, competitive, motorcycle, seasonal, street legal only
Trail	OHV Limited	Motorcycle, ATV/UTV
Trail	Non-Motorized	Biking, seasonal
Trail	Non-Mechanized	Hiking, equestrian, seasonal

Table 3.13-1. Transportation System Asset Classification and Route Designation Categories

Asset Classification	Designation	Subdesignation
Primitive Route*	OHV Limited	ATV/UTV, administrative, authorized/permited, motorcycle, seasonal
Temporary Route*	OHV Limited	ATV/UTV, administrative, authorized/permited, motorcycle, seasonal, street legal only, biking, hiking, equestrian

*These are not technically asset classifications and would not be classified in FAMS.

Motorized Travel

Automobile, truck, and motorcycle traffic can use the varied network of roads and highways developed by the State and Counties. This mode of transportation is by far the most used system in the planning area, with roadways under State, County, service area, and private entity control. In addition to the movement of goods by rail, the planning area is a major corridor for the movement of goods by truck, again connecting Southern California to the rest of the United States. Caltrans, the Counties of Inyo, Kern, Los Angeles, and San Bernardino, and each incorporated community, manage motor vehicle systems in the planning area. The counties maintain many of the roadways within cities by contract.

The increase in the use of OHVs has created several issues on public lands in the planning area. First, the increasing capability of OHVs to traverse difficult terrain allows easier access to remote parts of the planning area, thereby increasing the likelihood of impacts on otherwise protected resources. Second, as the popularity of recreational OHV use continues to grow, there can be conflicts with other public land users. Lastly, the expansion of unauthorized cross-country OHV use is creating additional resource damage in the planning area. The route system within the planning area is widely scattered and disconnected; many BLM parcels within the planning area have little or no legal or physical access. Routes in the planning area have been created and improved by trail and trailhead building, increased administrative access, energy development, and various ROWs. Over the years, many of these routes have also become part of the roads and trail system frequently used by visitors who are engaged in mechanized and motorized recreation. In addition, due to conditions in the desert, a single rider going off trail can develop a new route that remains on the ground for a substantial period of time. Livestock grazing operations also depend on the current route network for access within grazing allotments and access to range improvements. Because livestock grazing operations have decreased overall within the planning area, the dependency on the route network has also decreased.

The management of OHV activities within the planning area includes monitoring and maintaining trails, maintaining a database of use, ongoing training for OHV-related issues, issuing citations and warnings for violations, and coordinating with user groups, local officials, and other agencies.

State System - California Department of Transportation (Caltrans)

The State of California has established a series of state-constructed and maintained routes in accordance with the Street & Highway Code, Art. 3, Sec. 300 et seq. State roadways in the planning area consist of Interstate freeways, freeways, expressways, highways and surface

streets. For more than 100 years, Caltrans and its predecessors have been responsible for designing, building, operating and maintaining the California state highway system. Over time, as the population of California has increased, Caltrans' role has expanded to include rail and mass transit systems. In addition to a changing mix of transportation modes, such as highways, rail, mass transit and aeronautics, Caltrans professionals must consider the integration of various transit issues with land use, environmental standards, and the formation of partnerships between private industry and local, state and federal agencies.

Caltrans operates and maintains 15,000 miles of roadways included in the State Highway System with a budget of over \$10 billion (Caltrans 2012). Caltrans is also responsible for ensuring proper distribution of the State Transportation Improvement Program.

Mass Transit

Mass transit and rapid transit systems in the planning area are limited to more conventional modes, specifically bus. There are many sources of bus public transit within the planning area. The largest providers in the area include:

- **Victor Valley Transit Authority:** The Victor Valley Transit Authority (VFTA) serves the cities of Adelanto, Hesperia and Victorville; the Town of Apple Valley; and the unincorporated communities of Phelan, Wrightwood, Pinon Hills, and Helendale. This transit system carries more than a million passengers annually. Service includes standard bus operations, plus curb-to-curb service for disabled persons.
- **Morongo Basin Transit Authority:** The Morongo Basin Transit Authority transports nearly 143,000 passengers each year in the City of Twentynine Palms, Town of Yucca Valley, and the unincorporated communities of Joshua Tree, Landers, Flamingo Heights, and Yucca Mesa.
- **Barstow Area Transport:** The City of Barstow administers the operation of the Barstow Area Transit, as well as two San Bernardino County-supported specialized services for seniors and persons with disabilities in the communities of Big River and Trona. The system carries more than 144,000 passengers each year.
- **Antelope Valley Transit Authority:** The Antelope Valley Transit Authority serves the Lancaster/Palmdale area. They provide a variety of services including local and commuter services. The transit system carries more than a million passengers annually.
- **Kern Regional Transit (KRT):** KRT operates a fleet of 30 vehicles ranging in size from 15 passenger paratransit minibuses to thirty-foot, heavy duty transit buses, with service in excess of 1.2 million miles. The KRT connects Taft, Frazier Park, Lancaster, Mojave, Wasco/Shafter, Delano, California City, Tehachapi, Ridgecrest, Inyokern, and Bakersfield with a ridership of over 450,000 passengers.

Rail

The WEMO Planning Area is a major rail corridor for bringing goods in and out of the Southern California ports and metropolitan area. The entire rail network is operated by the private sector with the Southern Pacific and the Burlington Northern – Santa Fe rail systems carrying freight

through and beyond the boundaries of the planning area. With the completion of the Alameda Corridor rail line, rail traffic is expected to increase to even higher levels in the future.

Aviation

There are several airports operating in the planning area. These facilities provide opportunities for air traffic and the movement of goods. A wide variety of air flights originate from the region, including small private plane operations, passenger flights and freight movement. In addition to the municipal and community airports, there are several military airfields located within the planning area.

Mechanized Travel

The climate in the West Mojave is well-suited for bicycle travel at many times of the year. Bikeways exist in most cities and in some unincorporated portions of the planning area. Most bikeways exist as marked lanes on surface streets within the communities. Many of the more recently developed portions of the planning area provide for foot traffic along sidewalks in residential areas while some of the older subdivisions make no provisions for pedestrians. Generally speaking, foot traffic pathways between unincorporated communities are nonexistent.

Mechanized travel, such as mountain biking, is becoming increasingly popular on public lands, and several areas in the WEMO Planning Area are considered premium destinations. Throughout the planning area, mechanized use is not limited to designated routes, unless otherwise specified. Mechanized use is primarily occurring on old motorized routes, game trails, and user-created trails, as well as on planned single-track routes. Popular mountain biking areas in the planning area include Juniper Flats, Lucerne Valley, Calico Mountains, Sierras, El Paso Mountains, South Searles, Red Mountain, and the Rademacher Hills. The Rademacher Hills are an area within the Ridgecrest subregion where a Special Recreation Permit has been issued for a competitive mountain bike race for the last few years (2011-13) and was the sight of races for about ten years straight in the 1990s.

Non-Mechanized Transportation

Hiking and horseback riding have been increasing in popularity within the planning area. The high rate of population growth and sprawl of communities in Southern California, including Los Angeles, Ventura, and Santa Barbara, have subsequently added overflow pressure to public lands in the vicinity.

Hiking, Mountain climbing, and Rock Climbing are all popular forms of Non-mechanized travel. Hiking occurs both cross country and on established pathways. Those pathways used include roads and trails that are currently used by other vehicles, trails that are no longer in use by vehicles, livestock and game trails, plus historic pack and transportation trails. Some of the locations that are currently popular for hiking include Grapevine Canyon, Little Tahiti Falls, Deep Creek, Rainbow Basin, Mitchell Mountain, Sunrise Canyon, Fairview Mountains, Sand Canyon, Short Canyon, Rademacher Hills, Pacific Crest Trail, Fossil Falls, Centennial Canyon, Sacatar Trail, Great Falls Basin, and the Trona Pinnacles.

Another popular activity is hiking to scale a mountain to its highest point/peak often referred to as mountain climbing or peak bagging. Popular mountains to scale in the WEMO Planning Area

include Cave Mountain, Fremont Peak, Bell Mountain, Quartzite Mountain, Ord Mountain, Owens Peak, Black Mountain, Red Mountain, Chuckwalla Mountains, Butterbredt Peak, and Morris Peak.

The activity of rock climbing in which participants climb up, down or across natural rock formations is gaining popularity on the public lands. Some of the popular locations for people to rock climb include Sawtooth Canyon, Horseman Center, Margaritaville east of Apple Valley, Mule Canyon, Fairview Mountains, Fossil Falls, Five Fingers, School House Rocks, Robbers Roost, Poison Canyon, Great Falls Basin, and Wagon Wheel area.

Horseback riding is common, but dispersed throughout the planning area on trails and roads. No routes have been specifically constructed for equestrian use, but equestrian use occurs on routes that were constructed for other modes of travel. In the planning area, popular horseback riding areas include Mojave Riverbed, Afton Canyon, Juniper Flats, Rattlesnake Canyon, Morongo Valley, Rainbow Basin, Owl Canyon, Calico Mountains, McCloud Flat, Searles Valley, Red Mountain, Rand Mountains, El Paso Mountains, and the Rademacher Hills. In addition to these areas, horseback riding is popular in and around many of the desert communities including Trona, Ridgecrest, Inyokern, Victorville, Hesperia, and Roy Roger's home community of Apple Valley.

The use of horses as part of grazing operations also occurs within the planning area. Because livestock grazing operations have decreased overall within the planning area, the dependency on the use of horses has also decreased; however their use is still key, particularly in grazing allotments which overlap designated Wilderness areas.

Corral type facilities have been developed at the Afton Canyon, Rainbow Basin, and Owl Canyon campground group sites.

In addition to casual use the Ridgecrest Field Office annually authorizes about six Special Recreation Permits for equestrian endurance events and long distance tours. The long distance tour takes riders from the community of Ridgecrest all the way to Furnace Creek in Death Valley National Park. While the endurance events challenge the conditioning of horse and rider to see if they can cover from 50 to 100 miles in less than 24 hours. These events occur within the following subregions Ridgecrest, El Paso, Sierra, Red Mountain, Rand Mountains, and South and North Searles.

West Mojave Planning Area Roads

The road system within the planning area is mostly composed of four classifications of roads: major highways, arterials, collectors and local streets. Design, construction, and maintenance of the surface road system is the responsibility of each local jurisdiction's roads department or Caltrans.

The following road standards are left purposefully vague due to the numerous jurisdictions within the planning area. Specific road standards are available from each local jurisdiction.

Major Highways

There are many major roadways that connect this large planning area. Most of the major highways are two to four lane roads with some expanding to eight lanes in the more urban

section of the planning area. These roads are state and US routes and are maintained by Caltrans and include:

- State Route 14: This route is classed as a major conventional highway/freeway. It is a north-south route located in Los Angeles County.
- State Route 18: This route is classed as a major conventional highway. It is an east-west route located in the southern portion of the planning area in San Bernardino County, with a short section in Los Angeles County.
- State Route 58: This route is classed as a major conventional highway/freeway. It is an east-west route located in San Bernardino and Kern Counties. This highway has many four-lane sections along its alignment.
- State Route 62: This route is classed as a major conventional highway. It is an east-west route located in San Bernardino County.
- State Route 127: This route is classed as a conventional highway. It is a north-south route located in San Bernardino and Inyo Counties.
- State Route 138: This route is classed as a major conventional highway/expressway. It is an east-west route located in Los Angeles and San Bernardino Counties.
- State Route 178: This route is classed as a conventional highway. It is an east-west route located in Inyo, Kern, and San Bernardino Counties. This highway expands to four lanes through Ridgecrest in the planning area.
- State Route 190: This route is classed as a conventional highway. It is an east-west route located in Inyo County.
- State Route 202: This route is classed as a conventional highway. It is an east-west route located in eastern Kern County.
- State Route 223: This route is classed as a conventional highway. It is an east-west route located in Kern County.
- State Route 247: This route is classed as a conventional highway. It is a north-south route located in San Bernardino County.
- U.S. Route 95: This route is classed as a major conventional highway. It is a north-south route located in eastern San Bernardino County.
- U.S. Route 395: This route is classed as a major conventional highway/expressway. It is a north-south route passing through San Bernardino, Kern, and Inyo Counties.
- Interstate Route 15: This route is classified as a major interstate. It runs northeast through San Bernardino County from the southwest corner of the planning area to the northeast.
- Interstate Route 40: This route is classified as a major interstate. It runs east-west through the southern section of the planning area through San Bernardino County.

Major highways are important to grazing operations with the planning area. Major highways not only connect these rural operations to towns and cities for meeting the needs of the rancher and their families, but also provide access to auction barns and other livestock markets. Major

highways are essential for the transportation of sheep from the Bakersfield area out to grazing allotments in the planning area.

Arterials

Arterials are routes with high traffic carrying capacity. An arterial might be defined as a road that is used, designed to be used, or is necessary to carry high volumes of traffic. An arterial, when constructed to its ultimate standard, is typically two lanes of traffic and a parking lane each way separated by a median with additional right-of-way on either side. Access is typically limited in order to minimize potential conflicts. Subdivision standards limit access to two intersecting local streets between arterials and collectors (1/2 mile distance), with no intersection closer than 660 feet to another. Also, developers are usually required to abandon the right of OHV access from lots adjacent to arterials. Actual listing of arterial locations is too numerous for this document. Arterials are usually within a 110 foot right-of-way and provide a connecting route between population centers and major highways. Arterials may also form the boundaries for neighborhoods. At present, numerous arterial alignments, especially in the rural areas, exist at local street standards (approximately 60-foot right-of-way). It is anticipated that development and traffic demand would result, ultimately, in the widening of these roads.

Collectors

Collectors are the next lower level of traffic carrying capacity. These routes carry lower volumes of traffic than arterials, but more than local streets. Collectors serve as collections for local street systems directing traffic to the arterials. These roads occasionally serve as boundary streets for neighborhoods and as a general rule are located along mid-section lines. The collectors usually have two-travel lanes and a parking lane each way with minimal additional right-of-way. While some residential lots may have OHV Open use access to collectors, it is preferable that access is OHV Limited use and access to properties is directed to local streets.

Local Streets

Local circulation routes generally provide access directly to abutting properties. Under existing standards, these roadways consist of approximately 40 foot traveled way improved sections and 10-foot parkways on each side. The width of these roads varies a great deal with newer developments usually having wider travel lanes.

Travel and Transportation Inventory Update

The existing baseline inventory of routes is a combination of the 1985 and 1987 inventory, the 2001 and 2002 inventory that was conducted for the 2005 WEMO planning effort, and the inventory update conducted in 2012 and 2013, in support of this plan amendment. This plan amendment supersedes Appendix R of the 2005 EIS.

In 2012 and 2013, BLM updated the inventory of linear features by tracing additional features from USDA's one meter-resolution NAIP aerial photography into the GTLF geospatial database. The inventory consisted of the West Mojave network (as corrected), which serves as the No Action Alternative, and other linear features that currently exist on the ground, to ensure that all existing features were included in the analysis. Note that this inventory reflects the on-the-

ground features existing as of 2013, and thus includes features that were developed after 1980, either as a result of BLM authorizations or through the unauthorized proliferation of routes. It also reflects substantial improvement in technical accuracy—many of the “new” features are simply the result of better photography since 1980 and were not detected at that time. Inventory updates since the 2005 WEMO planning effort have included using aerial imagery to digitize linear features within the WEMO Planning Area in an effort to update the baseline inventory to include as many known routes and translinear disturbances as possible. In some areas, OHV crews have identified route locations by using GPS devices.

Off-Highway Vehicle Management Areas

All public lands within the WEMO Planning Area are currently designated as either Open to OHVs, Closed to OHVs, or OHV Limited. The Open Areas were shown in Table 3.6-2, in the discussion of recreation. Most of the WEMO Planning Area, 73.6 percent, is designated as OHV Limited.

Closed Areas do not allow OHV travel within the boundaries. Areas designated as Closed within the WEMO Planning Area include congressionally designated Wilderness units, land in ACECs and Special Areas where provided for in management plans, and in certain sand dune and dry lakebeds.

Open Areas allow for motor vehicle travel anywhere in the area if the vehicle is operated responsibly in accordance with regulations. Even though within Open Areas vehicle travel is not restricted to a designated route system, sometimes routes are designated within the boundaries to assist the public in navigation through the areas and to locations of public interest. The Open Areas include designated OHV Open Areas (Table 3.6.2) and certain sand dune and dry lakebeds (see CDCA Plan, 1999, p. 78, Table 9.)

Limited Areas allow for motor vehicle travel to occur only on certain “routes of travel,” which include roads, ways, trails, and washes, unless as identified on specific dune systems or lakebeds. At a minimum, use is restricted to existing routes of travel. An existing route of travel is a route established before approval of the Desert Plan in 1980, with a minimum width of two feet, showing significant surface evidence of prior vehicle use or for washes, history of prior use. When necessary, other limitations may be stipulated.

Due to higher levels of resource sensitivity OHV access may be directed toward use on approved routes of travel. Approved routes include primary access routes intended for regular use and for linking desert attractions for the general public as well as secondary access routes intended to meet specific user needs. The Western Mojave Desert Off Road Vehicle Designation Project (2003) along with the 2006 WEMO Plan both reviewed route of travel within the planning areas and established an approved network of routes of travel.

In general, the designated routes of travel are available for use by the public by all modes of travel including OHV, mechanized, and non-mechanized. At times as needed to protect and manage resources or to provide a varied recreational experience further limitations maybe placed on the designated routes. Some examples of these further restrictions that maybe implemented include modes of travel, periods of use, and types of user, such as authorized users (e.g., grazing permittees, right-of-way holders) or are limited to administrative access for agency purposes.

Characterization and Trends

Transportation methods in the West Mojave are not unlike those of other communities. The movement of humans and agricultural and industrial products in and out of the planning area is provided by a variety of systems associated with smaller urban centers and rural areas. The planning area serves as a major transportation corridor taking goods and people in and out of the Los Angeles and Kern County metropolitan areas. With the completion of the Alameda Corridor rail line, the movement of goods is expected to continue to increase. Relatively inexpensive housing and the rural lifestyle of the planning area make commuting into the more populated coastal area attractive for many residents. This trend is expected to continue with the large increase in population that is expected. The planning area has a number of different means of transportation and these systems have been developed to connect farm/industrial/commercial centers to cities, and cities to communities within the County and State, and in other states and other nations.

Indicators to measure trends in travel management include the size of designated areas for OHV use (e.g., open, limited, or closed), miles of routes and trails in limited use areas, miles of routes and trails where motorized, mechanized, and non-motorized uses are allowed, restricted, or not allowed depending on resource and use considerations.

Demand for OHV use rapidly increased in the 1990s and continued into the first few years of the 2000s (Cordell and others 2008). In 1995, approximately 368,600 OHV and ATV were sold. By 2006, that number had almost tripled to approximately 1,034,966 OHV. Over a 10-year period, the total number of OHV grew from fewer than three million to more than eight million in 2003. Sales from 2004 through 2006 totaled almost 3.25 million vehicles. Assuming at least one million new vehicles were sold in 2007 and that 80 percent of all vehicles are still operable, there would be as many as 9.8 million ATV and off-road motorcycles in the US as of January 1, 2008 (Cordell and others 2008). Since 1980, OHV “green sticker” registrations in California have increased by 108%. Attendance at the State of California’s State Vehicular Recreation Areas (SVRAs) increased from 1985 to 2000 by 52%. Registration of OHVs through the California Department of Motor Vehicles increased from 235,003 in 1980 to a peak of 1,135,919 in 2008.

The sales of OHV peaked in 2008, according to recent figures, and began to drop off with the economic downturn. Since 2008, the number of OHV registrations in California has declined every year to 905,366 in 2013. However, over the long-term, OHV use is expected to continue to increase in the planning area because of its proximity to southern California population centers and other popular recreation destinations, and based on the anticipated growth of populations in the high desert. Non-mechanized and non-motorized use close to urbanizing areas is also expected to grow as population grows. Demand for equestrian, hiking and mountain biking trails is expected to continue to increase on public lands next to all of the municipalities in the planning area, as well as in areas close to major subdivisions outside of incorporated towns.

3.14 Paleontological Resources

3.14.1 Paleontological Inventory and Mapping Methodology

Due to the immensity of the area of interest and the wide variety of its landscapes and rock units, the approach used to approximate the potential fossil yields in the 2015 DRECP EIS was by using geologic rock distributions in published reports. The distribution of paleontological resources is directly linked to the distribution of the geologic rocks preserving those resources.

The BLM's PFYC system utilizes this approach by assigning a specific PFYC ranking to individual rock units. Because the WEMO Planning Area is a subset of the DRECP area, the method of approximating potential fossil yields on a regional basis used for the 2015 DRECP EIS is also used for the analysis of the impacts of the WMRNP. The following paragraphs describe the procedure used in the DRECP, and thus adopted for the WMRNP.

To support the analysis of impacts to paleontological resources, a regional baseline inventory of the fossil yield potential of geologic rock within the DRECP area was developed. The regional scale of the geologic data used (1:750,000) means that the inventory is useful only in initial constraints analysis and for providing a general comparison of potential paleontological resource effects among alternatives. Assignment of geologic groups to various PFYC classes does not indicate where fossils may or may not be found, but rather suggests areas where the potential yield is higher relative to other locations assigned to lower PFYC classes.

As indicated in Figure III.10-1 of the DRECP EIS, a large body of geologic data is produced at various scales, to different extents, and with different formats to provide the baseline geologic data that determine PFYC classes. This DRECP EIS relied upon the 2010 Geologic Map of California, which is an updated and much improved version of a 1977 map, to identify potential fossil-yielding potential. It presents the geology of the DRECP area at a 1:750,000 scale (California Geological Survey 2013). The original map had accuracy errors that have been corrected. Data in the old version did not differentiate between Quaternary-age geologic units. In the 2010 version, older Pleistocene-age units are now differentiated from younger Holocene-age units. This distinction is important from a paleontological resources perspective because of the greater potential for Pleistocene deposits to contain fossil remains.

Relevant BLM guidance documents (IM 2008-009 and IM 2009-011), in combination with results from a comprehensive literature search of existing geologic and paleontological conditions in the DRECP area, were used to assign PFYC classes to the geologic rock units on the statewide map. Table R1.10-2 in Appendix R1 of the DRECP EIS presents each geologic unit and its estimated PFYC class. The challenge with using statewide data is that some of the criteria for assigning PFYC classes require local, site-specific knowledge of individual geologic formations to assess their exposure to impacts. For example, because the higher PFYC classes are typically represented by individual geologic formations or stratigraphic layers within a formation, it would be misleading to classify a geologic rock unit at the 1:750,000 scale as PFYC Class 5. In addition, some rock units may predominantly belong to one PFYC class, while an individual formation or stratigraphic layer within that unit may be unusually fossil rich.

Because the geologic rock units at the 1:750,000 scale are so generalized, the PFYC classes are estimates and generalized in the same manner as shown in BLM IM 2009-011, Attachment 2, Paleontological Resources Assessment Flowchart. PFYC classes were grouped into three categories based on the level of management concern and the types of assessment and mitigation actions that could be required:

- Low/Very Low: Consists of PFYC Classes 1 and 2. Management concern is low, and assessment and mitigation is required only in rare circumstances. Even in those cases, the estimated PFYC must be confirmed at a local level, and it must be demonstrated that no known paleontological localities exist within the paleontological Area of Potential Effect (e.g., record search, literature review).

- Moderate/Unknown: Consists of PFYC Class 3. Management concern is either moderate or cannot be determined from existing data. A written assessment would be required; and, depending upon the potential for impacts, a paleontological field survey and report would be needed. Further action, including project redesign and or a monitoring and mitigation plan, may be required depending on the results of the written assessment and field survey. Areas of unknown potential may be reassigned to a different PFYC class after further investigation.
- High/Very High: Consists of PFYC Classes 4 and 5. Management concern is high to very high. The probability of impacting significant paleontological resources is moderate to high, depending on the proposed action (i.e., extent and depth of disturbance). A field survey by a qualified paleontologist is probably needed to assess local conditions, and special management actions may be required.

The assignment of Quaternary units to PFYC classes was conservative, in recognition that numerous fossil discoveries have been made in areas where previous information and mapping suggested low paleontological potential. For example, although the PFYC system suggests assigning rock units younger than 10,000 years, as well as sand dune deposits, to PFYC Class 2, they were assigned Class 3 because these rock units can be thin and overlie older, more sensitive rock units. The modified PFYC used in the DRECP EIS includes some ranges because their rock units, although predominantly belonging to one class, could locally belong to a higher class. In assigning geologic rock units to ranges of sensitivity (Low/Very Low, Moderate/Unknown, or High/Very High), the higher class was used.

3.14.2 Overview of Paleontological Resources Within the DRECP Area

Summary of Paleontological Resources Known in the WEMO Planning Area

An area roughly bounded by the Sierra Nevada Front, Highway 395, and Garlock Road has been subject to paleontological research for several decades and has been found to contain important paleontological resources. The Dove Spring Wash area contains a fossil assemblage known as the Dove Spring Lignites Local Fauna (Whistler 1990). Containing mollusks and a diversity of small vertebrates, “the Dove Spring Lignites Local Fauna is the most diverse, Late Pleistocene vertebrate assemblage recovered from fluvial deposits in the Mojave Desert outside of the Mojave River basin” (Whistler 1990).

East of Dove Spring Wash, but within the same area, the El Paso Mountains have been subject to paleontological study for over 50 years. The Raymond Alf Museum of Claremont, California is currently actively engaged in paleontological research of localities containing Paleocene (–60 million years old) mammals. The El Paso Mountains are the only locality on the west coast of the United States known to contain mammal fossils of this age; the closest known locations are in Wyoming. Consequently, these fossil localities are quite important (Lofgren n.d.).

A number of locations around China Lake that contain fossil remains of Rancholabrean megafauna have been recorded and studied. Although these sites are on China Lake Naval Air Weapons Station and not BLM, similar situations may apply around the edges of other Pleistocene dry lakebeds, such as Searles Lake within the planning area.

Tecopa Lake Beds consist of lacustrine siltstone and mudstone interbedded with layers of tufa and ash that range from 100 feet to 200 feet thick. Multiple vertebrate fossils have been

recovered from exposures east of Tecopa Hot Springs, though numerous finds occur west and north. This area is one of only two places that provide good examples of small Irvingtonian-age mammals. Additionally, it has yielded remains of a unique camel-like animal unknown elsewhere (Woodburne 1978:37).

The Avawatz Formation occurs in the rugged canyon land exposures on the south and southwestern flank of Avawatz Peak as well as along slivers of the Garlock and Death Valley Fault Zones. These deposits consist of coarse-grained conglomerate overlain by interbedded claystone, sandstone, and coarse- to fine-grained conglomerate. Coarse-grained breccia overlies the claystone section and is capped by arenaceous clastic sediments and some tuff with coarse-grained sandstone at the top. Faunal remains occur in the upper Clarendonian age unit (Woodburne 1978:49).

Pleistocene-age fossil bones have been reported in the lake sediments of Salt Spring Hills Playa, but not collected (Woodburne 1978:51).

Superior Dry Lake West consists of playa lakebeds near the southwest shore of Superior Dry Lake. Fossil bone and tooth fragments have been reported and are thought to be Rancholabrean (Woodburne 1978:53).

Jack Rabbit Spring is at the north end of Coyote Dry Lake. Playa lake deposits reportedly contain fossil camel bones dating to possibly the Rancholabrean (Woodburne 1978:54).

Cronese is comprised of sediments from the Barstow Formation. The relatively sparse fossil mammals are important because they probably represent the youngest Barstovian-age sample in the Mojave Desert. They show a relatively evolved *Merychippus* and are associated with tuffs dated at 12.3 million years (Woodburne 1978:56).

Alvord Mountain has a relatively thick sequence of tuffaceous sediment interbedded with tuffs and basalt flows, which is exposed in a valley drained by Spanish Canyon and its tributaries on the east flank of Alvord Mountain. The main fossil bearing unit is the Barstow Formation, followed by the Clews Conglomerate and Spanish Canyon Formations of Hemingfordian age. Most of the fossils occur within a few feet in the middle of the Barstow unit. The stratigraphic succession of faunal remains corroborates the biostratigraphic and evolutionary sequence seen in the Barstow Formation in the Mud Hills (Woodburne 1978:57).

A series of sites occur in alluvial gravel, sandstone, and siltstone along bluffs overlooking the Mojave River. The bluffs occur from the Daggett-Yermo area east to Camp Cady. These deposits are Rancholabrean in age (Woodburne 1978:59).

Manix-Afton Canyon. The Manix Lake Beds consist of a succession of fine-grained lacustrine sediments interbedded with tufa and tuffs. They are unconformably overlain by alluvium and are cut by the Mojave River and its tributaries that flow into Afton Canyon. During the Pleistocene, Manix Lake extended westward into the Mojave Valley and north into present day Coyote Lake. This is one of the few well-studied Rancholabrean-age fossil assemblages, though much of the information is possibly unpublished as yet (60). The Manix beds near Barstow, CA have yielded an assortment of fossil mammal remains, most of which are limb bone fragments. This assemblage may be around 2 million years old, but evidence for exact dating is poor at present (Savage, Downs, and Poe 1954:53). Recovered specimens include true horses (*Equus*), jackrabbits (*Lepus*), camelids, true deer (*Odocoileus*), pronghorns (*Antilocapra*), and tapirus (*Tapirus*) (Savage, Downs, and Poe 1954:56).

The Cady Mountains comprise a relatively broad, sprawling range south of Afton Canyon. Like many Mojave ranges, a core of pre-Tertiary plutonic basement rock is overlain by a succession of mostly volcanic, then volcanic and sedimentary rocks that have been folded and faulted and are roughly Miocene age. These are overlain by less extensive coarse-grained approximately Pliocene deposits and Quaternary fan deposits, which are all finally cut by present streams whose valleys are filled with alluvium. Fossils in the Cady Mountains are derived from Miocene interbedded fluvial clastic and tuffaceous sediments. The deposits are designated as the Hector Formation, which is composed of coarse- to fine-grained alluvial deposits interbedded with tuffs and a basalt flow. Total thickness is approximately 1,500 feet.

In the southern area, fossils of late Arikareean and early Hemingfordian fauna are separated by a tuff dated at 21 million years. This is one of the best calibrations of the boundary between currently known mammal ages. To the north near Afton Canyon, fossils are mainly of Hemingfordian age. This area is one of the most important regions in the Mojave Desert for biostratigraphy and geologic history. It provides one of the best single reference areas for the late Arikareean to late Hemingfordian interval in California and would form a secure base with which to evaluate the geological history of this part of the Mojave Desert (Woodburne 1978:62-63).

Southwest of Crucero, Rancholabrean age mammal remains were observed in conglomerates and sandstones (Woodburne 1978:65).

Daggett Ridge, about 4 miles southwest of Daggett, consists of a few hundred feet of fine-grained sandstone and siltstone and a thin, lower bed of gray sandstone that produces bone chips. This Miocene deposit contains small camels, a cervoid, and a horse. These remains date to about the middle of the Hemingfordian and could contribute significantly to an understanding of the little known faunas of this age in the Mojave (Woodburne 1978:66).

The Calico Mountain range east of Barstow contains the Jackhammer, Pickhandle, and Barstow Formations (Woodburne 1978:67). Fossil vertebrates have been found in the Calico Mountains in the Barstow Formation, which is approximately 3,000 feet thick. The primary specimen is of the grazing-browsing horse (*Merychippus intermontanus*). Insect-bearing nodules also occur. The Calico Range has definite potential to yield fossils, but much of it is located on private land with limited access (Woodburne 1978:67-68).

The Mud Hills, about 8 miles north of Barstow, contains outcrops of Jackhammer, Pickhandle, and Barstow Formations. The Barstow Formation, named for the Barstow fossil beds, is a non-marine, late Miocene age geologic unit derived from stream and lake deposited sediments in a basin subject to periodic volcanic ash fall and dust (Woodburne 1978:69; Savage, Downs, and Poe 1954:48). Deposition occurred about 15 million years ago. Many fossils occur in strata of mud mixed with volcanic ash. These strata often erode out as green and dark brown layers.

Fresh-water shells are abundant, but sabel palm is the only identified plant. Various institutions in the United States have collected a large number of mammal bones. Grazing- browsing horses (*Merychippus*) and camelids appear to be the most abundant. Many other mammal species have been described, including browsing horses (*Hypohippus*), dog-bears (*Hemicyon*), pronghorns, peccaries, chipmunks, field mice, rabbits, dogs, sabre cats, true cats, mastodons, large oreodonts (*Brachycrus*), and shrews. Two hawks, several ducks, a gull, a flamingo-like bird (*Megapaloelodus*), and a quail-like bird (*Cyrtonyx*) have been identified. The characteristics of the flora and fauna (called "Barstovian" fauna) suggest that grassland was available as well as

vegetation similar to that of northern Mexico (Woodburn 1978:71; Savage, Downs, and Poe 1954:48). The Black Mountain-Gravel Hills region is a small-scale badlands north of Harper Lake. Most of the Tertiary section consists of the Barstow Formation, which is the most extensive unit in the Gravel Hills. Barstovian faunal remains of Merychippine horses and Merycodonts have been recovered from tuffaceous sandstone near Black Canyon (Woodburne 1978:74).

A number of sites occur in relatively coarse-grained fluvial sandstone and gravel beds near Victorville and extend north along the Mojave River to Barstow. These deposits relate to the uplift of the San Gabriel Mountains to the south and the history of the Mojave River. The best fossil specimens have been obtained from the gravel pits by Victorville, but others are known from exposures to the north. *Equus* is the most common species, among other Rancholabrean fauna (Woodburne 1978:84).

The Cushenbury beds are often referred to as the Old Woman Sandstone of Shreve and comprise a succession 200 feet to 1,000 feet of massive reddish-buff and red-brown conglomeratic arkose with a matrix of uncemented, poorly sorted, coarse-grained, angular fragments of quartz, feldspar, and hornblende that support subangular to subrounded pebbles of andesite, gneiss, quartzite, and other minor types. These lithologies are the oldest Tertiary deposit to be derived from the San Bernardino Mountains, on the north side, and reflect uplift of the ranges. A small, but important, and growing collection of small mammal fossils has been collected from the Cushenbury beds. They appear to be Blancan or late Blancan age and suggest that the San Bernardino Mountains began shedding debris to the north about 2 million years ago. These fossils provide the only evidence for the age of that uplift (Woodburne 1978:85).

At Twenty-Nine Palms, there is an unnamed succession of mainly northeast-dipping fluvial and lacustrine sediments interbedded with tuff a few miles east of the main north road from Twenty-Nine Palms. The exposures are relatively isolated patches of older sediments surrounded by younger alluvium. A small collection of Rancholabrean fauna, mostly large mammals, has been collected. These include *Equus*, *Odocoileus*, *Tanupolama*, *Hemiauchenia*, *Bison*, *Ovis*, *Breameryx gopherus*, *Nothrotheriops taxidea*, *Camelops* (Woodburne 1978:87).

Overview of Generalized PFYC Results for the WEMO Planning Area

The results of the PFYC mapping used for the DRECP EIS should be viewed as both a generalization and an estimate given the “bird’s eye view” at which the classification was developed, even if it is a reasonably accurate portrayal of the relative differences among rock units and their significant yield potentials. Figure 3.14-1 shows the distribution of the three generalized categories of paleontological potential within the WEMO Planning Area.

The WEMO Planning Area is predominantly assigned an estimated/generalized PFYC class of Moderate/Unknown, in large part because geologic unit “Q,” which is the most extensive geologic unit, was classified as PFYC 3. Unit “Q”—which refers to Pleistocene/Holocene marine and nonmarine (continental) sedimentary rocks—encompasses a wide range of Quaternary units that are predominantly Holocene. In reality, most areas within Unit “Q” could likely be assigned a PFYC Class 2 if more detailed mapping confirms the area is underlain by nonsensitive units. However, because Unit “Q” could locally include Pleistocene-age or otherwise sensitive units (e.g., where such units occur in slivers or patches too small to delineate), it was assigned to Class 3 rather than Class 2.

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CHAPTER FOUR

ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This chapter relates the direct, indirect, residual, and cumulative environmental consequences of the WMRNP Travel Management and Livestock Grazing Program alternatives on resources, land uses, and special designations in the West Mojave Planning Area.

OHV transportation and livestock grazing potentially have both beneficial and adverse effects on public lands. Designation of transportation routes for OHV use can have a beneficial impact on the following resources: recreation, grazing, and other uses of public lands, and travel and transportation management. In the case of these resource areas, a larger network can have a beneficial effect by expanding means of access, recreation opportunities, and access to commercial uses of the public lands. In contrast, reducing the size of the network can adversely affect use of these resource areas by reducing access, and can impact these and other resources by changing use patterns. Also, placement of specific restrictions on uses of the routes can have an adverse effect by reducing the ability of users to use a route. The primary beneficial effects of grazing are to the permittees and the areas where permitted grazing occurs. Grazing is a small element of the socioeconomics and commercial uses of the region. These changes can improve social and economic conditions and provide benefits to an array of populations.

OHV transportation and livestock grazing can have adverse impacts on the following resources: air quality, soils, surface water quality, biological resources, cultural resources, paleontological resources, visual resources, special designations, noise, and an array of populations. In the case of these resources, a larger network presents a greater potential for having an adverse effect. A smaller network can also have adverse impacts if use patterns are substantially changed as a result. Considering the specific locations of sensitive resources when designating the network and identifying range improvements such as corrals and fencing can substantially avoid or reduce some adverse impacts. Some adverse effects would only occur if the OHV use or intensive grazing activities were to occur in close proximity to the resource. However, these activities can also contribute to cumulative impacts to these resources and to global greenhouse gas emissions. The specific restrictions placed on uses of the routes and locations of concentrated grazing activities can generally be designed to minimize the potential for adverse impacts to occur. However, many impacts are as much the result of past and current disturbances as uses, and some impacts from the disturbances cannot be mitigated in the reasonably foreseeable future (RFF), given the nature of particular resources and the landscape.

4.1.1 Decisions Being Analyzed

As discussed in Section 2.1, the decisions to be made as part of the WMRNP for transportation management and livestock grazing include LUP-level decisions and implementation-level decisions. The LUP-level decisions include modification of the goals and objectives to manage the transportation and travel management program and the livestock grazing program, and modification of specific CDCA Plan parameters for the WEMO Planning Area to implement the network, as summarized in Table 2.1-1. The goals and objectives for transportation and travel management, in turn, will affect the size and configuration of the resulting transportation network. The livestock grazing LUP-level decisions have one major outcome related to

livestock grazing, to further provide for species conservation and desert tortoise recovery consistent with the 2006 West Mojave Plan.

Implementation decisions being considered include designation of routes within the transportation network to meet the established goals and objectives (again, affecting the size of the network), and specific route-use restrictions as needed to meet the CDCA Plan, 2006 WEMO Plan, and the 2016 Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA), and newly established objectives.

Overall, the decisions have two major outcomes related to the transportation network:

- Which routes are designated for which types of transportation uses; and
- The specific restrictions placed on uses of those routes.

By definition, those features which are not designated for OHV or other types of transportation uses are classified as transportation linear disturbances.

4.1.2 Analysis Methodology

NEPA Analysis

This Chapter analyzes the environmental consequences of the plan amendment and implementation decisions being considered in WMRNP for transportation management and livestock grazing. Sections 4.2 through 4.13 provide a resource-by-resource analysis of the environmental impacts associated with the alternatives, using the same subsection numbering as used for the description of the affected environment for each resource in Chapter 3. For each resource, each of these sections provides a brief summary of the affected environment for the resource, a description of the impacts which are common to all alternatives, and those associated with the No Action Alternative and Alternatives 2 through 5.

The impact analysis includes the adverse and beneficial impacts that are generally associated with OHV operation and livestock grazing on public lands. This section discusses the effects of allowing use of OHV Open and OHV Limited routes, non-motorized, and non-mechanized routes on public lands; the effects of restricting access on those routes; the effects on use from eliminating access by designating routes as transportation linear disturbances; and the effects on use from placing limitations on access, in the form of minimization and mitigation measures. In addition, it includes the effects associated with the plan amendment decisions and implementation strategies related to transportation management and livestock grazing proposed under each alternative. Each impact analysis includes the following:

- A discussion of direct and indirect impacts resulting from the alternative;
- A discussion of whether the impacts are beneficial or adverse;
- Quantification, if applicable, of the impacts that would occur under the alternative;
- A discussion of specific locations of concern for that resource; and
- A description of measures that would avoid or reduce identified adverse impacts.

In general, quantitative analyses related to travel management are based on the total mileage of all routes (both pre- and post-WEMO 2006) designated as motorized, non-motorized, non-mechanized, and transportation linear disturbance within a geographic area that supports a

resource. The direct acreage associated with the route networks is based on an assumption that the routes are approximately 12 feet in width. This width was used to calculate the effects of the designation of routes as transportation linear disturbances, such as the amount of particulate matter emissions that may be avoided through re-vegetation of routes designated as transportation linear disturbances.

In addition to route mileage, an acreage comparison associated with the allowable stopping, parking, and camping distance was presented for some resources. This calculation was conducted to quantify the areas that may potentially be affected by stopping, parking, and camping adjacent to OHV Open and OHV Limited routes. This calculation is based on a width of 88 feet within Areas of Critical Environmental Concern established for protection of the desert tortoise (DT ACECs) (the 50 foot from centerline limit, minus the 12 foot width of the route itself), and either 88, 188, or 588 feet outside of DT ACECs, depending on the allowable width (50, 100, or 300 feet) in each alternative. In addition, the calculation incorporated ACEC-specific stopping, parking, and camping distances, where those are specified. The percentage of actual use in these stopping, parking, and camping areas is expected to be very low, perhaps 1 percent of the potentially affected area.

For cultural resources, the quantitative analysis of impacts is based on the number of known cultural resources in varying proximity to each route designation type or concentrated area of grazing use. For transportation management, this is organized and analyzed per travel management area, and further refined by the boundaries of DT ACECs. The quantitative analysis for cultural resources with respect to livestock grazing is based on the number of known cultural resources located within each grazing allotment for which a modification, through a CDCA Plan amendment, is being considered.

For recreation and travel management, the analysis is based on the mileage of routes available to recreational and other authorized users, and the overall connectivity of the transportation network.

For livestock grazing, the quantitative analysis is based on the Animal Unit Months (AUMs) that are authorized or reallocated and the acreages each grazing allotment would maintain, modify or lose based on the proposal contained under each alternative.

The geographic level of analysis varies by resource, and was developed in an iterative manner. For all resources, the quantities of miles, acres, or numbers of resources was preliminarily done on a WEMO-wide basis, to determine if there were substantial differences among the network alternatives. Once this analysis was complete, the results were evaluated by the BLM resource specialists. If substantial differences between the alternatives were identified, or were otherwise known to the resource specialists based on public comments or their familiarity with specific areas, more geographically-detailed analyses were developed. As a result, the cultural resource analysis was re-developed at a Travel Management Area (TMA) level, in order to identify potential location-specific impacts. Similarly, biological resources were evaluated at the level of the applicable Area of Critical Environmental Concern (ACEC), Desert Tortoise ACEC (DT ACEC), California Desert National Conservation Land (CDNCL), national monument, Critical Habitat Unit (CHU), or other geographic unit used as a management tool by BLM. Livestock grazing was evaluated by grazing allotments within the planning area and the geographic overlap of a resource type or designated area boundary such as ACECs, DT ACECs, CDNCL, and CHUs, at the grazing allotment level.

The Council on Environmental Quality (CEQ) established implementation regulations for NEPA requiring that a Federal agency identify relevant information that may be incomplete or unavailable for an evaluation of reasonably foreseeable significant adverse effects in an EIS (40 CFR 1502.22). If the information is essential to a reasoned choice among alternatives, it must be included or addressed in an EIS. Knowledge and information is, and will always be, incomplete, particularly with infinitely complex ecosystems considered at various scales.

The best available information pertinent to the decisions to be made was used in developing the WMRNP SEIS. Considerable effort was taken over a period of more than two years to acquire resource data for the Draft SEIS, which was published in March, 2015, including acquisition from available geographically-based datasets, contracting data acquisition and analysis for specific resources from regulatory agencies, and conducting field investigations. These data were supplemented by additional resources identified through the public comment process, or by BLM resource staff, following publication of the Draft SEIS. During this period, BLM resource staff in California were also involved in the development of the 2016 DRECP LUPA, which overlaps the WEMO Planning Area, and involves analysis of impacts to the same resources. As a result, data sources used to support the 2016 DRECP LUPA became integrated into the WMRNP. In January, 2016, BLM made the decision to delay the WMRNP until the 2016 DRECP LUPA could be finalized, allowing further integration of the 2016 DRECP LUPA data and decisions into the WMRNP process. In the absence of direct quantitative data from these sources, impacts are described based on indirect quantitative data, qualitative data, and/or the professional judgment of the interdisciplinary team of technical specialists using best available information, and no incomplete or unavailable information was deemed essential to a reasoned choice among the alternatives analyzed in this chapter.

Section 4.15 presents an analysis of the cumulative impacts of the alternatives.

4.1.3 Assumptions for Analysis

The general assumptions for analysis made in the 2006 WEMO Plan also apply to the WMRNP transportation management and livestock grazing program amendment analysis, as shown in Table 4.1-1.

A general assumption used in the analysis in this Chapter is that the total miles traveled by OHVs within the WEMO Planning Area is unrelated to the overall size of the route network. The total miles traveled in the planning area appears to be primarily the result of population changes, economic activity, public land uses which require access, and demand for recreational opportunities. Although the length of OHV Open and OHV Limited routes varies among the alternatives analyzed, the total number of miles traveled on the network per year is not expected to vary as a result of decisions made in the WMRNP.

The configuration and overall size of the route network will affect the extent to which OHV travel is more dispersed throughout the region or is more concentrated in specific areas, and frequency of use in specific areas can be a factor in impacts on some resources. Any variation in resource impacts based on an increase in the total miles available for use in the WEMO Planning Area is anticipated to be offset by the intensity of use on a smaller network. All alternative networks are being developed from linear disturbances that already occur on-the-ground. Conversely, the specific locations of OHV use and increased miles within the network would

result in variations in effects to resources, depending on specific locations of OHV Open and OHV Limited routes and routes designated as transportation linear disturbances.

Table 4.1-1. General Assumptions for Analysis

Category	Assumptions
Impact Analysis	<ul style="list-style-type: none"> • The discussion of impacts is based on the best reasonably available data. Knowledge of the planning area and professional judgment, based on observation and analysis of conditions and responses in similar areas, were used to infer environmental impacts where data is limited. • Acreage figures and other numbers used in this analysis are approximate projections for comparison and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations. • Short-term impacts would occur over a 5-year period following implementation, while long-term impacts would occur over a 5- to 30-year period.
Plan Implementation	<ul style="list-style-type: none"> • Implemented actions would comply with all valid existing rights, regulations, and agency and jurisdictional policies. • Implementation of actions on BLM-administered public lands are anticipated to begin within thirty (30) days of signature of the BLM Record of Decision by the BLM California State Director. • If an inconsistency is found between this Plan Amendment and the 2016 DRECP LUPA, the 2016 DRECP LUPA implementation strategy will be followed. • Phasing of implementation would be based on receipt of additional funding and resources for the transportation management and livestock grazing program decisions. • As other agencies and jurisdictions acquire lands within the planning area (e.g., OHV Division, Kern County Acquisition, and CDFW mitigation lands) the adopted transportation strategies in this Plan Amendment may need to be adjusted accordingly. • Cultural resource inventory, identification and evaluation will occur in accordance with the stipulations of the signed Programmatic Agreement pursuant to federal regulation.
Long-term Regional Trends	<ul style="list-style-type: none"> • High rates of urban growth would continue, especially in the southern and southwestern portions of the planning area. • The level of recreation use would continue to increase in proportion to regional population growth, and will be higher near the centers of population growth. • The levels of livestock use would continue to decrease in proportion to species conservation and desert tortoise recovery needs and other developments within the desert and on the public lands, such as alternative energy development. • The record of cultural resources present within in the planning area will increase in quantity and quality. • The data available to evaluate the level of impacts resulting from WEMO Plan implementation will increase and more natural resource impacts and cultural resource impacts will be avoided, minimized, or mitigated following the programs of signage, mapping, outreach, monitoring, and adoption of the stipulations of the Programmatic Agreement.

These general assumptions are supported by observations made by BLM staff as well as visitor use numbers. For example in the Coolgardie subregion a closure of several acres was implemented to protect Lane Mountain milkvetch habitat. Staff has observed that this closure shifted the public land users from the closed area to neighboring areas that were not fenced off; however, the closure itself did not increase overall visitation or direct users to other less sensitive areas.

The decision eliminating the language that limits the route network to existing routes is necessary to bring the WEMO Plan into conformance with BLM regulations and guidance which require BLM to consider, and potentially authorize new routes (routes where no linear pathway currently exists) when needed to provide access to authorized land uses, or to address other land management needs. None of the alternatives change BLM's legal responsibility to provide access for other authorized land uses such as grazing, energy development, mining, or communications sites, or to develop roads as needed for emergency response and rehabilitation, to avoid safety hazards, or for other critical land management needs.

The authorization of new routes in areas where routes do not currently exist could potentially have adverse impacts to resources within the path of, or in close proximity to those routes. Because the locations of new routes are currently unknown, the nature and magnitude of the potential impacts cannot be predicted. However, the impacts of each specific, newly proposed route would be evaluated as part of the BLM's consideration of the application for land use authorization, or, for agency routes, within the BLM's policy framework for its specific management responsibilities.

As part of this evaluation, BLM would consider the potential impacts of designating the new route as required by 43 CFR 8342.1, evaluate potential alternatives to provide the necessary OHV access and use, and identify measures to address any identified impacts to sensitive resources. In each case, the duration of the designation of the new route would be the same as the authorized land use it is intended to support. Generally, once the term of the authorized land use expires or a route is no longer needed for the purpose for which it was constructed, the route would be designated, and if consistent with 43 CFR 8342.1, would generally be designated as a transportation linear disturbance; the terms and conditions of the authorized land use may require the lessee, permittee, or ROW holder to rehabilitate the route. BLM may also determine at a later date, consistent with 43 CFR 8342.1 that the route provides necessary OHV access and use for some other reason and could designate the route accordingly, releasing the authorized land user from their requirement to rehabilitate the route.

Although the overall size of the network would not affect regional-scale resources, specific locations of OHV Open and OHV Limited routes or routes designated as transportation linear disturbances, and the authorized uses and minimization and mitigation measures applied to those routes, could affect localized resources. For each individual route under each alternative, the BLM made a route designation determination in consideration of a geographic comparison of the route with respect to potentially impacted resources as required under 43 CFR 8342.1.

Once each route was preliminarily determined appropriate for designation as an open or limited route under each alternative based on the designation criteria and its proximity to identified resources, the potential overall impacts to each resource were quantified. These quantitative evaluations serve as the basis for the analysis throughout Chapter 4. In general, the magnitude of the adverse impacts to a location-specific resource is proportional to the mileage of OHV Open and OHV Limited routes in that location, the acreage of route-related disturbance, and/or number of potentially affected resources in close proximity to OHV Open and OHV Limited routes. As a result, the analysis in Chapter 4 is based on collective quantification of these mileages, acreages, and numbers of potentially impacted resources to provide an analysis of each network's impacts. Analysis of acreage figures takes into consideration network-wide minimization measures (i.e. OHV stopping, parking, and camping parameters) that assume an area of potential increased disturbance beyond the designated route prism.

The converse of this is also true. Each alternative includes some amount of potential designation of routes as transportation linear disturbances (routes identified for natural or active rehabilitation). This designation leads to more gradual beneficial impacts to some resources due to long-term route rehabilitation and re-vegetation restoration time requirements, which could continue to increase beyond the life of the 20-year planning horizon. Among the alternatives, the more routes that are designated as transportation linear disturbances the greater the beneficial impact on certain resources, including air quality from lower levels of wind erosion of disturbed areas, soil resources which would no longer be compacted, vegetation, and wildlife resources. For these resources, the magnitude of the beneficial impact for each alternative would be roughly proportional to the number of route miles designated, or in the case of livestock grazing, the number of AUMs that are reallocated under that alternative; however, most of these beneficial impacts would be realized beyond the life of the Plan due to the long timeframes required for route rehabilitation and re-vegetation.

Some issues did not factor into the minimization measures utilized to designate routes for each alternative but were considered in the analysis, and measures may be included to mitigate impacts. Frequency of use is a qualitative factor that may impact certain resources, but such data are not readily available on a network-wide basis, and it could not be directly considered in all route-specific designations. Assumptions about how much designation of specific routes as OHV Open, OHV Limited, or as transportation linear disturbances will change use patterns are highly speculative on either a regional or a local basis, without substantial knowledge of the specific users of the routes. Frequency of use was considered indirectly in several ways. For instance, one factor in the analyses was knowledge of areas in which impacts had already occurred as a result of frequent use, such as soil erosion areas or highly disturbed areas. Another factor was the results of monitoring programs, such as air quality monitoring near OHV Open Areas, which indirectly measure impacts associated with frequency of use. Finally, the consideration of route designation based on co-location of routes and resources was generally conservative, resulting in designation of routes as transportation linear disturbances or implementation of mitigation measures based on the potential for adverse impacts. This process assumes that route use is frequent enough to cause adverse impacts, even if route-specific data are not available to demonstrate the impacts. Therefore, BLM determined that available methods of indirectly considering and addressing frequency of use were adequate to identify and mitigate any reasonably foreseeable impacts to resources from OHV use. Additional measures may be subsequently identified in the travel management plans or occur in accordance with the stipulations of the signed Programmatic Agreement (PA) for cultural resources and Endangered/Threatened Species Consultation with USFWS.

4.2 Air Quality

4.2.1 Air Emissions

4.2.1.1 Methodology

Chapter 2 discusses objectives for resource protection and OHV access used in developing the transportation network alternatives. Specific objectives are to inform decisions about linear features for inclusion in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network and for designation as transportation linear disturbances under each alternative. The analysis uses the proximity of OHV Open and OHV Limited routes to sensitive

receptors (schools, hospitals, and residential areas) as one indicator to determine future impacts of routes in the network for each alternative. In addition, the WMRNP alternatives considered the distances from open routes authorized for stopping and parking as an indicator for minimizing potential disturbance in previously undisturbed areas, thus reducing the potential for indirect emissions through avoiding new surfaces subject to increased wind erosion. The analysis also models emissions of criteria pollutants to further clarify likely future impacts. The air quality analysis here compares the WMRNP alternatives using these three methods.

The 2005 WEMO FEIS analyzed the air emission impacts associated with the route network evaluated in that FEIS, and concluded that OHV route designations and fewer OHV competitive events would result in a decrease in PM₁₀ air emissions in both the short- and long-term. Reductions would come about from soil stabilization on routes designated as transportation linear disturbances with reestablishment of native vegetation and biological soil crusts (BSCs) and elimination of various high-speed events in DT ACECs and other areas. The analysis concluded that the proposed action would not cause or contribute to a new violation, or increase the frequency or severity of an existing violation, of any National Ambient Air Quality Standards (NAAQS), and that no further conformity analysis was required.

In the Summary Judgment order, the Court held that BLM only analyzed the impact of air emissions on open routes, but did not analyze the impacts of OHV emissions that would occur within OHV Open Areas. The Court required that the analysis be extended to include emissions from OHV Open Areas. In the Remedy order, the Court vacated the finding of consistency with the Clean Air Act. In addition, the order (pg. 14) required the BLM to implement additional information gathering and monitoring regarding air quality in and around the OHV Open Areas. Finally, the Court made a general finding, for all resources, that the range of route network alternatives evaluated was inadequate. No other deficiencies were identified in the air quality analysis in the 2005 WEMO FEIS.

For this SEIS for the WMRNP, BLM completed the following actions in response to the Remedy order:

- Contracted with the MDAQMD to compile and evaluate the monitoring results from the ambient air monitoring stations in the WEMO Planning Area over the period 1986 through 2012. The results of this study were reported to BLM in the West Mojave Plan Air Quality Evaluation Report dated April, 2013 (MDAQMD 2013, included in Appendix E-1), and are discussed in Chapter 3.2.
- The route designation process for each alternative included limits in proximity and risk evaluations of each route with respect to sensitive receptors and residences that could be particularly sensitive to air emissions of criteria pollutants.
- Conducted route evaluation and quantified the miles of OHV Open and OHV Limited routes that could potentially impact sensitive receptors and residents, across five alternative route networks, ranging from 4,934 to 10,291 miles in size.
- Contracted with Aspen Environmental Group to produce a baseline emissions budget from OHV travel on BLM WEMO public lands for both the OHV travel network and the OHV Open Riding Areas; and to calculate emissions of criterial pollutants to determine whether individual criteria pollutants under each alternative would likely exceed de minimis thresholds permitted for federal actions under the Clean Air Act in areas of

nonattainment or maintenance status for NAAQS. The report from Aspen Experimental Group is included in Appendix E-2.

The present analysis now covers, in addition, indicators for air quality impacts considering the distribution of OHV Open and OHV Limited routes and routes designated as transportation linear disturbances in areas designated by Air Resources Board and US EPA as being in nonattainment or maintenance status for NAAQS for ozone and PM₁₀, areas where conformity to de minimis standards to limit increases to emissions of these criteria pollutants is critical.

4.2.1.2 Impacts Common to All Alternatives

The analysis of impacts on air quality focuses on the impacts of OHV traffic. Gases and particulate matter emitted into the air from the direct, indirect, and residual effects of OHV use comprise a mobile source of air pollutant emissions associated with the BLM transportation network. These emissions can cause air quality impacts to people and the environment. Direct emissions come from two principal sources: particulate matter less than or equal to 10 microns in size (PM₁₀) stemming from fugitive dust aerosolizing into the atmosphere as vehicles travel over soils of unpaved routes; and tailpipe exhaust from combustion engines in OHVs containing the precursor compounds to pollutant ozone emissions. The MDAQMD report (2013) stated that OHV exhaust is a negligible contributor to local emissions. OHV use can lead indirectly to increased PM₁₀ emissions when vehicle use creates destabilized surfaces that generate fugitive dust and lead to soil erosion as material moves downslope or downstream. Residual emissions stem from wind erosion volatilizing fugitive dust from small soil particles subsequent to vehicle travel over disturbed desert soils.

Two assumptions for describing impacts to air quality are part of this analysis. First, the amount of emissions from OHV Open Riding Areas in all other WMRNP alternatives is assumed to be the same as in the No Action Alternative because the SEIS does not include management actions that change management and use of any OHV Open Riding Area in the WEMO Planning Area. Secondly, the BLM does not anticipate that the total miles of OHV travel over the OHV route network changes as the result of actions under each alternative. However, the distribution of miles of OHV routes in each alternative might differ locally from one alternative to another within the WEMO Planning Area. As a corollary, if routes in a WEMO subarea are designated as transportation linear disturbances, the number of OHV users, the number of OHVs, and the amount of miles traveled are shifted to other open WEMO routes. The distribution of routes designated as transportation linear disturbances and amounts of acres of route surfaces stabilized or restored may also differ among alternatives. Areas with more miles of routes designated as transportation linear disturbances will over time be producing fewer vehicle and dust emissions. For all SEIS alternatives, designation of routes as transportation linear disturbances is substantially greater than route re-openings. Rehabilitation of disturbed areas after designation of routes as transportation linear disturbances would reduce direct, indirect, and residual emissions and therefore benefit air quality.

Increasing the proportion of WEMO OHV Open route network miles within nonattainment or maintenance areas for federal ozone and PM₁₀ standards, with a corresponding decrease in other areas, would increase OHV use and emissions in these same areas, thus potentially worsening their air quality. On the other hand, reductions in route mileages and thus OHV use in a nonattainment or maintenance area would lead to a beneficial impact on air quality for the area.

Disturbance surfaces created by reopening formerly closed OHV routes in nonattainment and maintenance areas would also result in increased residual fugitive dust emissions.

The designation of the route network would affect regional PM₁₀ emissions associated with wind erosion. In general, the total amount of PM₁₀ emissions originating from wind erosion of soil in an area is expected to be roughly proportional to the total amount of disturbance, but some soils are more susceptible to wind and water erosion than others. This analysis calculates miles of OHV routes in categories of susceptibility to erosion established by the USDA Natural Resource Conservation Service's Soil Survey Division. Efforts to reduce the overall surface disturbance from OHVs in alternatives would yield benefits slowly and well beyond the horizon of the planning effort.

The WEMO Planning Area includes urban areas that have residences, schools, hospitals, and other facilities that are considered sensitive receptors for air quality impacts stemming from nonattainment of standards for ozone, PM₁₀, and PM_{2.5}. Although the overall direct OHV tailpipe and fugitive dust emissions are expected to be similar regardless of the size of the transportation network, the variation of designated OHV Open and OHV Limited routes and transportation linear disturbances in relation to sensitive receptors among the alternatives would create differences in localized emissions or their impacts on sensitive receptors. Therefore, some alternatives may impact more or fewer sensitive receptors than others.

After implementation of the selected alternative and Record of Decision, the TTM process alone would designate new OHV Open and OHV Limited routes and existing routes as transportation linear disturbances. Changes in both direct and indirect emissions in the future could potentially occur near sensitive receptors or residences and have adverse or beneficial effects on human health. However, the amount of these changes in emissions is expected to be minimal. The mileage of routes that would be added or removed from the network is expected to be small compared to the current inventory. For right-of-way (ROW) grants in the future, the BLM will first evaluate the ROW under the designation criteria, conduct a NEPA environmental review, and consider impacts to of air quality for any proposed ROW. The BLM would consider specific emissions, receptors, and impacts during the process of authorization and would develop mitigation measures to avoid or reduce adverse impacts to air quality on a specific case-by-case basis.

Emissions in OHV Open Areas

In 2012, the BLM asked the Mojave Desert Air Quality Management District (MDAQMD) to assess air quality and identify the contribution of OHV use to pollutant emissions in the planning area (MDAQMD 2013). Subsequently in 2018, the BLM engaged Aspen Environmental to update and elaborate on criteria pollutant emissions from the entire WEMO Planning Area and from BLM public lands in the WEMO Planning Area. The MDAQMD directly inventoried OHV emissions as mobile sources under the subcategory for off-highway recreational vehicles, which includes only non-street legal vehicles and not the entire set of both street-legal and non-street-legal vehicles that travel off-road on BLM WEMO public lands. Inventory results indicate that OHV exhaust is a negligible contributor to criteria pollutants in the WEMO Planning Area. ROG/VOC emissions from non-street-legal vehicles are significantly higher than from street-legal vehicles because most non-street-legal OHV engines are typically carbureted, rich burn engines without catalytic controls and hence have greater unburned fuel in their exhaust. While

VOC emissions are precursors to ozone formation, and ozone is a regionally problematic pollutant, the VOC emissions from OHV exhaust on BLM lands contributes about 1.4 percent to total WEMO regional emissions.

PM₁₀ emissions from wind erosion of disturbed surfaces are substantial in the planning area. The MDAQMD report concluded that BLM OHV Open Areas are not a significant contributor to either total unpaved road dust or fugitive windblown dust subcategories, and thus are not a significant contributor to regional PM₁₀ emissions. However, recent calculations by Aspen Environmental Group (2018) showed that ARB calculations in the past have overlooked the true amount of OHV travel on all BLM WEMO lands. PM₁₀ emissions from OHV Open Areas amount to 14.1 percent of total PM₁₀ emissions in the WEMO Planning Area even though the area of use in WEMO OHV Open Areas is small relative to the millions of acres of land in the planning areas.

No changes to Open Areas are proposed as part of the WMRNP. The CDCA Plan (1980) designated Open Areas in the planning area, and no new areas or changes to existing areas are proposed in this SEIS. Therefore, the WMRNP alternatives would have no adverse effect on air emissions from OHV Open Areas

Emissions from Livestock Grazing Allotments

Local air districts have federal and state air quality jurisdiction over grazing allotments located in the WEMO Planning Area. All air districts in the WEMO Planning Area have analyzed impacts from existing sources for PM₁₀, and prepared State Implementation Plans (SIPs) for the their districts. The SIPs identify both existing sources of emissions and also control measures to manage existing emissions and reduce new emissions (MDAQMD, 1995). In the MDAQMD SIP, Miscellaneous Area Sources were considered to be a minor category of PM₁₀ emissions in the planning area, generating only 1.3% of total emissions in 1990. Agricultural activity is a small contributor within this miscellaneous category, and livestock grazing operations are a small portion of the agricultural activity contributions to emissions. No measures were identified in the SIP specific to existing livestock grazing activities, and renewals of leases were exempted from conformity determinations consistent with the SIP, due to their nominal (less than 15 tons/year) contributions VOC and PM₁₀ in the Mojave Desert planning area (BLM, 1997). These results are consistent with all other air district SIPs in the WEMO Planning Area.

Livestock grazing and other human activities that disturb the surface soils of deserts can also generate dust and wind driven erosion by removal of herbaceous plant cover and destruction of BSCs. Livestock grazing operations would utilize OHVs in day-to-day operations on BLM OHV Open or OHV Limited routes to facilitate grazing operations, but the amount of emissions produced by one or two vehicles per allotment is minimal and the direct and indirect impacts to air quality in nonattainment or maintenance areas under all alternatives would be within *de minimis* limits.

4.2.1.3 Differences in Impacts Among Plan Amendment Alternatives

Of the Plan Amendment decisions being considered in the WMRNP, two of the decisions (PA I, Modification of Language Limiting Route Network to Existing Routes; and PA II, Designation of TMAs) would amend BLM's procedures for managing travel and transportation management in the planning area, and would not authorize any specific on-the-ground actions. Therefore,

these decisions would not result in direct resource impacts or user conflicts. These decisions would only define the route designation process or framework under which future on-the-ground actions are considered.

In general, the purposes of these decisions are to:

- Resolve inconsistencies between planning language and route designations;
- Clarify the manner in which future route network modifications consider resource impacts and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public;
- Facilitate BLM's ability to enforce route use limitations; and
- Update the Access Area designation maps to recognize that new Wilderness areas are OHV Closed use areas.

These two amendments are expected to have no adverse resource impacts or user conflicts, and may benefit resources and other uses by facilitating adaptive management changes in response to changing on-the-ground conditions. By not adopting these decisions under the No Action Alternative, these potential beneficial effects would not be achieved. In addition, by not adopting these decisions, the CDCA Plan would not be amended to conform to current policy or regulation.

As a result of PA I, the modification of the language limiting the route network to existing routes, under Alternatives 2 through 5, new routes could potentially be identified in locations with no existing routes, and could have adverse impacts to localized resources or other users near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The resource impacts and user conflicts from each new route would be evaluated as part of the BLM's consideration of the application for land use authorization. As part of that evaluation, BLM would consider the potential impacts of the new route as required by 43 CFR 8342.1, potential alternatives to provide the necessary access, and minimization and mitigation measures to address any identified resource impacts or user conflicts.

In the case of routes established to provide access to authorized uses, the duration of the designation of the new route would be the same as the authorized land use it is intended to support. Once the term of the authorized land use expires, the route would generally be considered for designation as transportation linear disturbances, and the terms and conditions of the authorized land use would require the lessee, permittee, or ROW holder to rehabilitate the route. BLM may also determine at a later date that, consistent with 43 CFR 8342.1, the route provides necessary access for some other reason and could designate the route accordingly, releasing the authorized land user from their requirement to rehabilitate the route. In the case of alternative routes established to address impacts to resources, these new routes may become permanent.

With respect to PA II, nine TMAs would be established under Alternatives 4 and 5 rather than eight, as for Alternatives 2 and 3. The boundaries of the nine TMAs included in Alternatives 4 and 5 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain subregions) would be split into two separate TMAs. The Ridgecrest and El Paso subregions would be split from the Rands and Red Mountain subregions,

thus creating two separate TMAs. This decision would be made to facilitate BLM's ability to manage intense recreation use, public interest, and local agency interest in this area near Ridgecrest, and would therefore have no direct effect on any resources or user conflicts. However, this decision would make it easier for BLM to consider resource impacts and user conflicts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on resources and users.

Because this discussion of resource impacts and user conflicts associated with PA I and PA II applies to all resource areas, it will not be repeated for other resources in Sections 4.3 through 4.14 below.

PA III through PA VII would modify on-the-ground authorization of livestock grazing and OHV use, and may therefore have differing resource impacts or user conflicts among alternatives. The current management practices associated with these specific decisions, as well as any changes to OHV use in the locations specified in the decisions under the action alternatives, have the potential to impact air resources in those locations. Specific impacts to air resources from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Under the No Action Alternative, competitive racing events may authorize large numbers of vehicles traveling at a high rate of speed, which has the potential to increase fugitive dust emissions in the local area. While these emissions may be substantial, they will also be localized and short in duration, and are similar to the effects from non-competitive organized events. The overall number of competitive-use SRPs issued is not anticipated to change in the planning area under the No Action Alternative. Constraints on the number and size of events over the last 10 years have been economic conditions influencing people's discretionary income available for recreation, variable weather conditions, and, in more recent years, reduced availability of BLM staff and resources. This means that there is not anticipated to be a substantial increase in the number of OHVs using public land in the area. Designating the "C" routes does not authorize individual SRP events to use these routes, additional analysis occurs as part of the process for authorizing a SRP, and appropriate mitigation measures are included to alleviate impacts to air quality. Therefore, impacts to air quality across the planning area should be minimal from the existing designated routes.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive OHV events managed under a SRP. These routes would be available for use by competitive OHV events during the months of November, December, and January. This decision would reduce local emissions associated with OHV use of those "C" routes during the remainder of the year, and would therefore have a nominal beneficial impact on local air quality during these periods of inactivity. However, the users of those routes are expected to use other routes and areas within the planning area for recreation, and the overall amount of emissions within the planning area is expected to remain the same.

Under Alternative 3, the "C" route network available for competitive OHV events managed under a SRP would be expanded in three distinct areas: the areas to the northeast of the Spangler Hills Open Area; the Summit Range plus the area east of Highway 395; and the urban interface area between the community of Ridgecrest and the Spangler Hills Open Area. Overall, the localized air quality impacts from Alternative 3 would be moderately higher than the impacts

from the No Action Alternative, and substantially higher than under Alternative 2, based on the number of miles and seasons of use between the alternatives.

In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available under Alternative 3. The decision to adopt a Johnson Valley to Stoddard Valley Competitive Event Corridor would result in more intensive emissions along the designated route, and may increase limited access area use that otherwise might occur within the OHV Open Area. However, with the MCAGACC military base expansion and resulting reduced OHV Open Area, some of that use is anticipated to transfer to this area anyway, unless a corridor is provided. In consideration of this, overall air quality impacts from this decision are considered nominal.

Under Alternatives 4 and 5, the “C” route network includes areas northeast of the Spangler Hills Open Area above the Randsburg Wash Road and within the Summit Range and east of Highway 395, as available for competitive OHV events managed under a SRP. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The network is more extensive than the No Action Alternative and Alternative 2, but less extensive as Alternative 3. Likewise, the localized air quality impacts from Alternatives 4 and 5 would be moderately higher than the impacts from the No Action Alternative, and substantially higher than under Alternative 2, but lower than Alternative 3, based on the number of miles and seasons of use between the alternatives.

The proposals for the disposition of three competitive or speed-controlled corridors to serve events are the same in Alternatives 4 and 5 as Alternative 3, and the impacts are the same for both alternatives as well. These impacts are greater than for Alternative 2 or the No Action Alternative.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

OHV use on dry lakebeds has the potential to cause significant fugitive dust emissions. Disturbance of soils on dry lakes by wind erosion is very significant on playas, and the wind erosion worsens when OHV travel crushes salt crusts deposited after the last flood event exposing fine sediments under the crust to winds blustering across a playa unobstructed by surface roughness. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could affect local and regional air emissions.

Table 9 of the CDCA Plan currently lists Coyote dry lake as OHV Closed use, and does not list designations for Koehn, Cuddeback, or Chisholm Trail dry lakes. Under the No Action Alternative, no change would be made to the list of dry lakes for which designations are made, or to any of the current designations. Therefore, there would be no change in air emissions. Air emissions at Koehn dry lake, which is currently designated as “Open” to OHV use, would continue at current levels. OHV use on Koehn dry lake is relatively light, but potential impacts to air resources may occur from potential arsenic emissions from playa dust. Under the No Action Alternative, continued OHV use of Coyote dry lake, which would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, would have limited impacts to air quality. Coyote dry lake currently receives relatively light use, and the severity of air quality impacts is not anticipated to substantially increase in the near future. Under the No Action Alternative, continued OHV use

of Cuddeback dry lake, which would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, would continue at current levels. Cuddeback dry lake currently receives substantial use, and its soil crusts are highly modified from long term use. In addition, a potential impact from wind-borne arsenic, similar to that at Koehn dry lake, would continue at Cuddeback dry lake (Kim et al. 2012, 2014). Therefore, its continued use may have an already existing direct adverse impact on air quality, including impacts for fugitive dust with high arsenic concentrations. Chisholm Trail dry lake would remain designated as closed to all types of use, so there would be no change in impacts to air resources. The use or closure of any of the four lakebeds to OHV travel under any of the alternatives would not impact sensitive receptors, as there are no sensitive receptors within the specified buffer distance from any of the lakebeds.

Under Alternative 2, impacts from air emissions at Koehn dry lake would cease, because Koehn dry lake would be OHV Closed use. The reduction in OHV use of Koehn dry lake under Alternative 2 would reduce local emissions associated with OHV use of that area over the long term, and would therefore have a net beneficial impact on local air quality. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes would be low, and Alternative 2 is not expected to have an indirect, adverse impact on air quality by increasing the recreational use of routes in other areas. Under Alternative 2, continued OHV use of Coyote dry lake, which would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, would have limited impacts to air quality. Coyote dry lake currently receives relatively light use, and the severity of air quality impacts is not anticipated to substantially increase in the near future. Continued OHV use of Cuddeback dry lake, which would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit” under Alternative 2, would continue at current levels, and may have a direct adverse impact on air quality, including impacts for fugitive dust with high arsenic concentrations.

Under Alternatives 3, 4, and 5, impacts from air emissions at Koehn dry lake would be substantially reduced as compared to the No Action Alternative, because Koehn dry lake would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”. However, emissions would still be higher than those associated with Alternative 2. Under Alternatives 3, 4, and 5, Coyote dry lake and Cuddeback dry lake would be open to OHV use. While this plan amendment decision would not increase the overall recreational use of routes, it may transfer recreational use to areas which are more prone to generating fugitive dust emissions, due to finer soil grain size. Therefore, this decision would increase emissions in the local area of Coyote dry lake and Cuddeback dry lake, and may have an adverse impact on regional air quality.

Under all alternatives, Chisholm Trail dry lake would remain designated as closed to all types of use, so there would be no change in impacts to air resources.

The use or closure of any of the four lakebeds under all alternatives would not impact sensitive receptors, as there are no sensitive receptors within the specified buffer distance from any of the lakebeds.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Staff observations and informal discussions with visitors to the area reveal that a marked shift in use patterns has begun in the Rand Mountains-Fremont Valley Management Area. Under the No Action Alternative, visitors now use the designated trails less as a recreational trail riding experience and more often as a travel network to go from one desirable area to another. Additionally, BLM staff has observed a shift in people camping away from the management area at sites closer to the suburban developments and services established around California City. Air quality impacts from this shift in use are minimal.

Under the No Action Alternative and Alternative 2, the implementation of the permit system in the Rand Mountains-Fremont Valley Management Area would continue. The system does not directly impact air quality, but indirectly may do so by dissuading some users from using this area. This may have nominal local beneficial effects. However, the users of those routes are expected to use other routes and areas within the planning area for recreation, and the overall amount of emissions within the planning area is expected to remain the same. Therefore, neither the No Action Alternative nor Alternative 2 would have a direct adverse or beneficial impact on regional air quality.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. By eliminating the permit requirement, this decision may result in an increase in recreational use of these routes, and thus an increase in localized fugitive dust emissions. However, this additional use would likely be transferred from other areas, which would have a corresponding reduction in fugitive dust emissions which would be beneficial in those areas. The overall net regional air emissions are not likely to be changed by this decision.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, there would be no change to the current stopping, parking, and camping distances that are currently authorized inside and outside of DT ACECs. These distances have the effect of allowing previously disturbed areas to become re-vegetated over time, and also reduce the amount of new disturbance that would occur, thus gradually reducing air emissions associated with fugitive dust. The effect of these actions would be a net beneficial impact on local and regional air quality.

Alternative 2 would further limit stopping and parking to previously disturbed areas within 50 feet of the route centerline outside of DT ACECs. This would be a reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet. This reduction would result in increasing the beneficial effect associated with allowing previously disturbed areas to become re-vegetated, and reducing the amount of new disturbance.

Alternatives 3, 4, and 5 would further limit stopping and parking to previously disturbed areas within 100 feet of the route centerline outside of DT ACECs. This would be a reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet. The effect of these actions would be a net beneficial impact on local and regional air quality. However, the beneficial impact would be lower than that for Alternative 2, because Alternatives 3, 4, and 5 would allow for a wider area of disturbance (100 feet versus 50 feet).

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

The livestock grazing program under the No Action Alternative would continue the current trend toward both decreased extent and intensity of grazing. The livestock that would remain on public lands in the WEMO Planning Area would create minor and declining GHG emission levels, and PM₁₀ emissions would continue to be below de minimis values (MDAQMD, 1995).

Under Alternative 2, discontinuing livestock grazing on portions of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments would result in less grazing use, thus lower overall emissions when compared to the No Action Alternative that would be generated from the remaining grazing operations within the West Mojave Planning Area. Under Alternative 3, 4, and 5, livestock grazing would continue under the terms and conditions contained in the Final Grazing Decisions issued for active grazing allotments within the West Mojave Planning Area. Direct and indirect impacts to air quality from the current grazing operations within the West Mojave Planning Area would continue to be de minimis as determined in No Action (MDAQMD 1995), because Alternatives 3, 4, and 5 would result in the same grazing operations within the planning area.

4.2.1.4 Differences in Impacts Among Route Designation Alternatives

Direct Impacts to Air Quality

The evaluation of impacts common to all alternatives concluded that regional emissions directly stemming from OHV travel and recreation on BLM lands for ozone-precursor substances (VOC and NO_x emissions) and particulate matter would not change among the alternatives. Therefore, the impacts to regional air quality from all alternatives from direct emissions from OHV travel and recreation would be the same. Regional PM₁₀ emissions have largely remained stable since 1996, including the period since the 2006 WEMO Plan. No trend toward increased direct impacts to air quality in the WEMO planning region at monitoring sites near popular OHV recreation sites is evident; therefore, OHV recreation on BLM lands is not creating a net effect of adverse direct impacts.

Indirect Impacts to Air Quality

The analysis of impacts common to all alternatives concluded that indirect air emissions associated with wind erosion on disturbed areas would vary among alternatives, depending on the amount of routes left open to OHVs and the amount of routes classified as transportation linear disturbances.

The mileage of routes in close proximity to sensitive receptors and residents under each of the alternatives is presented in Table 4.2-1.

Table 4.2-1. Miles of Routes in Proximity to Sensitive Human Receptors and Nearby Residents for Air Quality Impacts – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
No Action Alternative				
Miles of route within 1 mile of Sensitive Human Receptors	33.2	0	0.8	106.3
Miles of route within 300 feet (0.057 miles) of Residences	250.5	0	1.0	435.2
Alternative 2				
Miles of route within 1 mile of Sensitive Human Receptors	32.0	7.8	0.8	99.7
Miles of route within 300 feet (0.057 miles) of Residences	248.3	1.8	1.0	435.7
Alternative 3				
Miles of route within 1 mile of Sensitive Human Receptors	2.9	1.4	0.3	2.6
Miles of route within 300 feet (0.057 miles) of Residences	609.4	2.9	1.6	72.9
Alternative 4				
Miles of route within 1 mile of Sensitive Human Receptors	1.6	0	0.3	5.3
Miles of route within 300 feet (0.057 miles) of Residences	268.8	1.3	2.5	414.1
Alternative 5				
Miles of route within 1 mile of Sensitive Human Receptors	1.5	0.8	0.3	4.5
Miles of route within 300 feet (0.057 miles) of Residences	372.1	2.7	3.4	308.7

Alternative 3 has the greatest potential for impact to sensitive human receptors with the 609.4 miles of OHV Open and OHV Limited routes, which is approximately 358.9 miles more than the No Action Alternative. Alternative 5 has an intermediate impact with 121.6 miles more than the No Action Alternative. Alternative 2 has the least potential for impact with 2.2 miles less than the No Action Alternative. The No Action Alternative and Alternative 2 have a similar reduction in impact with 106.5 and 99.7 miles of transportation linear disturbances respectively.

The analysis of impacts common to all alternatives also concluded that indirect air emissions associated with wind erosion of disturbed areas would vary slightly among alternatives, depending on the amount of routes left open to OHVs and the amount of routes designated as transportation linear disturbances. These differences between alternatives will be manifest primarily beyond the life of the plan. Two factors limit more immediate changes. Routes are being actively rehabilitated to the visual horizon, and active rehabilitation will continue under all alternatives over the life of the plan. The majority of routes designated as transportation linear

disturbances would naturally reclaim. For desert soils, depending on the particular texture of the soils, in 100 years most routes would be 60 to 80 percent reclaimed.

Under all alternatives, active route rehabilitation would occur when opportunities are identified and funding becomes available. Over the long term (100 years or more of consistent active rehabilitation activities and natural reclamation of routes), emissions of PM₁₀ concentrations would decline on transportation linear disturbances.

4.2.1.5 Federal Conformity Analysis

A federal conformity analysis is required for any federal action within any federal nonattainment or maintenance area. The Clean Air Act and its implementing rules (40 CFR 93) state that federal agencies must make a determination that proposed actions in federal nonattainment or maintenance areas conform to the applicable state implementation plan (SIP) for the individual criteria pollutant before the federal action is taken. In addition, the action cannot cause or contribute to any new violation of the National Ambient Air Quality Standards (NAAQS), cannot increase the frequency or severity of any existing violation of any NAAQS, and cannot delay timely attainment of any standard or any required interim emission reduction or other milestones. The analysis must account for both directly and indirectly generated emissions.

The General Conformity Regulation has the following definitions for direct and indirect emissions (USEPA 2010):

Direct emissions means those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable.

Indirect emissions means those emissions of a criteria pollutant or its precursors:

- (1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action;
- (2) That are reasonably foreseeable;
- (3) That the agency can practically control; and
- (4) For which the agency has continuing program responsibility.

Areas for focused management for air quality in the WEMO Planning Area have nonattainment status under either NAAQS or CAAQS. The criteria pollutants for which nonattainment status applies are ozone, PM₁₀, and PM_{2.5} (CAAQS only). These criteria pollutants in areas of nonattainment or maintenance of air quality standards are used in the determination of federal conformity for each alternative. The following sections identify which areas the analysis of federal conformity covers Nonattainment Areas for NAAQS Standards

Severe nonattainment status for the 8-hour ozone NAAQS covers the Antelope Valley (Los Angeles County) and the southern two-thirds of the WEMO portion of San Bernardino County, both comprising a portion of the West Mojave Desert 8-hour ozone nonattainment area. The small portion of the South Coast-Coachella Valley Management Area in the WEMO Planning Area is in severe nonattainment for ozone (Riverside County) as well, but the BLM manages no public lands in that area. Eastern Kern County, apart from the vicinity of Ridgecrest and Indian Wells Valley, has moderate nonattainment for ozone. The WEMO portions of Inyo County, the

Ridgecrest vicinity, and Indian Wells Valley in Kern County, and the northern third of the WEMO Planning Area in San Bernardino County remain unclassified for ozone attainment status. The EPA is currently evaluating the status of ozone for Indian Wells Valley under CAAQS and NAAQS for attainment.

Therefore, the West Mojave Desert ozone nonattainment area and the East Kern ozone nonattainment area comprise the analysis area for ozone and air quality in this SEIS. The analysis assumes that the use of OHVs on the BLM route network under each alternative remains constant across all alternatives and over the period 2017 (baseline) to 2035. All emissions are tailpipe emissions, thus considered as direct impacts from the current and projected OHV traffic. Table 4.2-2 displays the emissions from the ozone-precursor substances VOCs and NO_x in 2017 and 2035. Details about the modeling upon which the general conformity analysis for ozone precursors is based are found in the Aspen Environmental Group report (2018) in Appendix E-2.

Table 4.2-2. Forecast for 2035, Ozone Nonattainment/Maintenance Areas

All Alternatives	Ozone Nonattainment Areas			
	West Mojave Desert		Eastern Kern	
	VOC	NO _x	VOC	NO _x
Nonattainment Status	Severe		Serious	
Total 2017 Baseline tons/year	39.20	7.70	41.67	6.54
Total 2035 tons/year	33.33	7.34	35.24	7.16
Change from 2017 Baseline	- 5.87	- 0.36	- 6.43	0.62
General Conformity Threshold tons/year	25	25	50	50
Threshold Exceedance	No	No	No	No

Source: Aspen Environmental Group (2018)

Note: Data in this table reflect the assumption that (1) the total open OHV route mileages for each alternative do not change between the present and 2035; and (2) the OHV use on the route network remains constant; and (3) technical advances in reducing tailpipe emissions as modeled by CEPAM are in place.

By 2035 some reductions in emissions on the BLM OHV travel network from ozone precursors are expected because of anticipated reductions in vehicle tailpipe emissions as modeled by CEPAM. None of the alternatives will induce any threshold exceedances for VOCs and NO_x and are in general conformity Clear Air Act standards for federal agency actions.

PM₁₀ Attainment Nonattainment and Maintenance for NAAQS Standards

The WEMO Planning Area consists of five nonattainment areas and two maintenance areas for the PM₁₀ NAAQS. Serious nonattainment of the NAAQS for PM₁₀ in the WEMO Planning Area is occurring at the far south end of the Owens Valley, a small part of eastern Kern County, and the South Coast-Coachella Valley portion of the WEMO Planning Area. The BLM manages no public lands within the WEMO portion of the South Coast-Coachella PM₁₀ management area; this area is omitted from analysis here. Two nonattainment areas in the WEMO Planning Area are classified as moderate nonattainment: San Bernardino and Trona (both San Bernardino County). Another two areas are classified as moderate maintenance areas, currently in attainment

status under a plan to keep the areas from returning to nonattainment status: Coso Junction (Inyo County) and Indian Wells Valley (Kern County).

The six air quality areas with BLM public lands in either maintenance or nonattainment status for the PM₁₀ NAAQS are the management areas analyzed here.

All alternatives assume that the annual number of miles of OHV driving on the BLM travel network does not change from one alternative to another. Therefore, with the vehicle travel miles being constant, the amount of fugitive PM₁₀ emissions directly originating from vehicle tires on desert trails is the same for all alternatives and is not a determinant for conformity to *de minimis* thresholds for PM₁₀ NAAQS. The critical factor for determination of conformity to PM₁₀ thresholds stems from the indirect effect wind erosion from the amount of surface area of designated open OHV trails under each alternative. Wind erosion from the area of surface soils on and at the edges of OHV trails is enhanced by the continued exposure to wind erosion. The larger the area of exposed and disturbed soil on the routes for each alternative, the greater the amount of indirect fugitive dust emissions that comprise variable PM₁₀.

The No Action Alternative, would bring about no change to current emissions and would not increase production of the key criteria pollutants. Alternative 2, would result in greatest reductions of emissions due to active and natural restoration of the largest number of closed routes and the smallest area of exposed open OHV route surface area. Alternative 3, would have the highest likelihood of exceeding *de minimis* thresholds for the PM₁₀ NAAQS because it would have the greatest area of route miles and disturbed land area subject to continual exposure to ongoing wind erosion in the absence of OHV travel.

Alternatives 4 and 5 would result in smaller reductions in the amount of PM₁₀ emissions than Alternative 3, as these alternatives have smaller increases in the mileages of disturbed soil on OHV Open routes. Table 4.2-3 displays the calculations for emissions estimated by Aspen Environmental Group (2018, Appendix E-2) for the year 2035. By that year, the endpoint in current ARB projections for emission in the future, emission reductions from each alternative would show progress toward reduction in PM₁₀ fugitive dust emissions as reduced disturbances on soil surfaces of OHV Closed routes would be moving toward restoration of soils and vegetation.

Table 4.2-3. Forecast for General Conformity in 2035 for PM₁₀ Nonattainment and Maintenance Areas

	Nonattainment and Maintenance Areas					
	Coso Junction	East Kern	Indian Wells	Owens Valley	SB County	Trona
Status	Maintenance	Serious	Maintenance	Serious	Moderate	Moderate
Baseline / No Action Alternative						
Miles of Active Roads	297	93	549	156	3,698	336
Baseline PM ₁₀ tons/year	451	141	834	237	5,625	511
Alternative 2						
Miles of Active Roads	232	101	496	124	3,213	273

Table 4.2-3. Forecast for General Conformity in 2035 for PM₁₀ Nonattainment and Maintenance Areas

	Nonattainment and Maintenance Areas					
	Coso Junction	East Kern	Indian Wells	Owens Valley	SB County	Trona
Status	Maintenance	Serious	Maintenance	Serious	Moderate	Moderate
PM ₁₀ tons/year	353	154	754	189	4,888	416
Change from Baseline tons/year	-99	13	-80	-48	-737	-96
General Conformity Threshold tons/year	100	70	100	70	100	100
Threshold Exceedance	No	No	No	No	No	No
Alternative 3						
Miles of Active Roads	465	187	1,264	289	5,838	614
PM ₁₀ tons/year	707	284	1,923	439	8,879	934
Change from Baseline tons/year	256	144	1,088	202	3,254	422
General Conformity Threshold tons/year	100	70	100	70	100	100
Threshold Exceedance	YES	YES	YES	YES	YES	YES
Alternative 4						
Miles of Active Roads	309	142	638	185	3,718	340
PM ₁₀ tons/year	470	217	970	282	5,654	517
Change from Baseline tons/year	19	76	136	45	30	6
General Conformity Threshold tons/year	100	70	100	70	100	100
Threshold Exceedance	No	YES	YES	No	No	No
Alternative 5						
Miles of Active Roads	319	144	683	190	3,902	366
PM ₁₀ tons/year	486	219	1,039	289	5,935	557
Change from Baseline tons/year	34	78	205	52	310	45
General Conformity Threshold tons/year	100	70	100	70	100	100
Threshold Exceedance	No	YES	YES	No	YES	No

Source: Aspen Environmental Group (2018)

Note: Data in this table reflect the assumption that (1) the total open OHV route mileages for each alternative do not change between the present and 2035; and (2) the OHV use on the route network remains constant.

Table 4.2-4 shows the percentage by which the total OHV route length in each nonattainment and maintenance changes under each alternative.

Table 4.2-4. Percentage Change in Surface Area Exposed to Wind Erosion in Areas Managed to Reduce PM₁₀ Emissions

	Percent Change in Nonattainment and Maintenance Areas						Average Share of OHV Network in all PM10 Mgmt Areas
	Coso Junction	East Kern	Indian Wells	Owens Valley	SB County	Trona	
Status	Maintenance	Serious	Maintenance	Serious	Moderate	Moderate	
Baseline / No Action Alternative	0	0	0	0	0	0	77.2
Alternative 2	-22	9	-10	-21	-13	-19	89.8
Alternative 3	57	101	130	85	58	83	84.1
Alternative 4	4	53	16	19	1	1	89.5
Alternative 5	7	55	24	22	6	9	89.6

The East Kern and Indian Wells Valley PM₁₀ air quality management areas are the most likely locations for being out of conformity in three of the five alternatives. Indian Wells Valley is of particular concern because focused planning is already in place to maintain the area on track toward permanent recovery of attainment status for the PM₁₀ NAAQS.

4.2.1.6 Impacts to Nonattainment of CAAQS in the WEMO Planning Area

Ozone Nonattainment for 1-Hour and 8-Hour CAAQS

The ARB has designated the entire WEMO Planning Area as an area of nonattainment for the ozone 1-hour and 8-hour CAAQS. Demand for OHV travel opportunities is assumed to be constant and independent of the total mileage of the BLM OHV route network for each alternative. Precursor substances (VOCs and NOx) for ozone formation come virtually entirely from motorized equipment and vehicle tailpipes. Because each alternative does not change OHV use and the amount of ozone precursor substances remains the same, the alternatives themselves do not generate different amounts of vehicular ozone. For the foreseeable future, none of the alternatives alters ozone amounts in the air. Alternatives in this SEIS generate no change in ozone amounts and the impact on attainment or nonattainment of the CAAQS is neutral for all alternatives.

Nonattainment for the PM₁₀ CAAQS

The ARB has determined that the entire WEMO Planning Area apart from the Coso Junction air quality management area is in nonattainment for the CAAQS for PM₁₀. The nonattainment area is part of the air quality analysis. Direct emissions of PM₁₀ from the churning of tires on soil and tailpipe emissions are the same for each alternative because the total mileage of the OHV route network in each alternative has no foreseeable impact on the number of miles of OHV travel on the route network. The indirect impacts of wind erosion generating fugitive dust and PM₁₀ over the disturbed soil surfaces on the OHV trail network under each alternative, however, will differ

among alternatives because the surface areas of the OHV route networks exposed to wind erosion differ among alternatives. Alternative 3 presents the largest OHV route network and hence the largest amounts of disturbed surface area of routes exposed to wind erosion over soil surfaces continually disturbed by OHV traffic. Thus, Alternative 3 will have the greatest negative impact on nonattainment for the PM₁₀ CAAQS and Alternative 2 will have the least negative impact on nonattainment for the PM₁₀ CAAQS. An analysis of the production of PM₁₀ in the most critical areas of the WEMO Planning Area, areas of nonattainment for both the NAAQS, indicate that the application of avoidance and mitigation methods will be most critical in the Indian Valley Springs region to efforts to attain/maintain the PM₁₀ CAAQS.

Nonattainment for the PM_{2.5} CAAQS

The portion of the MDAQMD that corresponds to the San Bernardino County 8-hour Ozone NAAQS is also the single portion of the WEMO Planning Area with BLM public lands that do not attain the CAAQS for PM_{2.5}. This area is included here for analysis of impacts to the PM_{2.5} CAAQS in this SEIS. PM_{2.5} emissions originate principally from direct OHV tailpipe emissions, OHVs directly creating fugitive dust on the OHV route network, and indirectly from wind erosion over disturbed surfaces of the OHV route network. The first two components are assumed to be identical across alternatives because the amount of OHV travel on the route network is the same for each alternative. The surface area of the OHV route network determines how much indirect emissions above the natural background settings are coming from wind erosion of disturbed soil surfaces of the route network. Alternative 3 would produce the largest amount of indirect emissions in the PM_{2.5} CAAQS nonattainment area because it has the largest mileage for the OHV route network in the nonattainment area of all alternatives. Alternative 2 has the lowest mileage for the OHV route network, the smallest amount of indirect emissions, and the least impact on nonattainment of the five alternatives. Application of avoidance and mitigation methods will reduce adverse impacts on nonattainment of the PM_{2.5} CAAQS from the SEIS alternatives.

4.2.1.7 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for air resources that were considered, and that may be implemented, include but are not limited to:

- Designate route as transportation linear disturbance;
- Modify access to direct vehicular traffic to routes and areas with a lower impact;
- Harden the surfaces of access routes to reduce windborne dust emissions;
- Apply water or similar dust suppressant to the route during high use periods;
- Limit the route to lower intensity use or prohibit SRP use;
- Implement Best Management Practices for controlling fugitive dust from vehicular travel;
- Install signs; and
- Determine that no additional minimization and mitigation measure is needed based on area or site evaluation.

These measures reduce overall indirect air emissions and reduce the proximity and thus impact of both direct and indirect emissions to sensitive receptors or residences. Measures to limit new ground disturbance in DT ACECs, implement vertical mulching on closed route segments, and limit authorized stopping and parking to within 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs, and limit camping to disturbed areas adjacent to open routes, would reduce disturbance of currently undisturbed areas and allow currently disturbed areas outside the DT ACECs 50-foot limits to naturally re-vegetate, as compared to conditions before these limitations were enacted in 2006.

4.2.1.8 Residual Impacts After Implementation of Mitigation Measures

Differences among alternatives will be manifest primarily beyond the life of the plan. Two factors limit more immediate changes. Routes designated as transportation linear disturbances are being actively rehabilitated to the visual horizon, and active rehabilitation continues under all alternatives over the life of the plan. The majority of miles of routes designated as transportation linear disturbances would recover at a natural pace and without human intervention. However, wind erosion would still generate PM₁₀ for some time after the designation. For desert soils, depending on the particular soil properties, most routes would still be 60 to 80 percent reclaimed even after 100 years. These residual impacts, in the form of pollutant emissions from the wind erosion on routes with past OHV disturbance, would continue, albeit at a declining rate, even after mitigation measures such as designation of a route as a transportation linear disturbance were applied. The magnitude of indirect and residual emissions from wind erosion would be related to the mileage of routes designated as transportation linear disturbances under each alternative and the soil texture of the disturbances. Soil texture is one indicator of the susceptibility of a soil to generate dust if disturbed by OHV travel. These differences in residual effect would depend on the area covered by the disturbances and would be substantially manifest beyond the life of the current project.

Since the effects of grazing on PM₁₀ are nominal, grazing would not contribute to cumulative effects.

4.2.2 Greenhouse Gases

4.2.2.1 Methodology

The WEMO area issues, indicators, and methods for are as follows:

1. What are the expected greenhouse gas effects to the environment that will have the most impact to BLM resources and public land in the West Mojave Planning Area?
2. What are the greenhouse gas adaptation considerations for the WEMO Planning Area and what are the associated effects from proposed activities?
3. What would be the BLM's expected contribution to global warming (Greenhouse Gas Emissions/Carbon Sequestration) from current and proposed activities?

Key "Indicators" used to quantify and or qualify impacts for each issue include:

- Federal and State greenhouse gas regulations, policies and directions.

- The intensity, seasonality, and rate of change in temperature and precipitation impacting environmental functions, resources, and alternatives.
- Amount of biodiversity (composition, structure, and variation), productivity of ecosystem functions and services, velocity/rate of greenhouse gases, level of climate/non-climate stressors, and availability of habitat linkages, corridors, and climate refugia are key indicators of species vulnerability and adaptive capacity.
- The spatial and temporal scope of WEMO, as well as the duration of impacts is used to frame the analysis of cumulative effects of greenhouse gases.
- Carbon stored in soils, carbon stored in natural vegetation communities, precipitation effects to carbon sequestration productivity, and wildfire effects to carbon storage.
- Amount of greenhouse gas emissions and loss of carbon sequestration capacities resulting from WEMO management activities, such as off-road vehicle use, that are significant enough to differentiate between alternatives.

4.2.2.2 Impacts Common to All Alternatives

Issue 1: Greenhouse Gases: Environment and Resources

What are the expected climate-change effects to the environment that will have the most impact to BLM resources and public land in the West Mojave Planning Area?

The environmental consequences section evaluates the effects of the proposed action and alternatives. The effects of greenhouse gases to the environment, and BLM resources, are a cumulative effect and not an environmental consequence of the proposed actions. No additional analysis of greenhouse gas effects to the environment is provided in this section.

Issue 2: Climate Adaptation for WEMO Resources

What are the climate adaptation considerations for the WEMO Planning Area and what are the associated effects from proposed activities?

Specific climate modeling efforts were not carried out for the WEMO Planning Area due to the limited availability of site and activity specific data and the limited timing, availability and applicability of modeling systems for the scope and range of alternatives. The recent climate modeling efforts for the 2016 DRECP LUPA can be applied to much of the general WEMO area, and related resources, and have been incorporated in this analysis, where appropriate. At the plan-level, climate adaptation is discussed within the framework of general approaches and considerations, as well as conformity with Federal and State policies and regulations. The following environmental consequences discussion evaluates if proposed plan actions and alternatives may affect or preclude climate adaptation opportunities.

Air Quality (Greenhouse Gas)

None of the alternatives are expected to preclude climate adaptation opportunities for air quality resources. Climate adaptation opportunities for reducing greenhouse gas emissions could be impacted by the grazing and travel route activities outlined in the plan alternatives, if there are ongoing increases in GHG emissions. These impacts are defined under the Greenhouse Gases

Issue #3. The differences in emissions between Alternatives 2, 4, and 5 are insubstantial. Moreover, as exhibited in Appendix E, Alternative 3 has a higher potential to contribute to overall GHG emissions.

The mitigation and minimization measures outlined in the Air, Soil and Water, and Grazing sections of Chapter 4 would provide some minimization and mitigation for GHG emissions. For future project-level assessments, minimization and/or mitigation measures may also be developed to support plan-level GHG reductions. None of the grazing alternatives are expected to cause an increase in GHG emissions and there have been continuing declines in overall grazing activities in the WEMO area, thereby, none of the alternatives are expected to preclude GHG adaptation opportunities. Although detailed information was not available to quantify travel route GHG emissions, none of the alternatives would preclude future implementation of GHG adaptation opportunities.

Geology, Soil, and Water Resources

None of the alternatives are expected to preclude climate adaptation opportunities for geologic, soil, or water resources. Climate adaptation opportunities for geology, soil, and water are focused on soil carbon sequestration. Other climate adaptation approaches consider these resources, but are either related closely to the alternatives being evaluated (grazing and travel routes) or are covered under another resources area (e.g. climate refugia covered under Biological Resources). Those minimization and mitigation measures listed under the Geology, Soil and Water Resources section to reduce the non-climate stressors, such as pollution and erosion, will support climate adaptation opportunities to resist and respond to greenhouse gases and project-level analysis and conformity can also help guide projects in supporting those opportunities.

Climate adaptation opportunities for soil systems and productivity (e.g. soil organic carbon and carbon sequestration) could be impacted by travel route activities outlined in plan alternatives, if there are new travel routes and off-road vehicles that damage and degrade existing soil conditions and if new routes permanently damage or remove potentially productive carbon storage areas, as projected in climate models. The minimization and mitigation measures identified for soil and water resources such as restoring damaged areas will assist in mitigating the potential climate adaptation opportunities for existing conditions.

Carbon sequestration productivity could be impacted by the grazing activities outlined within plan alternatives. Although grazing trends are declining in the WEMO planning area, changes to environmental conditions will be considered in ongoing assessments where effective carbon storage exists, to determine which areas may need additional minimization and mitigation measures for impacts to carbon sequestration. However, it is unlikely that grazing impacts under any of the alternatives would significantly affect this climate adaptation opportunity.

Biological Resources

Any new travel routes established in close proximity to important climate refugia could preclude climate adaptation approaches. A limited number of important climate refugia areas were identified with the DRECP LUPA area and those that overlay the WEMO area and are within any proposed new travel routes could impact the climate adaptation of biological resources. Project-level analysis for new travel routes should put strong emphasis on protecting climate refugia areas.

The 2006 WEMO plan included a strong emphasis on wildlife corridors and habitat linkages and the proposed plan alternatives consider and comply with those conservation objectives and thereby provide support for some climate adaptation approaches. New travel routes through important existing or projected wildlife, as well as plant, corridors and/or habitat areas vulnerable to greenhouse gases (periphery populations) could preclude some climate adaptation opportunities. Additional plan- or project-level climate assessments and strategies should utilize the information provided in the 2016 DRECP LUPA climate models to assess wildlife corridors and habitat linkages under future scenarios and consider climate adaptation opportunities that could be beneficial to biological resources under a range of scenario conditions.

New travel routes that create disturbances and exacerbate climate effects to vulnerable species in large habitat areas that currently offer buffers to outside stressors could affect some climate adaptation options. Activities such as off-highway vehicle recreation can impact wildlife habitat by causing fragmentation, reducing patch size, and increasing the ratio of edge to interior. These effects can be adverse to species which require large blocks of contiguous habitat, or corridors linking patches of habitat (or linking management units such as Critical Habitat Units for desert tortoise). Severing or impinging upon linkages may be especially significant in relation to the ability of wildlife species to move in response to greenhouse gases. The presence of routes can inhibit animal movement due to reluctance of individuals to cross even narrow routes (Ouren and others 2007).

Recreation

None of the alternatives are expected to preclude climate adaptation opportunities for recreation resources and uses. Physical placement of any new routes within high hazard areas may increase risk to recreation users and require alternative climate adaptation approaches to minimize and mitigate risks.

Cultural Resources

None of the alternatives are expected to preclude climate adaptation opportunities for cultural resources and uses. Any increase in travel routes could exacerbate environmental conditions indirectly affecting cultural resources (e.g. increase erosion and/or sand and sediment transport, resulting in damages to cultural resources). Increased OHV access to new areas also being impacted by greenhouse gases (newly exposed) could indirectly affect cultural resources by increasing the risk of vandalism and/or theft of cultural resources. These issues would likely be addressed under current management direction and/or project-level activities.

Energy Production, Utility Corridors, and Other Land Uses

None of the alternatives are expected to preclude climate adaptation opportunities for cultural resources and uses, although any route limitations that restrict opportunities for renewable energy development may affect these climate adaptation opportunities.

Grazing

None of the alternatives are expected to preclude climate adaptation opportunities for grazing resources and uses. New travel routes could potentially increase other uses and activities in areas grazed and already under climate pressures.

Travel and Transportation Management Network

None of the alternatives are expected to preclude climate adaptation opportunities for the travel and transportation network. Climate adaptation could be impacted if new travel routes are placed in current or climate projected high flood or slide risk areas, but other adaptation measures could compensate and current resource minimization and mitigation measures identified in plan alternatives would help to mitigate some climate impacts. The current range of alternatives (grazing and travel) would have no impact on these climate adaptation options.

Issue 3: WEMO and Greenhouse Gas Emissions and Carbon Sequestration

What would be the BLM's expected contribution to global warming (Greenhouse Gas Emissions/Carbon Sequestration) from current and proposed activities?

A quantitative analysis is warranted in NEPA if GHG emissions are estimated or assumed to be more than or equal to 25,000 metric tons of carbon dioxide on an annual basis, and if this quantification can be easily accomplished (models, tools and data are readily available). This measurement does not trigger a specific management action or response, but can be used to show a level of significance that may be used to differentiate between alternatives. Federal, State and local regulations, policies and plans are used to measure a level of project impact to global warming. For example, if proposed actions are likely to impact State GHG emissions reductions targets, mitigation measures might be developed and alternatives may be weighed by their impact to those targets.

The 2005 WEMO EIS did not specifically analyze the global greenhouse gases impacts associated with the route network evaluated in that EIS. The Court's Summary Judgment and Remedy orders did not specifically reach conclusions, or provide direction, regarding the need for analysis of impacts on global greenhouse gases or greenhouse gas emissions.

A wide variety of BLM activities produce greenhouse gases, but the absence of reliable data limits the BLM's ability to quantify emissions at the planning level. The BLM-authorized activities proposed under Plan Alternatives that are most likely to produce substantial greenhouse gases are transportation, wildfire, and grazing.

Livestock grazing was quantified, but did not reach the measure of 25,000 metric tons of carbon dioxide equivalent a year for the affected environment or between the alternatives. Ideally, greenhouse gas emissions from enteric fermentation (grazing) should be calculated on the basis of actual livestock numbers (animal units) and the period of grazing, however, those numbers can be difficult to determine, especially at the resource management plan level. One animal unit is equivalent to a 1,000 pound (450 kilogram) cow with or without a calf that consumes approximately 25 pounds a day of dry matter forage or 2.5% of its body weight on a dry matter ration. The only information available for grazing in the Plan is the animal unit months (AUMs). This estimate for greenhouse gas emissions from enteric fermentation (grazing) is based on permitted AUMs instead of actual AUMs. Since the actual numbers often are less than permitted

numbers and the calculations are considering general grassland grazing, the estimates for this analysis are likely higher than actual GHG emissions.

4.2.2.3 Differences in Impacts Among Plan Amendment Alternatives

OHV use and active grazing result in direct GHG emissions, and any change as a result of the WMRNP alternatives has the potential to contribute incrementally to an increase or decrease in GHG emissions. A range of air quality factors contribute to global warming trends, including ozone and dust particles, but are not included in the greenhouse gas emissions analysis. Other air quality factors are assessed in the Air Quality sections of this document.

Under all of the alternatives, the greenhouse gas emissions from enteric fermentation (grazing), was calculated as less than 10,000 metric tons of carbon dioxide equivalent a year, with just over 600 metric tons of carbon dioxide equivalent a year as the difference from the highest and lowest numbers of AUMs (grazing use). These emissions are for combined allotments, at the highest authorized use, over the period of a year. Actual emissions would be much less, short-term, and dispersed. There has been a gradual reduction over the years in grazing allocations and activities and year-to-year GHG emissions would be less in years with limited forage or other poor land conditions. See the grazing sections of this document for more discussion of grazing activities and alternatives.

Table 4.2-5 outlines some of the variations of greenhouse gas and carbon sequestration impacts between grazing alternatives, however, as discussed above, GHG emissions were either less than significant or could not be calculated and thus did not affect the design of alternatives or decisions.

Table 4.2-5. Greenhouse Gas and Carbon Sequestration Associated with Grazing Alternatives

Plan Alternative	Impact Comparison
No Action Alternative	<p>No Action Alternative greenhouse gas emissions resulting from grazing are calculated at approximately 9,581 metric tons of carbon dioxide equivalent per year, which was calculated for cattle and not ephemeral sheep grazing, that would result in a lower calculation. This calculation is also higher than what the actual emissions would be due to formula criterion. Also, grazing is evaluated on a year-to-year and case-by-case basis and emissions could vary significantly. No Action Alternative grazing emissions may be slightly higher than Alternatives 2, 3 and 4.</p> <p>The magnitude of soil erosion and compaction, which could impact carbon sequestration processes, may be higher for Alternative1 (No Action) than Alternative 2 and would be higher than under the other alternatives in vacant allotments under the 2006 WEMO Plan.</p>
Alternative 2	<p>The Alternative 2 greenhouse gas emissions resulting from grazing would be the lowest amongst the alternatives and were calculated at around 8,960 metric tons of carbon dioxide equivalent per year. This was calculated for cattle and not ephemeral sheep grazing, which would result in a lower emissions number. This calculation is also higher than what the actual emissions would be due to formula criterion. Also, grazing is evaluated on a year-to-year and case-by-case basis and emissions could vary significantly.</p> <p>The magnitude of soil erosion and compaction from grazing, which could impact carbon sequestration processes, would be lower than other alternatives.</p>

Table 4.2-5. Greenhouse Gas and Carbon Sequestration Associated with Grazing Alternatives

Plan Alternative	Impact Comparison
Alternative 3	<p>The Alternative 3 greenhouse gas emissions resulting from grazing would be higher than Alternative 2 and fairly similar to the No Action Alternative and Alternative 4. Grazing emissions were not calculated for this alternative. Only the overall largest and smallest number of AUMs was calculated for their greenhouse gas emissions.</p> <p>The magnitude of soil erosion and compaction from grazing, which could impact carbon sequestration processes, would be higher than Alternative 2 and similar to the No Action Alternative and Alternative 4.</p>
Alternatives 4 and 5 (Draft and Final Proposed Action)	<p>The Alternatives 4 and 5 greenhouse gas emissions resulting from grazing would be higher than Alternative 2, similar to the No Action Alternative and less than Alternative 3. Grazing emissions were not calculated for this alternative. Only the overall largest and smallest number of AUMs was calculated for their greenhouse gas emissions.</p> <p>The magnitude of soil erosion and compaction from grazing, which could impact carbon sequestration processes, would be higher than Alternative 2, similar to the No Action Alternative and less than Alternative 3.</p>

4.2.2.4 Differences in Impacts Among Route Designation Alternatives

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. Because greenhouse gas emissions could not be calculated to a level of significance to differentiate alternatives, the configuration of the transportation network did not consider GHG emissions as a criterion in determining which routes would remain open and which would be designated as transportation linear disturbances under the various alternatives. In addition, no alternative-specific mitigation measures were developed to address GHG emissions.

The transportation methods defined in the WMRNP include OHV travel, mechanized travel and non-mechanized travel. The OHV travel will likely have more GHG emissions than the other categories which are mostly upstream impacts from traveling to and from parking areas. OHV travel includes standard passenger vehicles on maintained roads and off-highway vehicles on primitive road and trails. OHVs include off-road motorcycles, ATVs, jeeps, specialized 4x4 trucks and snowmobiles, which are all direct GHG emitters. Off-road recreational vehicles like snowmobiles can contribute to some criteria pollutants and CO₂ in winter. The state of California is in the process of adopting new emission standards for recreational engines and vehicles that will reduce future emissions. The new requirements vary depending on the kind of engine or vehicle. The emission standards apply to all new engines sold in the state and any imported engine manufactured after these standards begin.

The plan proposes several route networks, but not specified activities associated with routes. Authorized public land uses within the plan area were identified in the 2006 WEMO plan. The volume of OHVs on the transportation network is governed by many factors besides just the number of vehicle miles available. These include economic activity, population, and demand for recreation opportunities. Although we may assume a continued growth in the population, it is

uncertain what the recreation or economic trends will be for the area and if there will be significant changes in use of OHV transportation. Quantifying indirect GHG emissions from potential route uses is not possible. The OHV GHG emissions occurring within the plan's route network will most frequently be insubstantial, short-term, and dispersed. There are some events or project activities that may result in more substantial emissions. Those would be short-term, and would be evaluated and/or mitigated at the project-level.

As discussed in Section 4.1.3, the designation of the transportation network under the WMRNP alternatives would have no discernible effect on the volume of OHV use, and therefore no effect on associated GHG emissions. The volume of OHV use on the transportation network is governed by other factors than the number of vehicle miles, including economic activity, population, and demand for recreation opportunities. Designation of routes as transportation linear disturbances of a route does not necessarily mean a corresponding reduction in the miles traveled by recreationists within the region, and designation of a new route does not necessarily mean an increase in miles traveled. If certain routes in a region are designated as transportation linear disturbances, recreation users are likely to use other nearby open routes for the same purpose. Classification of routes as transportation linear disturbances or authorization of OHV routes can affect the density of OHV use in certain areas, but are not anticipated to affect overall use based on the history of authorizations in the planning area, and therefore are not likely to adversely affect overall GHG emissions in the region. Furthermore, the potential for increased GHG emissions from a particular authorization for a project, and/or the access and uses associated with the project, would be analyzed in conjunction with the project environmental review.

Because there would be no difference in GHG emissions among the route network alternatives, GHG emissions from OHVs are not discussed further for the individual alternatives.

A number of activities associated with energy production and utility corridors, as identified in the plan, would cause greenhouse gas emissions. Those impacts will be evaluated under project-level plans and various state and local regulations apply to the measurements, thresholds and compliance. A plan level analysis was conducted for renewable energy development projects identified in the 2016 DRECP LUPA and some of those are linked or associated with WEMO transportation routes, which will be further defined and evaluated at the project level. Each of the DRECP renewable energy projects was analyzed within separate environmental documents, under different methodologies for direct emissions.

OHV use can also impact carbon sequestration by the removal of vegetation and biological soil crusts, which act to uptake carbon dioxide (CO₂) directly from the atmosphere. The removal of biological soil crusts reduces the soil crusts ability to sequester carbon. Some arid to semi-arid soil crusts can take over 50 years to mature. Livestock grazing and other human activities that disturb the surface soils of deserts can also generate dust and wind driven erosion by removal of herbaceous plant cover and destruction of cryptobiotic soil crust. These effects are further exacerbated by annual grass invasion and associated frequent fire (Neff and others 2005). A study of the Mojave Desert indicated that the desert may uptake carbon in amounts as high as 100 grams per square meter per year (Wohlfahrt and others 2008). If these resources are impacted, this would equate to a maximum reduction in carbon uptake, calculated as carbon dioxide (CO₂) emissions of 1.48 metric tons of CO₂ per acre per year, for areas with complete vegetation removal. An increase in vehicle numbers and or new access routes could result in off-road activities in undisturbed areas with impacts to the process of carbon sequestration. Projected

greenhouse gases in precipitation (storm systems) and temperature may exacerbate hydrologic and soil conditions in the area and off-road activities such as OHV use, mountain bike riding, horseback riding, and grazing could have interrelated impacts to the carbon sequestration process from accelerated erosion and soil disturbances. These future conditions would be addressed during plan updates and amendments, as needed.

Changes in access and/or use of public lands could have indirect effects on weed transmission and/or fire ignitions, which could increase or decrease the occurrence and spread of wildfires and result in greenhouse gas emissions, as well as impacts on the carbon sequestration process. Wildfires emit greenhouse gases such as black carbon (soot), destroy native vegetation, and damage soil conditions, which also affects local hydrologic conditions and the carbon sequestration process. Soot can be deposited on snow where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects of black carbon include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

The wildfire regime has changed in the southern California desert environment, with increases in fire occurrence due mostly to human-caused ignitions and invasive plant expansions. A positive feedback loop exists among climate, disturbance, invasive species, and the carbon cycle. Changes in carbon cycling associated with disturbance are also significant in the absence of invasive species (USFS RMRS-GTR-316. 2014). In general, grazing and fire can affect ecosystems through a variety of factors that act on components of the carbon cycle (USFS RMRS-GTR-316. 2014). For example, both grazing and grazing exclusion have been found to promote shrub encroachment in several desert grasslands (Asner and others 2010, as cited in the RMRS-GTR-316. 2014). Associated changes in plant composition from grassland to shrubland would be expected to affect soil organic carbon through changes in above- and belowground plant growth and carbon stores.

BLM's wildfire management is addressed within the BLM fire management plan. Smoke emissions are monitored and regulated through the local air districts. Changes in climate with respect to temperature and precipitation are projected to change the composition and distribution of vegetation communities in the area and may result in changes in wildfire frequency and behavior. Future conditions and changes would be addressed in plan updates and amendments.

As for current conditions, no routes are proposed in previously undisturbed areas under the WMRNP, and as such, there would be no authorized impacts to carbon sequestration or carbon uptake. Under each alternative, some existing routes are designated as transportation linear disturbances, and the agency will be actively pursuing rehabilitation of these routes. As these routes become re-vegetated over the long-term, the new vegetation would uptake CO₂, resulting in an overall beneficial impact to global greenhouse gases. Because routes are anticipated to be re-vegetated at the same rate under all alternatives, the uptake of CO₂ is not anticipated to vary among alternatives, in the short term.

4.2.2.5 Resource-Specific Minimization and Mitigation Measures

Because no adverse direct or indirect impacts to global greenhouse gases were identified, no resource-specific minimization or mitigation measures were developed for GHG emissions in particular.

4.2.2.6 Residual Impacts After Implementation of Mitigation Measures

Because no incremental adverse impacts to global greenhouse gases were identified, there would be no residual impacts.

4.3 Soil and Water Resources

4.3.1 Soil Resources

4.3.1.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the route network evaluated in that EIS with respect to soil erosion, compaction, and other soil resource impacts. The analysis included a general discussion of the effects of OHV use on soil compaction, water erosion, mechanical displacement, wind erosion, and biological soil crusts.

In the Summary Judgment order, the Court held that the general discussion of the impacts of OHV use on soils was adequate, but that the 2005 WEMO EIS did not evaluate the proposed route network with respect to specific locations of potentially impacted soils. The Court also made a finding that the 2005 WEMO EIS did not adequately discuss the impacts of livestock grazing on soil resources. Finally, the Court made a general finding, for all resources, that the range of route network alternatives evaluated was inadequate. No other deficiencies were identified in the soil resource analysis in the 2005 WEMO EIS.

4.3.1.2 Impacts Common to All Alternatives

The direct sources of effects on soil resources from OHV use, including use of OHVs, result from changing the physical properties of soils through compaction, mechanical displacement, or removal of vegetation or biological soil crusts that stabilize surficial soils. These physical changes, in turn, affect rates of water infiltration into soil, potential for wind and water erosion, moisture retention in soils, and soil chemistry. The analysis presented below highlights potential adverse impacts in areas with soils of concern to managers as described in Section 3.3.2. Identification of these areas provide needed information to managers that will inform eventual future decisions for travel management in the West Mojave Planning Area under the Selected Alternative.

Compaction

Soil compaction can occur due to pressure exerted by animals, pedestrians, and vehicles. Areas frequently susceptible to soil compaction are OHV routes, developed and undeveloped camping areas, sites for livestock watering, and mine operation sites. A far-reaching impact from OHV travel on desert soils is soil compaction that results from the force of vehicle wheels rolling over the soil surface. The degree of soil compaction from OHV traffic depends in part on soil characteristics such as soil particle size, particle size distribution, organic matter content, soil moisture, and soil structure. Uniform coarse-grained soils tend to be less susceptible to compaction than fine-grained or poorly-graded soils or soils that consist of a diverse range of particle types. In the latter case, smaller particles are more easily wedged among larger particles when compaction force is applied.

The immediate impact of soil compaction is an increase in soil bulk density, i.e., the packing density of soil particles. Low bulk density means that more “macropore” space is present in a soil to fill with air or water. Compacted soils with high bulk density indicate that soil has less macropore space for air and water. When OHVs compact soils, other soil properties begin to change as well. Compaction essentially “squishes out” the pore space between soil particles. The macropores that remain are smaller than before compaction. Reduced macropore space in a soil decreases soil volume, thus leaving a surface subsided slightly below the level of surrounding uncompacted soil, such as vehicle tracks that persist long-term on desert soil surfaces.

As a soil becomes more compacted, the shearing of soil surfaces by vehicles breaks up (“pulverizes”) soil particles. With repeated vehicle passes over a vehicle trail, the sideways shearing movement of soil decreases while compaction is occurring. Soil pulverized and made finer by shearing forms small berms of loosened soil at each side of the vehicle tire. This finer material is a potential source of fugitive dust. Pulverized soil particles are frequently small enough to become windborne and can increase concentrations of particular matter in the air above expected natural concentrations.

Because soil compaction reduces the amount of water that the soil can retain, the fertility of the soil is reduced. Plant growth and habitat suitability for ground-dwelling species of wildlife diminish likewise.

Four main factors affect how the type of vehicle will compact and shear a desert soil (Nortjé et al. 2012):

- Weight of a vehicle and its load
- Tire pressure and size
- Track or trail size
- Vehicle speed

As a rule of thumb, the heavier a vehicle is, the wider and deeper is the zone of compaction. The pressure of compaction decreases with soil depth. Modifications to vehicle design, particularly to tire size, can moderate soil compaction. Large wide tires disperse compaction force from a vehicle over a larger surface area and thus reduce the depth of the zone of compaction in a soil.

Most soils, including desert soils and sands, are susceptible to compaction from repeated OHV driving or from animal trampling at sites for range improvements to benefit domestic livestock, such as watering facilities or holding corrals. OHV routes, trails, hill-climbs, and livestock watering and holding facilities are intensely compacted. Rangeland Health determinations conducted by BLM staff in the field for EAs prepared as part of reauthorizing West Mojave grazing allotments between 2007 and 2013 demonstrated that the soil standard for Rangeland Health (43 CFR 4180) was being met allotment-wide, with the exception of areas at or associated with watering facilities or holding corrals. These types of facilities typically occupied an area of one acre or less per facility. In addition, support areas such as staging areas, pit areas, viewing areas, and parking for event participants and viewers can become compacted. The amount of compaction depends on vehicle characteristics, amount of activity, soil type, and soil moisture content at the time of impact. OHV activity on wet soils tends to result in greater compaction than on dry soils. Some cohesion-less sands, such as sand dunes, are very resistant to

compaction whether wet or dry. Many dry lake bed soils have considerable resistance to compaction if driven on when dry.

Compaction of soils can have impacts to biological resources and water quality, as well as increase the potential for storm water flood damage. Compacted soils result in decreased water infiltration rates, which in turn reduce soil moisture levels necessary to support vegetation. Compaction can also make it more difficult or impossible for native plants to establish themselves, affecting the ability of an area to recover after vegetation has been impacted. By decreasing water infiltration rates and leaving areas denuded of vegetation, compacted soils increase storm water runoff rates which can, in turn, lead to increased storm water flow, flood damage, and soil erosion downstream of compacted areas. Reduced infiltration leads to increased overland water flow volume during infrequent but often intense desert rainstorms. Added surface water flow during and after a storm more easily overpowers the forces of cohesion and friction holding surface soil particles together. More soil particles downslope of compacted soils are eroded and transported overland as a result. The sediment load increases in the water flow cumulatively downslope and downstream, with potential adverse impacts to water quality. Overland water flow moves to washes and streams as compacted areas upslope shed a greater amount of runoff water than they would if left undisturbed. More water volume also accelerates gully erosion in rills and creeks at “knick” points in the landscape where the slope suddenly increases. The added sediment being transported may cause water quality to decline.

Residence time is the average time that rainwater remains at the site where it falls. By infiltrating into a soil and becoming part of the groundwater, water resides on site longer. With compaction, less water infiltrates and more water flows offsite, thus shortening the average amount of time that water remains near where it strikes the ground. A longer residence time for water benefits soil organisms and vegetation at a site. With a shorter residence time for water, the soil has less water available for seed germination and plant growth.

More runoff in the water system during rainfall lowers the threshold amount of precipitation needed for flooding to start. At a watershed scale, one cumulative impact of soil compaction from widespread OHV traffic and the resulting shortened residence time is that flooding becomes more frequent.

De-compaction and Erosion

OHV use and livestock use can also de-compact soils by mechanical displacement and/or removal of stabilizing vegetation and crusts. Intense vehicle use in steep areas (primarily hill climbs on slopes over 20 percent) and long-term livestock watering and holding facilities displaces soil, and leaves the remaining soil vulnerable to water erosion. Water erosion of soils removes organic and nutrient material that supports vegetation, and introduces sediment load to downstream water bodies, affecting water quality. Areas identified as having potential for increased soil erosion rates are those with slopes greater than 10 percent, and those mapped by BLM as being prone to erosion.

Wind erosion of soils is a major issue in the planning area. Wind erosion occurs whenever bare, loose, dry soil is exposed to wind of sufficient speed to cause soil movement, either rolling, bouncing, saltating, or aerosolizing into the air. Wind speeds as low as 13 to 15 miles per hour above the soil surface can launch medium-sized particles in soils prone to wind erosion. Medium-sized particles become detached and enter the wind stream momentarily, but then fall

back to the ground by force of gravity. Return from saltation causes them to impact other particles of differing sizes and set them into motion. Fifty to 80 percent of total soil movement may result from these particulate collisions. Wind erosion rates for soils may increase as soil properties (e.g., soil bulk density) or vegetative cover change. Erosion potential is magnified when percent slope (steepness) of a site is higher or when slopes are longer. In the planning area, approximately 2.3 million acres of the overall 9.1 million acres have slopes greater than ten percent (Figure 3.3-1).

Vehicle traffic on desert soils generates fugitive airborne dust. Vehicle tires passing at even low speeds over an erodible desert soil surface provide sufficient energy to detach fine soil particles and generate dust. Especially where numbers of people gather in the desert for vehicle-based recreation activities, exposure to high concentrations of fugitive dust is likely. Fugitive dust generated on the BLM public lands may also affect communities that lie downwind.

Recent studies funded by the BLM at the Nellis Dunes Recreation Area northeast of Las Vegas, NV, shed light on the roles of soils and OHV recreation in producing fugitive dust. Research studies covered five aspects of fugitive dust:

- Susceptibility of different soil types to produce dust during OHV riding
- Effect of different OHV types on amounts of dust production
- Effect of OHV velocities on dust production
- An estimate of the annual contribution of dust emissions stemming from OHV recreation
- An estimate of naturally-occurring arsenic in soils and in the dust produced by OHVs

Results from these studies apply specifically to conditions at Nellis Dunes Recreation Area. Some of the results may not apply to conditions at all areas in the West Mojave Planning Area because the soils present, the mix of vehicles used, and the chemical composition of soil minerals may differ. Methods from these studies to gather data about soils and dust and the resulting mapping products, however, show how OHV recreation managers can obtain and apply soils information for decision making in regard to protecting soils and OHV riders on public lands. The following findings from the Nellis Dunes studies bear on soil resource management in the West Mojave Desert.

- Soil texture greatly influences the amount of fugitive dust created from vehicle shearing on a desert soil. At Nellis Dunes, a four-wheeler always generates more dust on finer silt soils than on coarser sand soils. Soils with a high amount of silt have on average lighter-weight soil particles that require less wind energy to become detached soil particles and airborne. This is commonly known as “puff dust.” As the finer textured soil particles become airborne selectively over time, the portion of the soil with fine-textured particles decreases. As a result, fugitive dust emissions from a well-used trail usually decline over time.
- Vehicle velocity affects soil shearing and fugitive dust emissions. At or below 7.5 miles per hour, a four-wheel vehicle causes the release of little fugitive dust on either silty soil (fine) or sandy soil (coarse) surfaces. Increasing speeds with the same four-wheeler generates greater volumes of dust from both silt and sand. The rate of increase in fugitive dust emissions from higher speeds, however, is much greater from silty soils as compared

to emissions from sandy soils. This increased impact occurs even though the amount of time that the force applied from the faster moving vehicle over the soil is actually shorter.

- Effect of vehicle types is significant. Driving at any speed, a four-wheeler produces more fugitive dust emissions than a two-wheeled dirt bike over the same soil surface. The vehicle contact surface of the dirt bike with soil is smaller, but the dirt bike is also lighter weight and thus less forceful in detaching particles from the soil surface. At speeds above 20 km per hour, dust production increases exponentially more in the heavier vehicle. Interactions between soil textures, for example silt vs. sand, and different vehicle types may not always be so predictable. Experimental dune buggy results in low-dust sand environments were similar to the four-wheeler. But, on silt soils the dust emissions from the dune buggy were about one-third less than those from the four-wheeler.
- Fugitive dust emissions from vehicles are poorly described. Few data are available to account for the role of OHV recreation and travel in producing fugitive dust at an OHV recreation area on an annual basis. At the BLM Nellis Dunes Recreation Area, researchers found that dust emissions increased most over background levels of wind-generated dust when OHVs traveled across silt soils. Soil texture was the most important factor for determining increased dust emissions when vehicles rode over soil surfaces. In contrast, OHVs were found to generate little dust from sand soils, and particularly from coarse-grained sandy soils. Winds by themselves naturally created most of the emissions coming from sand soils.

Based on current soils data from the NRCS, it appears that certain areas within the WEMO Planning Area are more susceptible to accelerated erosion caused by wind and water (overland flow) and thus more susceptible to the impacts of OHV use, all equating to greater soil loss in those areas. The levels of increased soil erosion are linked to those changes in physical properties caused by compaction, mechanical displacement or removal of vegetation, but the overriding factor affecting susceptibility to accelerated erosion is soil textures present in the soil series and associations in these areas.

Key routes within areas susceptible to erosion have already been identified for minimization measures based on resource criteria may need further field evaluations to determine the appropriate minimization measure(s), if any to apply to reduce further soil loss. In wet years these areas may experience substantial soil loss based on soil properties and current and future disturbance conditions, including from continued OHV use.

Public Health

Soils may contain hazardous constituents which may pose an inhalation hazard. Most toxic air pollutants have no known safe levels and some may accumulate in the human body from repeated exposures. Some toxic minerals have naturally high concentrations in desert soils or in areas where waste from abandoned mining operations remains on the ground surface. Scientists from the University of Nevada and from the USGS are currently studying the extent and concentrations of dust containing naturally-occurring arsenic, asbestos-like minerals, and perchlorate minerals in the Mojave Desert to determine the risks to people's health.

Two specific mineral types are potentially toxic particulates in desert dusts where OHV recreation takes place: arsenic-containing minerals and minerals that have the pointed, fibrous

crystal shape of asbestos. Scientists working in the Mojave Desert in California have found several areas where concentrations of naturally occurring arsenic are high, such as Owens Lake. Areas with OHV trails passing through abandoned gold and silver mine sites often have an environmental legacy of exposed mine wastes containing elevated levels of toxic metals and metalloids including arsenic.

Effect of Route Designations

OHV use and livestock watering and holding facilities cause soil compaction, mechanical displacement, and removal of stabilizing materials. Changes in OHV use or development of additional livestock watering and holding facilities as a result of the WMRNP alternatives has the potential to have direct effects on soil resources, as well as resulting in indirect effects on air quality, water quality, storm water flow, vegetation, and human health. New or increased OHV vehicle use in places that have not previously been subjected to OHV use could result in either compaction or de-compaction, depending on the characteristics of the soil, the slope, the type of OHV, and the manner in which the vehicle is used. Continued OHV and livestock use in already compacted areas may not lead to additional compaction, but it would ensure that natural recovery does not occur. Continued OHV use on loose soils would lead to ongoing mechanical displacement and loss of soil through erosion, which are direct, adverse impacts to soil resources. Indirect impacts on air quality, water quality, storm water flow, vegetation, and human health would be adverse, and would continue until the affected soils were allowed to recover. Reductions in OHV and livestock use would lead, over time, to restoration of original soil conditions, which would be a beneficial effect. Designation of routes as transportation linear disturbances and reduction of grazing would allow soils to gradually recover, and therefore have a beneficial impact on soil resources. Active restoration, including de-compaction by raking or other mechanical means, can speed this process.

The significance of the impact on soil resources differs depending on whether impacts occur in close proximity to sensitive resources. Compaction and erosion that adversely affects vegetation would be more or less significant depending on the presence or absence of sensitive plant species, unusual plant assemblages, or riparian areas. Increased introduction of sediment due to water erosion would be more or less significant depending on the proximity to surface water bodies or aquatic resources. Increases in PM₁₀ emissions due to wind erosion can have regional effects, and would not be limited to the local area.

The alternatives being evaluated as part of the WMRNP would result in differences in the mileage and specific locations of routes that are available for OHV use, or are designated as transportation linear disturbances. The designation of specific routes as part of the transportation network under the WMRNP alternatives would affect the overall mileage of routes on which OHV use is allowed, as well as specific locations for OHV use. Therefore, direct impacts on soil resources, and resulting indirect impact to other resources, would vary among the alternatives. Under all alternatives, there would be changes in impacts to soil resources in the future as new routes are designated for OHV use, or existing routes are designated as transportation linear disturbances. Some of these changes could potentially occur within close proximity to sensitive resources, and would therefore have adverse or beneficial effects on those resources. In the future, after implementation of the project, new OHV routes would only be designated as a result of new requests for authorized uses, and designation of routes as transportation linear disturbances would only occur as authorized users cease operations and allow their authorized

use to expire. The total mileage of designated routes that would be added or removed from the network as a result of these authorizations is expected to be minimal compared to the current baseline inventory. In the case of new authorizations, including range improvements, BLM's authorization would only be provided following environmental review and consideration of soil resource impacts. Therefore, the specific resources and impacts would be considered at the time of authorization, and minimization or mitigation measures would be developed and applied to avoid or reduce adverse impacts.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. In that analysis, soil resource impacts were considered as a criterion in determining which routes would remain open and which would be designated as transportation linear disturbances under the various alternatives. Soil resource impacts were considered in several ways. The potential for increased soil erosion was considered by evaluating route locations with respect to slope, with areas of slope greater than 10 percent or areas with noted soil erosion issues being considered for minimization and mitigation measures such as designation of routes as transportation linear disturbances or other measures. In addition, the WMRNP alternatives include consideration of stopping and parking distances from routes in order to minimize disturbance in previously undisturbed areas, thus reducing the potential for soil compaction. Therefore, minimization of soil resource impacts was a factor both in development of the alternative route networks, in the specific limitations placed on routes in those networks, and in mitigation measures to be implemented on routes being designated as available for OHV use.

Effect of Livestock Grazing

Grazing animals can apply compressional and shear forces to the soil and biological soil crusts (BSCs). These direct impacts are limited to congregation areas (corrals and watering troughs). Indirect impacts to soils and BSCs would occur in a highly distributed manner. Biological soil crust response to these disturbances is highly variable. Moisture and burial are two important factors relating to the degree of impact. With coarse textured sandy soils, moist crusts are better able to withstand disturbances than dry soils (Belnap 2003 and BLM 2001). Many of the biological crust species are not mobile and cannot survive burial. However, as Belnap (2002 and 2005 and BLM 2001) noted, the hot desert crusts are simple crusts that are highly mobile and recover more quickly from disturbance than in less arid environments, despite soil crusts in semi-arid areas ability to greater withstand disturbance. The large, filamentous cyanobacteria can move 5mm per day if it is wet (Belnap 2003 and BLM 2001). Although rain and moist soils occur at the start of the grazing season, grazing in the later part of the spring can reduce the cover of biological soil crusts because the soils are dry. These simple crusts would likely recover within days once the rain returns and because the crusts are simple, site recovery outside of congregation areas should be such that the impact would not be substantial (BLM-TR 1730-2 2001).

4.3.1.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to soil resources from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

The currently designated "C" routes are not prone to soil erosion or other sensitive soils factors, and additional protective measures such as fencing along major arteries and SRP measures have been implemented to address potential issues that might arise adjacent to the routes; therefore, the No Action Alternative would have no direct or indirect impact to soil resources, in addition to the impacts identified in the 2006 WEMO Plan.

Under Alternative 2, the seasonal limitations on "C" routes may reduce their use for racing events, and thus have locally beneficial impacts on soil resources in those areas.

Under Alternative 3, the "C" routes northeast of the Spangler Hills Open Area and those found within the Summit Range and east of Highway 395 would result in the potential for increased soil erosion on 71.6 miles of routes.

Under Alternatives 4 and 5, the "C" routes that are to the northeast of the Spangler Hills Open Area above the Randsburg Wash Road and those found within the Summit Range and east of Highway 395 would allow for a potential increase in erosion on 57.9 miles of routes. The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area would be made with appropriate mitigation measures to protect soil resources.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, dry lakebeds are flat and therefore are not prone to soil erosion, so OHV use of vehicles on the lakebeds is not expected to increase erosion of soils. However, disturbance of soils on dry lakes by wind erosion is very significant on playas, and the wind erosion worsens when salt crusts from the last flood event are crushed by OHV exposing fine sediments under the crust to winds blustering across a playa unobstructed by surface roughness. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could affect soil erosion.

Under the No Action Alternative, no change would be made to the list of dry lakes for which designations are made, or to any of the current designations. Therefore, there would be no change in current soil erosion conditions.

Under Alternative 2, soil erosion associated with OHV use at Koehn dry lake would cease, because Koehn dry lake would be OHV Closed use. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes would be low, and Alternative 2 is not expected to have an indirect, adverse impact on soil erosion by increasing the recreational use of routes in other areas. Under Alternative 2, Coyote dry lake and Cuddeback dry lake would remain designated as "OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit", and there would be no change in current levels of soil erosion.

Under Alternatives 3, 4, and 5, soil erosion impacts at Koehn dry lake would be substantially reduced as compared to the No Action Alternative, because Koehn dry lake would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”. However, soil erosion rates would still be higher than those associated with Alternative 2. Under Alternatives 3, 4, and 5, Coyote dry lake and Cuddeback dry lake would be OHV Open use. While this plan amendment decision would not increase the overall recreational use of routes, it may transfer recreational use to areas which are more prone to soil erosion. Therefore, this decision would increase soil erosion in the local area of Coyote dry lake and Cuddeback dry lake.

Under all alternatives, Chisholm Trail dry lake would remain closed to all types of use, so there would be no change in impacts to soil resources.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

The routes in the Rand-Fremont system are not prone to soil erosion or other sensitive soils factors, and additional protective measures such as fencing along major arteries and SRP measures have been implemented to address potential issues that might arise adjacent to the routes.

Under the No Action Alternative and Alternative 2, the implementation of the permit system in the Rand Mountains-Fremont Valley Management Area would continue. Because the area is not prone to soil erosion or other sensitive soils factors, the system does not directly impact soil resources in the area. However, the system may dissuade some users from using the area for recreation, resulting in displacing those users to other routes and areas within the planning area, and soil resource impacts may result in those areas. Therefore, neither the No Action Alternative nor Alternative 2 would have a direct adverse or beneficial impact on soil resources, but could result in indirect impacts in other areas.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV access to the Rand Mountains would be eliminated. Because the area is not prone to soil erosion or other sensitive soils factors, these alternatives would have no direct adverse or beneficial impact on soil resources.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of allowing previously disturbed areas to become re-vegetated over time, and also reduce the amount of new disturbance that would occur, thus gradually reducing the potential for soil erosion. The effect of these actions is a net beneficial impact to soil resources.

Alternative 2 would limit stopping and parking to previously disturbed areas within 50 feet of the route centerline, both inside and outside of DT ACECs. This would be a reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet. Camping would be allowed adjacent to designated routes in previously disturbed areas, not to exceed 50 feet from the centerline, throughout the WEMO Planning Area. Although users are currently permitted to stop, park, and camp up to 300 feet from routes in areas prone to soil erosion, they are unlikely to

do so because those are areas of steep slopes, which are the areas most prone to soil erosion. This alternative may have beneficial impacts to soil resources by reducing OHV travel on undisturbed areas outside of designated routes, but the beneficial impact is expected to be small.

Alternatives 3, 4, and 5 would limit camping to previously disturbed areas within 50 feet of the route centerline inside DT ACECs, while stopping and parking would be limited to within 50 feet of the centerline within DT ACECs. Stopping, parking, and camping would be limited to 100 feet from the route centerline outside of DT ACECs. This would be a reduction from the limits in the No Action Alternative, but would still allow a larger area of disturbance than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2). In general, although users are currently permitted to stop, park, and camp up to 300 feet from routes in areas prone to soil erosion, they are unlikely to do so, because those are areas of steep slopes. Therefore, although these alternatives may have beneficial impacts by reducing OHV travel on undisturbed areas outside of designated routes, the beneficial impact is expected to be limited.

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, on-going but highly localized direct impacts to soils from compaction by livestock would continue at congregation areas in active grazing allotments. Limited, indirect impacts to soils and BSCs would continue in active grazing allotments.

Under Alternative 2, on-going but highly localized direct impacts to soils from compaction by livestock would continue at congregation areas in active grazing allotments. Discontinuing livestock grazing would allow for the slow de-compaction of soils at previously used water troughs and corral facilities associated with these allotments. Limited, indirect impacts to soils and BSCs would continue in active grazing allotments. The scope and relative impacts of these effects are roughly equivalent to the number of acres that would still be subject to grazing under this alternative (see Table 4.7-1).

4.3.1.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that many of the impacts associated with soil resources are indirect impacts that occur to other resources (air quality, water quality, vegetation, or human health) as a result of soil compaction, disturbance, or erosion. The indirect effects of compaction, disturbance, or erosion of soils on those resources are considered in their separate resource sections. For instance, wind erosion of disturbed soils is a component of PM₁₀ emissions evaluated in the air quality analysis.

The primary direct impact on soils associated with OHV use is the loss of soil through mechanical displacement and erosion. As discussed in Chapter 2, areas identified as having potential for soil loss due to mechanical displacement or erosion are those with slopes greater than 10 percent, and those mapped by BLM as having documented erosion issues. Therefore, because the specific locations of OHV Open and OHV Limited routes vary among the alternatives, some alternatives may have a greater adverse or beneficial effect on soil resources. The mileage of routes associated with those areas that are deemed to have the potential for soil loss under each alternative is presented in Table 4.3-1.

Table 4.3-1. Mileage of Routes in Areas with Potential for Soil Loss – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
No Action Alternative				
Miles of Routes in Areas with Greater than 10 Percent Slope	1060.7	0.6	17.8	2465.0
Highly Susceptible to Wind Erosion (WEG 1 and 2)	2102.8	0.6	2.1	3895.5
High Erodibility Potential (HSG D)	1514.0	0.6	4.4	2904.1
Alternative 2				
Miles of Routes in Areas with Greater than 10 Percent Slope	954.8	11.3	18.8	2559.8
Highly Susceptible to Wind Erosion (WEG 1 and 2)	1829.0	2.9	5.9	4163.3
High Erodibility Potential (HSG D)	1252.6	12.1	11.6	3146.7
Alternative 3				
Miles of Routes in Areas with Greater than 10 Percent Slope	2284.6	15.9	65.8	1177.7
Highly Susceptible to Wind Erosion (WEG 1 and 2)	4117.9	2.7	27.6	1852.8
High Erodibility Potential (HSG D)	2832.1	37.1	25.4	1530.8
Alternative 4				
Miles of Routes in Areas with Greater than 10 Percent Slope	1187.0	21.7	78.4	2257.1
Highly Susceptible to Wind Erosion (WEG 1 and 2)	2248.8	4.2	22.0	3726.2
High Erodibility Potential (HSG D)	1589.8	38.0	29.5	2765.8
Alternative 5				
Miles of Routes in Areas with Greater than 10 Percent Slope	1211.4	36.7	91.8	2204.6
Highly Susceptible to Wind Erosion (WEG 1 and 2)	2409.9	14.5	25.5	3551.1
High Erodibility Potential (HSG D)	1659.2	60.5	33.2	2670.5

Alternative 5 has the second greatest amount of OHV Open and OHV Limited routes in areas with greater than 10 percent slope, which are highly susceptible to wind erosion and have high erodibility potential. Alternative 5 has a slightly higher potential for impact with 60.8 miles more of Open/Limited routes than the No Action Alternative. Alternative 2 has the least amount of Open/Limited routes in areas with greater than 10 percent slope at 94.2 miles less than the No Action Alternative. Alternative 3 has the greatest amount of miles amongst all three soil loss

categories with regard to potential soil loss with 4,705.5 miles more than the No Action Alternative. Alternative 5 has an intermediate potential for impact with 839.1 more miles of Open/Limited routes than the No Action Alternative, and 838.4 miles less transportation linear disturbances than the No Action Alternative across all three soil loss categories.

4.3.1.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for soil resources that were considered, and that may be implemented, include but are not limited to:

- Select alternative route to minimize off-route disturbance and erosion potential;
- Implement seasonal restrictions, designated as OHV Limited only by permit, or designation of routes as transportation linear disturbances under certain conditions (such as when route is wet);
- Permit lower intensity use;
- Install access type restrictor;
- Install/implement erosion prevention Best Management Practices,
- Re-align route to minimize impact to environmentally sensitive area;
- Restrict stopping/parking/camping;
- Add parking/camping area;
- Install barriers or fencing;
- Narrow the route;
- Install educational information such as signs;
- Monitor the route for signs of increasing impacts;
- Determine that no additional minimization and mitigation measure is needed based on area or site evaluation; and
- Limit livestock congregation areas in grazing allotments to those required to facilitate the operation and maintain livestock distribution.

Whether they were applied during the route designation process or are mitigation measures, these measures would reduce soil compaction, disturbance, or erosion that directly lead to soil loss and indirect adverse impacts to other resources. Measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and limiting stopping and parking to 50 feet or less from route centerlines in DT ACECs and 300 feet outside of DT ACECs reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for soil loss or indirect effects to other resources in new areas as compared to pre-2006 conditions before these limitations were enacted. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific soil resource impacts, including direct soil loss, compaction, disturbance, and erosion, as well as

indirect impacts to other resources from these direct impacts, are considered before authorizing new OHV Open or OHV Limited routes.

4.3.1.6 Residual Impacts after Implementation of Mitigation Measures

Some residual effects in impacted areas are likely to continue after application of mitigation measures, both with continued OHV use, and following designation of routes as transportation linear disturbances. Although continued OHV use in areas subjected to compaction may not result in increases in compaction, it also would not allow recovery in those areas. The same is true in areas where de-compaction and removal of stabilizing surfaces has increased the potential for erosion. Even designation of routes as transportation linear disturbances in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken. If routes are designated as transportation linear disturbances, mechanical displacement of soils would be reduced in those areas. Residual impacts would continue at existing congregation areas within grazing allotments in the planning area.

The evaluation of impacts common to all alternatives points out that many of the impacts associated with soil resources are indirect impacts that occur to other resources (air quality, water quality, vegetation, or human health) as a result of soil compaction, disturbance, or erosion.

4.3.2 Water Resources

4.3.2.1 Methodology

The 2005 WEMO EIS analyzed the water quality impacts of the route network evaluated in that EIS. The analysis included a general discussion of the effects of the proposed action on water quality, as a result of soil erosion.

Similar to soil resources, the Court held that the general discussion of the impacts to water quality was adequate, but that the 2005 WEMO EIS did not perform an evaluation of the proposed route network with respect to specific locations of potentially impacted water resources. The Court also made a general finding, for all resources, that the range of route network alternatives evaluated was inadequate. No other deficiencies were identified in the water resource analysis in the 2005 WEMO EIS.

4.3.2.2 Impacts Common to All Alternatives

Water quality impacts associated with OHV and livestock use are primarily associated with increases in sediment released to surface water bodies by storm water erosion. In general, increased storm water erosion is an indirect effect of soil resource impacts. Compaction of soils associated with OHV and livestock use can lead to increased storm water runoff rates which, in turn, can have increased erosional potential. In addition, OHV and livestock use can de-compact soils or otherwise remove vegetation, crusts, or other stabilizing features that protect soil from erosion. These effects are exacerbated when the disturbance occurs directly in, or adjacent to, flowing streams or ephemeral desert washes.

OHV use can also increase erosion of soil through creation of vehicle cuts and tracks (Ouren and others 2007). These can act as conduits for runoff, concentrating storm water flow. Once rills form and re-direct storm water flow, erosion can make the rills even deeper, exacerbating the problem. In extreme cases, the route itself can become the primary storm water drainage,

completely re-configuring the drainage system in an area. This can impact water quality downstream through sedimentation, and can also create a deficit in soil moisture and infiltration.

OHV use on the transportation network also requires the use of petroleum fuels which, if released, can impact surface water or groundwater quality (Ouren and others 2007). In most cases, OHVs carry very limited volumes of these fuels, so the threat to water quality is minor. Fueling is generally done at commercial service stations, which have precautions in place to avoid fuel releases. In some cases, such as organized events, fueling of OHVs can be done from small containers or tanks carried by trucks. In these cases, the types of precautions available at commercial fueling stations would not be in place. However, the volume of fuel handled is still expected to be limited.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. In that analysis, water quality impacts were considered as a criterion in determining which routes would remain open and which would be designated as transportation linear disturbances under the various alternatives. Water quality impacts were considered by evaluating route locations with respect to proximity to desert washes, and either placing limitations or designation of routes as transportation linear disturbances that are parallel to, or predominantly within, a wash. In addition, the WMRNP alternatives include consideration of stopping and parking distances from routes in order to minimize disturbance in previously undisturbed areas, thus reducing the potential for soil erosion, which can impact water quality. Therefore, minimization of water quality impacts was a factor both in development of the alternative route networks, and in the specific limitations placed on routes in those networks.

Livestock Grazing

Livestock grazing and native wildlife can have a direct, negative impact to water quality due to their presence and use at undeveloped springs and creeks from the potential release of fecal coliform contamination into natural water sources. The pattern of fecal contamination shows that when cattle are present, fecal coliform levels are elevated and after they are removed, fecal coliform levels decline to near baseline (Carter 2001). Most developed water sources have been fenced and the water piped to a trough to protect the sources from direct livestock impacts to soils, vegetation and limit the release of fecal coliform. The sampling of chemical constituents does not typically occur during the PFC assessment process, so the direct impacts from livestock grazing and the release of fecal coliform is not known. Unidentified levels of fecal coliform contamination are probable, both from wildlife and from livestock. Most of the developed spring sources are protected from substantial levels of contamination from livestock by fencing or natural/man-made features where water is then piped to a trough. Overall, impacts to water quality from livestock grazing at protected spring sources is considered nominal because spring sources are protected from direct access by livestock.

4.3.2.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to water resources from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

No water resources are found along the current designated "C" routes; therefore, no impacts to water resources are anticipated as a result of the No Action Alternative.

Under Alternative 2, the seasonal limitations on "C" routes may reduce their use for OHV events, and thus have localized beneficial impacts on water resources in those areas.

Under Alternatives 3, 4, and 5, there are no water resources associated with the areas to the northeast of the Spangler Hills Open Area; the Summit Range plus the area east of Highway 395; and the urban interface area between the community of Ridgecrest and the Spangler Hills Open Area. Therefore, these plan amendments would not have any adverse impacts to water resources.

Under Alternatives 4 and 5, the decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area would be made with appropriate mitigation measures to protect water resources.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds are flat, and are not associated with desert washes. In addition, although the lakebeds can become filled with water, they would not be used by OHVs during times when they are flooded. As a result, OHV use on the lakebeds is not expected to have water resource impacts under any alternative, and this decision would not have any effect on water resources. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes due to its closure under Alternative 2, and to its designation as "OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit" under Alternatives 3, 4, and 5, would be low. As a result, Alternatives 2, 3, 4, and 5 are not expected to have an indirect, adverse impact on water resources by increasing the recreational use of routes in other areas.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Under the No Action Alternative and Alternative 2, the implementation of the permit system in the Rand Mountains-Fremont Valley Management Area would continue. Because no water resources are found along the current designated Rand-Fremont routes system, the system does not directly impact water resources in the area. However, the system may dissuade some users from using the area for recreation, resulting in displacing those users to other routes and areas within the planning area, and water resource impacts may result in those areas. Therefore, neither the No Action Alternative nor Alternative 2 would have a direct adverse or beneficial impact on water resources, but could result in indirect impacts in other areas.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Because no water resources are found along the current system, these alternatives would have no direct adverse or beneficial impact on water resources.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of allowing previously disturbed areas to become re-vegetated over time, and also reduce the amount of new disturbance that would occur, thus reducing direct impacts to desert washes and the potential for erosion that could impact water quality. The effect of these actions is a net beneficial impact to water resources.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce the potential for impacts to desert washes and erosion that could impact water quality, and would thus be more beneficial than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, on-going but localized direct impacts to unprotected water resources would continue at watering sites in active grazing allotments.

Under Alternative 2, similar impacts would continue at watering sites in active grazing allotments. Discontinuing livestock grazing on portions of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments would eliminate direct impacts to water resources in that portion of those allotments.

4.3.2.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that OHVs can have adverse impacts on surface water quality, especially if ground disturbance or fuel releases occur in close proximity to water bodies. The mileage of routes associated with desert washes under each alternative is presented in Table 4.3-2.

Table 4.3-2. Miles of Routes in Proximity to Desert Washes – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
No Action Alternative				
Mileage Parallel to or Predominantly in a Wash	1041.5	0	0	880.0
Alternative 2				

Table 4.3-2. Miles of Routes in Proximity to Desert Washes – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Mileage Parallel to or Predominantly in a Wash	819.6	4.8	7.0	1090.2
Alternative 3				
Mileage Parallel to or Predominantly in a Wash	1477.8	10.2	5.4	428.2
Alternative 4				
Mileage Parallel to or Predominantly in a Wash	1058.0	17.0	7.1	839.6
Alternative 5				
Mileage Parallel to or Predominantly in a Wash	1062.5	11.2	6.5	841.4

Alternative 3 has the greatest potential for impact to desert washes with 436.3 miles more OHV Open and OHV Limited routes than the No Action Alternative. Alternative 2 has the least potential with 221.9 fewer miles of OHV Open and OHV Limited routes than the No Action Alternative. Alternative 5 has an intermediate potential for impact with 21 miles more OHV Open and OHV Limited routes than the No Action Alternative, and 38.6 fewer miles of transportation linear disturbances.

4.3.2.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for water resources that were considered, and that may be implemented, include but are not limited to:

- Re-align route to avoid environmentally sensitive area;
- Harden water crossings;
- Install barriers and maintain existing barriers;
- Remove attractants;
- Install educational information such as signs;
- Install step-over;
- Install fencing;
- Seasonal or complete designation of routes as transportation linear disturbances;
- Monitor the route for signs of increasing impacts to a sensitive resource;
- Determine that no additional minimization or mitigation measure is needed based on site evaluation; and

- Where natural barriers do not exist, exclude livestock by fencing unprotected natural spring sources and other natural sources to protect and maintain water quality where feasible.

Whether they were applied during the route designation process or are mitigation measures, these measures would act to reduce soil compaction, disturbance, or erosion that lead to degradation of water quality. Measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for water quality impacts, as compared to pre-2006 conditions before these limitations were enacted. However, OHV use in washes is currently permitted under the No Action Alternative. Alternatives 2, 3, 4, and 5 would consider OHV use in washes on a case-by-case basis, as opposed to allowing OHV in all washes, which is currently permitted under the No Action Alternative.

4.3.2.6 Residual Impacts After Implementation of Mitigation Measures

Some residual effects in desert wash areas are likely to continue after application of mitigation measures, both with continued OHV use, and following designation of routes as transportation linear disturbances. OHV use in desert washes would continue to create the potential for erosion of those areas. Designation of routes as transportation linear disturbances in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.3.3 Riparian Areas

4.3.3.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the route network evaluated in that EIS with respect to riparian areas and springs. The analysis included a discussion of the effects of OHV use on riparian areas and springs, including identification of specific riparian areas and springs that were impacted by OHV use.

Similar to soil resources, the Court held that the analysis of impacts to specific riparian areas and springs flows from the proposed route network and grazing was inadequate. In addition, the Remedy order (pg. 15) required BLM to implement additional information gathering and monitoring regarding riparian areas, including new proper functioning condition (PFC) assessments for all of the springs and seeps in the WEMO area. Finally, the Court made a general finding, for all resources, that the range of route network alternatives evaluated was inadequate. No other deficiencies were identified in the riparian area analysis in the 2005 WEMO EIS.

The BLM implemented PFC assessments on more than 100 riparian areas and springs throughout the planning area to include grazing allotments. The assessments included areas outside of grazing allotments, as well as assessments associated with Rangeland Health Assessments on active allotments. In addition, BLM completed a comprehensive GIS analysis of all springs, as identified on the National Hydrography Dataset (NHD). This compilation included a review of more than 3.1 million acres, and identified 183 springs on BLM public lands. The assessment identified a total of 152 route features that intersected within a 100-meter buffer of these areas.

BLM has also awarded a contract to the U.S. Fish and Wildlife Service (USFWS) to complete riparian area mapping of 90 quadrangles at a scale of 1:24,000 within the Barstow and Ridgecrest Field Office areas.

4.3.3.2 Impacts Common to All Alternatives

Disturbance of riparian/wetland areas directly reduces available habitat for wildlife species. Additionally, disturbance indirectly reduces wildlife habitat by introducing or spreading invasive plants, which can decrease the diversity and abundance of wildlife species that would otherwise be high in riparian areas. The impacts associated with OHV use and livestock grazing in wetland and riparian areas may range from minor, where they are fenced and have limited visitation, to substantial, where they have no fencing to control OHV access and overnight activities are occurring, taking into consideration access to at-risk or non-functional riparian/wetlands based on PFC criteria. PFC assessments are on-going within the planning area. The vast majority of at-risk or non-functional riparian/wetlands are due to direct impacts from mining activities, private land encroachment and occasionally livestock grazing. Road encroachment typically results in indirect impacts from passing vehicles, unless vehicles leave the road and enter the riparian area in which case the impact is direct.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. In that analysis, riparian resource impacts were considered as a criterion in determining which routes would remain open and which would be designated as transportation linear disturbances under the various alternatives. Riparian area impacts were considered by evaluating route locations with respect to proximity to identified riparian areas and springs, and either placing limitations or designation of routes as transportation linear disturbances that are within 50 feet of a riparian area or 300 feet of a spring. To date, PFC assessments have revealed that vehicle routes have little to no direct impacts to riparian areas with only a few exceptions, such as where they physically lead to the removal of riparian vegetation such as at stream crossings. In addition, the WMRNP alternatives include consideration of stopping and parking distances from routes in order to minimize disturbance in previously undisturbed areas, thus reducing the potential for new impacts to riparian areas. Therefore, minimization of riparian area impacts was a factor both in development of the alternative route networks, and in the specific limitations placed on routes in those networks.

If sensitive, riparian habitat (UPA) is not fenced out or otherwise modified for avoidance, activities such as upstream mining, direct use of water sources by water-rights holders, vehicle use, and cattle (as well as wildlife) grazing activities may (1) dewater riparian areas, (2) result in damaged, trampled and destroyed vegetation, (3) result in utilization of the riparian vegetation, and (4) impact water quality. These direct impacts result in a decrease in vigor or complete elimination of vegetation from the riparian habitat associated with spring sources, where otherwise vegetation would be robust and often unique to the wetter microclimate. Smaller spring sources can also be indirectly impacted by livestock and wildlife hoof action that typically creates divots known as “punching” in wet soils, which can increase erosion and can create poor water quality conditions.

With the exception of the Round Mountain Allotment, developed water sources have been fenced to exclude livestock from riparian areas, including springs. Isolated undeveloped springs and seeps are rarely used and in rough terrain usually not accessible by vehicle to the lessees and therefore are typically not fenced. In the Round Mountain Allotment, most natural sources are not fenced but since the season of use is winter and riparian resources are dormant during that time period, thus reducing their vulnerability to impacts. There are both direct and indirect impacts to riparian resources during this season of use this allotment. During the winter months, cattle do not congregate at water sources because their need for water is less; therefore, this impact to water quality and riparian vegetation is short lived and dissipates after the cattle have been removed at the end of the grazing season.

4.3.3.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to riparian areas from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

No riparian areas are found along the current designated "C" routes or the designated Rand-Fremont routes system; therefore, no impacts to riparian areas are anticipated as a result of the No Action Alternative.

Under Alternative 2, the seasonal limitations on "C" routes may reduce their use for OHV events, and thus have localized beneficial impacts on riparian areas near those routes.

Under Alternatives 3, 4, and 5, there are no riparian areas associated with the areas to the northeast of the Spangler Hills Open Area; the Summit Range plus the area east of Highway 395; and the urban interface area between the community of Ridgecrest and the Spangler Hills Open Area. Therefore, these plan amendments would not have any adverse impacts to riparian areas.

Under Alternatives 4 and 5, the decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area would be made with appropriate mitigation measures to protect riparian areas. PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds are flat, and are not associated with riparian areas. As a result, OHV use of vehicles on the lakebeds is not expected to impact riparian areas under any alternative, and this decision would not have any effect on riparian areas. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes due to its designation as transportation linear disturbance under Alternative 2, and to its designation as "OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit" under Alternatives 3, 4, and 5, would be low. As a result, Alternatives 2, 3, 4, and 5 are not expected to have an indirect, adverse impact on riparian areas by increasing the recreational use of routes in other areas.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Under the No Action Alternative and Alternative 2, the implementation of the permit system in the Rand Mountains-Fremont Valley Management Area would continue. Because no riparian areas are found along the current designated Rand-Fremont routes system, the system does not directly impact riparian areas. However, the system may dissuade some users from using the area for recreation, resulting in displacing those users to other routes and areas within the planning area, and riparian area impacts may result in those areas. Therefore, neither the No Action Alternative nor Alternative 2 would have a direct adverse or beneficial impact on riparian areas, but could result in indirect impacts in other areas.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Because no riparian areas are found along the current system, these alternatives would have no direct adverse or beneficial impact on riparian areas.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of allowing previously disturbed areas to become re-vegetated over time, and also reduce the amount of new disturbance that would occur, thus reducing direct impacts to riparian areas, as well as the potential for erosion that could impact riparian areas. The effect of these actions is a net beneficial impact on riparian areas.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce direct impacts to riparian areas and the potential for erosion that could impact riparian areas. The effect of these actions would be more beneficial on riparian areas located adjacent to the routes outside of DT ACECs than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, sensitive, riparian habitat (UPA) may be impacted if it is not fenced or other avoidance measures implemented. These direct impacts result in a decrease in vigor or complete elimination of vegetation from the riparian habitat associated with spring sources, where otherwise vegetation would be robust and often unique to the wetter microclimate. Smaller spring sources can also be indirectly impacted by livestock and wildlife hoof action that typically creates divots known as “punching” in wet soils, which can increase erosion and can create poor water quality conditions. With the exception of the Round Mountain Allotment, developed water sources have been fenced to exclude livestock from riparian areas, including springs. Isolated undeveloped springs and seeps are rarely used and are located in rough terrain usually not accessible by vehicle to the lessees and therefore are typically not fenced. In the Round Mountain Allotment, most natural sources are not fenced since the season of use is winter and riparian resources are dormant during that time period.

There would be direct impacts to riparian resources during this season of use on this allotment. During the winter months, cattle do not congregate at water sources because their need for water is less; therefore, this impact to water quality and riparian vegetation is short lived and dissipates after the cattle have been removed at the end of the grazing season.

Under Alternative 2, livestock grazing would be discontinued on portions of the Ord Mountain, Cantil Common, and Shadow Mountains Allotments. Due to this action, any direct impacts to riparian habitats located on these allotments would cease.

4.3.3.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that OHVs can have adverse impacts on riparian areas and springs. These impacts are concentrated in those subregions along the Mojave River and along the Sierra Mountain Front, which are areas with higher densities of riparian areas and springs. The mileage of routes associated with riparian areas and springs under each of the alternatives is presented in Table 4.3-3.

Table 4.3-3. Miles of Routes in Proximity to Riparian/Spring Areas – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
No Action Alternative				
Mileage Within 50 Feet of Riparian Area	17.1	0	0.1	30.2
Mileage Within 300 Feet of Spring	2.8	0	0.1	7.6
Alternative 2				
Mileage Within 50 Feet of Riparian Area	15.0	0	0.6	31.8
Mileage Within 300 Feet of Spring	2.0	0	0.1	8.4
Alternative 3				
Mileage Within 50 Feet of Riparian Area	32.4	0	0.6	14.3
Mileage Within 300 Feet of Spring	6.0	0	0.1	4.4
Alternative 4				
Mileage Within 50 Feet of Riparian Area	16.0	0	2.4	29.0
Mileage Within 300 Feet of Spring	3.7	0.1	0.3	6.4
Alternative 5				
Mileage Within 50 Feet of Riparian Area	17.3	0	2.5	27.6
Mileage Within 300 Feet of Spring	3.2	0.2	0.4	6.8

Alternative 3 has the greatest potential for impact to riparian and spring areas with 15 miles more OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 5 has nearly the same potential for impact as the No Action Alternative with 0.2 miles more OHV Open and OHV Limited routes within 50 feet of a riparian area, and 0.4 miles more within 300

feet of a spring. Alternative 2 has the least potential for impact to riparian areas and springs with 2.1 fewer miles of OHV Open or OHV Limited routes within 50 feet of riparian areas and 0.8 fewer miles of OHV Open or OHV Limited routes within 300 feet of springs as compared to the No Action Alternative.

4.3.3.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for riparian areas and springs that were considered, and that may be implemented, include but are not limited to:

- Rehabilitate disturbance;
- Modify access to a less impacting designation;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Install access type restrictor;
- Re-align route to avoid environmentally sensitive area;
- Restrict stopping/parking/camping;
- Add parking area;
- Add or modify hiking trail access;
- Install barriers and maintain or upgrade existing barriers;
- Remove attractants;
- Install educational construct such as installing signs;
- Install step-over;
- Install fencing;
- Narrow route;
- Install/implement erosion prevention Best Management Practices;
- Harden water crossing;
- Seasonal limitation during bird nesting season;
- Monitor the route for signs of increasing impacts to a sensitive resource;
- Determine that no additional minimization and mitigation measure is needed based on site evaluation; and
- Where natural barriers do not exist, exclude livestock by fencing unprotected natural spring sources and other natural sources to protect and maintain water quality where feasible.

Under the No Action Alternative, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside

of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for new impacts to riparian areas, as compared to pre-2006 conditions before these limitations were enacted. Under Alternatives 2, 3, 4, and 5, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and further limiting stopping and parking limits would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for impacts to riparian areas. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific riparian area impacts are considered before authorizing new OHV Open or OHV Limited routes.

4.3.3.6 Residual Impacts After Implementation of Mitigation Measures

Residual effects to riparian areas and springs are likely to continue after application of mitigation measures, both with continued OHV use, and following designation of routes as transportation linear disturbances. Where OHV use is still allowed near riparian areas and springs, the impacts would be reduced from those that would have existed without mitigation measures. However, those vehicles could still disturb and compact soil, and damage vegetation. Designation of routes as transportation linear disturbances in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.4 Biological Resources

Table 4-26 of the 2006 WEMO Plan presented general assumptions regarding the impact of OHV use on wildlife, with a focus on the desert tortoise. These assumptions have been reviewed and revised for the WMRNP, as shown in Table 4.4-1. The major revision is that the general assumptions regarding the impact of OHV use on tortoise are more broadly considered to be applicable to other wildlife, vegetation, and areas designated for their protection, including DT ACECs. Additionally, given that no new routes will be established, existing routes designated as open are subject to avoidance and minimization measures, and that transportation linear disturbances will be subject to restoration; it is anticipated that implementation of the plan will result in a trend away from listing for all BLM Special Status Plant and Wildlife species relative to baseline conditions.

Table 4.4-1. General Assumptions Regarding Impacts of OHV Use on Vegetation, Wildlife, and Areas Specially Designated for their Protection

Category	Assumptions
Desired Results	<p>An overall objective of the transportation network is to designate and implement a route network that would provide for public access, authorized uses, and the following desired results:</p> <ul style="list-style-type: none"> • Fewer losses of tortoises and other wildlife to crushing, poaching, pet collection, intentional vandalism, and similar activities requiring vehicle access. • Less degradation and loss of occupied designated critical habitat (first priority) and occupied suitable habitat (second priority). A third priority would be unoccupied but suitable habitat, especially areas which may serve as climate refugia in the future. • Larger blocks of unfragmented habitat, which would be achieved if vehicle use is reduced and does not result in increased cross-country travel in adjacent areas, and promotes recovery of suitable habitats more quickly than would naturally occur. • Designation of routes as transportation linear disturbances in higher density wildlife areas is likely to provide the most benefit in terms of avoiding mortalities and other losses. • Designation of routes as transportation linear disturbances in lower density wildlife areas would alleviate losses of animals that are critically important to natural repatriation.
Function and Importance of DT ACECs	<ul style="list-style-type: none"> • All public lands in DT ACECs are important for tortoise conservation and recovery, as well as conservation of other vegetation and wildlife species present within the DT ACEC. • Lands that currently support relatively lower tortoise densities for tortoise recovery are also considered important and not only lands supporting relatively higher densities. • DT ACECs are the primary land base on which conservation goals, recovery efforts, and mitigation standards can be achieved. • DT ACECs correspond roughly with designated critical habitat for the desert tortoise and therefore are considered high priority areas for desert tortoise conservation.
Impacts to Wildlife and Vegetation	<ul style="list-style-type: none"> • OHV use in wildlife habitat is assumed to potentially have adverse impacts to species individuals due to vehicle strikes and noise. • Wildlife and vegetation are more likely to be adversely impacted in regions supporting higher densities of OHV Open and OHV Limited routes than in areas of lower route densities. • Vehicle-based impacts are proportionate to the number of existing roads in an area. Both allowed uses (e.g., vehicle use that remains on existing roads) and prohibited uses (i.e., cross-country travel outside BLM Open Areas, dumping, vandalism, collection) are more likely to occur where roads are relatively more common. • If left unchecked, vehicle use in areas of above-average human disturbances would continue to result in loss of wildlife and vegetation, degradation of habitat, and seriously undermine conservation and recovery efforts for sensitive species.

4.4.1 Vegetation Resources

4.4.1.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the route network evaluated in that EIS with respect to natural communities and special status plant species. The analysis included a discussion of the effects of the proposed changes in the OHV network on specific plant species. The Court evaluated the analysis specific to the Barstow woolly sunflower, desert cymopterus, and Mojave monkeyflower, and found that the analysis was sufficient. The Court also evaluated the analysis of OHV use and grazing on the spread of non-native plants, and found that analysis to be adequate. However, the Court’s evaluation of the impact of OHV use on Unusual Plant

Assemblages (UPAs) concluded that there was no discussion of the impact on OHVs on specific UPA areas. The Remedy order (pg. 15) required BLM to implement additional information gathering and monitoring regarding UPAs. Finally, the Court made a general finding, for all resources, that the range of route network alternatives evaluated was inadequate. No other deficiencies were identified in the vegetation analysis in the 2005 WEMO EIS.

4.4.1.2 Impacts Common to All Alternatives

The impacts from OHV use and livestock grazing on native plant communities and individual plant species were summarized by Ouren and others (2007).

Impacts from OHV Use

OHV use has both direct and indirect effects on native vegetation. Direct impacts result from the occupation of land area by the road surface, whether it is asphalt, cement, or compacted soil, which removes that land area as potential habitat for vegetation. This effect can be expanded when OHVs or mechanized vehicles leave the main route, resulting in additional ground disturbance of adjacent areas. This occurs in areas where stopping, parking, or camping activities are allowed, and in route proliferation areas. It can also occur in areas where road conditions have degraded through erosion or overuse, and vehicle operators find it easier to create new disturbance than to continue on the designated route. The severity of the effect on native vegetation is more adverse in areas of rare native plant communities, UPAs, or special status plant habitat.

There are also a variety of indirect effects of OHV use on vegetation. These include:

- Alterations in surface water flow and percolation, especially where the roadbed is not at grade level (Trombulak and Frissell 2000);
- An increase in overall plant height, plant biomass, and foliage arthropods through "water harvesting" adjacent to compacted roadbeds (Johnson et al. 1975, Vasek et al. 1975b), yielding an overall increase in vegetation production (especially problematic in regards to nonnative invasive species), even after considering the denudation of the roadbed;
- Providing a corridor of dispersal for some species of non-native invasive weeds (Trombulak and Frissell 2000), especially those adapted to disturbed lands;
- Changes in the fire ecology in areas due to associated increases in non-native invasive weeds;
- Increased occurrence of fires started by visitors; and
- Deposition of fugitive dust.

OHV routes can serve as corridors by which non-native plant species can more easily invade wildlife habitat. Brooks (1998 in Boorman 1999) found that the number of non-native plant species increase near roads. At least two mechanisms seem to be at work in the process of invasion. First, vehicles may transport seeds of non-native species along routes of travel on their wheels and undercarriages. The existence of a network of routes may result in seeds of invasive plants being carried far from the sites where they were originally introduced. Secondly, many non-native plant species tend to colonize disturbed areas more readily than native species; road

beds and berms along routes of travel are highly disturbed and therefore provide ample opportunity for these species to become established and spread. Some disturbance of soils adjacent to routes of travel likely occurs. Such disturbance can be caused by routine maintenance, drivers leaving the roadbed to pass another vehicle or to avoid a wet or sandy area, and recreation users pulling off routes of travel to camp or park; unauthorized cross-country travel that is facilitated by routes of travel also contributes to soil disturbance.

Disturbance of soils can accelerate the spread of invasive non-native plant species by destruction of soil crusts and cryptogams. These non-native species, in turn, can out-compete the native plant species (Lovich and Bainbridge 1999); non-native species are often better competitors than native species and may reduce the abundance of important forage plants. Generally, the relatively few species of non-native plants do not contain the variety of nutrients that wildlife obtains from native plants; over time, this decrease in available nutrients may place wildlife under physiological stress.

Most observations such as those described in the previous paragraphs have been describing the result of cross-country travel or heavy use of roads. However, regarding "light" use by vehicles, Boarman (1999) notes that "very little data are available to evaluate those impacts" because most studies have been conducted in areas of heavy use. Boarman (1999) acknowledges that light use can affect habitat but that "very light, basically non-repeated vehicle use probably has little long-term impact."

OHV use can also impact vegetation adjacent to routes by releasing fugitive dust. Fugitive dust can settle on plant foliage, resulting in reducing plant growth rates, size, and survivorship (Ouren and others 2007).

OHV use can create edge effects which impact the ecology adjacent to the routes. Compaction of soil on the route itself results in an increase in precipitation runoff directly adjacent to the route, which can lead to greater plant growth directly along the edges of routes (Ouren and others 2007). This may not necessarily be beneficial for vegetation. The increase in water could make these areas susceptible to non-native vegetation, or could attract wildlife into the area near the route, where they could be more at risk for vehicle strikes.

Similar impacts, including disturbance or compaction of soils and damage to vegetation can occur due to the presence of spectators at competitive events. Although OHVs associated with the spectators would be restricted to established staging areas and within allowable stopping and parking distances, foot traffic from the spectators outside of these areas could also result in soil disturbance, compaction, and damage to plants.

Several annotated bibliographies address the effects of roads on vegetation and natural communities; among these are Ouren and others 2007; Boarman 1999, Rowland 1980, and Spellerberg and Morrison 1989. Trombulak and Frissell (2000) reviewed the literature on ecological effects of roads, and Lovich and Bainbridge (1999) reviewed a variety of degrading activities, including roads. These bibliographies and literature reviews elaborate on the effects listed above, provide additional publications, and describe other effects of roads. The compaction and loss of vegetation that has already occurred on the more heavily used roadbeds as a result of past route use may prevent natural re-vegetation of native species consistent with the surrounding area. Therefore, designating heavily used routes of travel as OHV Open or OHV Limited routes may have minor direct effects to the vegetation, at least in the RFF, because impacts on these routes have already occurred and are likely to continue, even if the route is

designated as a transportation linear disturbance. The horizon for natural re-vegetation of these routes is anticipated to be substantially beyond the planning horizon in most cases, but can be greatly shortened with the application of active re-vegetation efforts. However, indirect effects from the use of these routes would decrease if the routes were designated as transportation linear disturbances even in the absence of restoration.

Vegetation impacts were considered in the development of alternative goals and objectives, in designation of individual routes, and in defining specific implementation parameters. Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. The goals and objectives developed for Alternative 2 focus on enhancing sensitive resource values and areas, including threatened and endangered species as well as other sensitive biological and non-biological landscape factors, and managing access to de-emphasize casual multiple-use OHV and mechanized touring. In contrast, the goals and objectives for Alternative 3 focus on meeting the diverse transportation, access, and recreational needs of the public, and managing access to emphasize casual multiple-use OHV and mechanized touring.

Vegetation impacts were also considered by evaluating route locations with respect to DT ACECs, ACECs, CDNCLs, DCH, national monuments, and other identified habitat features. In addition, the WMRNP alternatives include consideration of stopping and parking distances from routes in order to minimize disturbance in previously undisturbed areas, thus reducing the potential for new impacts to vegetation. Therefore, minimization of impacts to vegetation was a factor both in development of the alternative route networks, and in the specific limitations placed on routes in those networks.

In the context of the entire Mojave Desert, the WEMO Plan connects to public lands in the Inyo, Sequoia, Angeles and San Bernardino National Forests. New conservation near the latter two Forests includes the linkage to the Poppy Preserve, the Big Rock Creek Conservation Area, and the Carbonate Endemic Plants ACEC. The linkages within Los Angeles County would prevent future isolation of the Poppy Preserve and Saddleback Buttes State Park. The WEMO Plan adjoins the Coachella Valley Multiple Species Habitat Conservation Plan near Morongo Valley, and land uses in this area are compatible with both habitat linkages and protection of species in common to the two plans (triple-ribbed milkvetch and Little San Bernardino Mountains linanthus). The WEMO Plan recognized the impacts from recreation and route designation to native plant communities, and concluded that impacts of recreation and route designation to native plant communities are primarily cumulative in nature. Some species are more sensitive to route specific impacts because of their very limited distribution. However, most of the more intensively used OHV Open areas are within the creosote bush scrub, desert wash and saltbush scrub communities. Riding on playas is also popular and may impact the adjacent alkali sink scrub vegetation. In remote or mountainous areas, most travel is confined to roads, so that the woodland communities (Joshua tree woodland, scrub oak, pinyon pine woodland, juniper woodland) suffer relatively fewer direct vehicle impacts.

Outside of the OHV Open Areas, habitat fragmentation is an issue in other areas with a large number of routes, depending to some extent on the frequency of use. This fragmentation is exacerbated in areas with substantial route proliferation. Of the five alternatives evaluated in this

SEIS, Alternative 3 would result in the greatest increase in OHV Open and OHV Limited routes within sensitive biological areas, and therefore would have the greatest potential for impacts to sensitive biological resources. The No Action Alternative would result in the greatest potential impact to habitat outside of DT ACECs, and Alternative 3 would result in the greatest potential impact to habitat within DT ACECs, based on area-wide potential for disturbance.

Alternative 2, by designation of the largest mileage of routes as transportation linear disturbances and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to biological resources over the long-term. All alternatives include an immediate strategy of signing routes designated as transportation linear disturbances and providing educational information for the public, which will result in a moderate level of compliance of the route network. The rate of active designation of routes as transportation linear disturbances anticipated is similar for all alternatives, so active disturbances would not vary substantially by alternative in the RFF. Alternative 2 is anticipated to reduce and displace overall use to outside DT ACEC and MGS habitat to some degree, but is also likely to result in an increased intensity of use on the remaining network in these areas. Other alternatives are likely to change the balance between use and intensity in these sensitive areas. In other ACECs and CDNCLs, use and intensity of use is not anticipated to substantially change.

Where OHV Open and OHV Limited routes exist, the contribution to cumulative biological impacts in sensitive areas would still be adverse. Providing additional opportunities in less sensitive areas and directing recreational and commercial activities to OHV Open Areas and the less sensitive areas mediates the cumulative impacts but does not eliminate them. When placed in context of other developments within the West Mojave, including land development, mining and recreational use of habitat lands, as well as the beneficial effects of WEMO management strategies, additional Wilderness designation, enhanced protection of sensitive habitat on Fort Irwin, and 2016 DRECP LUPA strategies, the reduction in surface disturbance by measures to manage, enforce, and restore routes impacting vehicle-sensitive species would be beneficial under all alternatives. In the long-term, Alternative 3 does not directly benefit the species in DT ACECs as well as the No Action Alternative, which is an adverse impact to natural communities.

Impacts from Livestock Grazing - Upland Vegetation and Upland UPAs

The utilization by livestock and wildlife species on upland vegetation and potentially upland UPAs for forage directly impacts vegetation in a number of ways. Key forage plant species for livestock consumption are palatable species that may be utilized frequently, when available, as forage. Grazing utilization measures the proportion of degree of the current years forage production that is consumed or destroyed by livestock (ITR-Utilization Studies 1996). Utilization of key species during the critical growing period, typically spring may prevent formation of a seed-head and dissemination of seed. If this occurs year after year to the same population of forage species, a negative impact to recruitment occurs. If high levels of utilization occur to a given population of forage species, those plants have less leaf area to absorb sunlight, produce lower levels of carbohydrates, and expend a considerable amount of energy on re-growth. This type of scenario results in poor plant vigor, lower abundance, and poor age-class distribution. As previously mentioned, forage utilization, plant vigor, abundance and age-class distribution of key species are generally more intensely impacted around water sources or high-use facilities due to constant soil compaction from trampling and continual cropping of vegetation from cattle and horses. The over utilization of desirable native vegetation

by livestock can also allow for the establishment on non-native plant populations. Direct impacts to resource conditions adjacent to water developments are expected, and the area impacted will vary in size. These types of negative impacts have occurred in portions of West Mojave allotments where the Native Species Standard is not being achieved.

Areas that have been affected by other habitat disturbing factors are more vulnerable to impacts from livestock and vehicles. In particular, wildfire may result in closure of areas for multiple years to allow vegetative reproduction and return of native communities. Under indirect effects, those areas identified as not achieving the Native Species Standard may be subject to a livestock grazing deferment in the spring and fall grazing during the critical growing periods. BLM anticipates slow, but positive progress towards improvement of degraded native plant communities as a result of this corrective management action and reverse the downward trend in rangeland health. This deferment from grazing during the critical growing period for native species is anticipated to favor recruitment, vigor and enhance species diversity in native plant communities previously degraded by past grazing practices in portions of the allotment. Desert tortoises prefer certain native annual forbs over non-native annual forbs (Jennings 1997). BLM has not inventoried for these annual native species, so their abundance on West Mojave allotments is unknown; however, under all alternatives native annual forbs located in the “deferment areas” would have the opportunity to germinate, grow and disseminate seed.

The additional changes in grazing practice as described in the 2006 WEMO Plan are anticipated to make progress toward achievement of the Native Species Standard by reducing the utilization thresholds from 40% to as low as 25% on select key species allotment wide which would allow for greater leaf area to absorb sunlight. This improves plant vigor and production, and reduces the contribution of grazing to vegetation impacts. There are two other grazing operational prescriptions contained in the 2006 WEMO Plan that would not authorize ephemeral portion of the perennial/ephemeral authorization and would not authorize temporary non-renewable (TNR) use, regardless of production. These provisions would further reduce use of forage species on the allotments in more productive years, providing for very high recruitment and increased vigor.

The 2006 WEMO grazing prescription that requires exclusion from portions of select allotments when ephemeral production is less than 230 lbs/acre has a beneficial impact to the vegetation that is excluded from grazing during those seasons. This would minimize impacts to reproduction and plant growth during these poorer production years. However, already stressed vegetation in portions of the allotment where grazing would be allowed may suffer from slightly higher levels of utilization, which in turn can mean lower or no reproduction and poorer plant vigor during those growing seasons, unless stocking rates are appropriately adjusted.

Natural climate fluctuations can also have a significant effect on desert vegetation, but not all desert natives are consistently affected by these fluctuations. Beatley (1980) concluded that most of the living plants in the Mojave Desert in 1963 were still present when she re-measured her plots in 1975. An additional 20-30% of the plants measured in 1975 were new, and total cover had increased as a result of high rainfall in the late 1960s. Beatley concluded that the size and cover of woody perennial plants in the Mojave Desert are strongly correlated with precipitation.

The period between 1975, when Beatley last measured the plots, and 2000 had several climatic extremes. The period of 1977-1984 was one of the wettest periods of the 20th century, and extreme droughts occurred in 1989-1991 (Hunter, 1994), 1996, and 1999. Many shrubs died during these years, making droughts a major mechanism for change in Mojave Desert

ecosystems. Despite the droughts, the increase in biomass between 1963 and 2000 is striking. Associations dominated by creosote bush (*Larrea tridentata*) had large increases in the sizes of individual plants as well as increases in total cover. Some blackbrush assemblages, in contrast, lost total cover, probably as a result of the droughts, reflecting the significant differences in drought tolerance between various native species of the desert. Some non-native species such as red brome (*bromus madritensis*, ssp. *rubens*) can be extremely hardy during drought periods, and during those periods readily outcompete native species (Monitoring Of Ecosystem Dynamics In The Mojave Desert: The Beatley Permanent Plots, USGS Fact Sheet 040-01, Webb, Robert H, et al.).

Special Status Plants

Implementation of the actions in the WMRNP SEIS would result in direct and indirect impacts, both adverse and beneficial, to several special status plant species addressed in this Plan. The beneficial, direct impacts include the establishment of large, unfragmented habitat blocks, strategies to block up public lands in those areas, measures to minimize disturbance impacts to conserved lands and measures addressing unique components of diversity, such as endemic species, disjuncts and habitat specialists.

Most special status plants are locally distributed in distinct areas, although new populations are occasionally identified. Generally, projects are designed to avoid concentrations of these species. The WMRNP is not authorizing new disturbance to the planning area. No direct impacts are anticipated to plants or habitats, because only routes that have existing disturbance are legally permissible to use. There could be indirect impacts if unauthorized use occurs. In addition, camping, parking and stopping are also only authorized in areas with existing disturbance. In most cases, concentrations of special status plants or UPAs are withdrawn or otherwise protected from development and grazing. Areas identified for protection of special status plants are not authorized for grazing, unless their distribution makes fencing impracticable. Cattle generally do not prefer to graze BLM special status plant species because they often occur in unique habitats, such as rocky, mountainous habitats, where the potential for grazing is low. In addition, the potential for livestock to trample BLM special status plants is low because livestock are not concentrated where special status plant populations exist.

Invasive, Non-Native Species

The management of invasive, non-native plant species and noxious weeds is often challenging, and depending on the extent of an infestation and the life form of a weed species, may not always be preventable. The differences between the term noxious weeds and invasive, non-native plant species are based on Federal and State agricultural laws. Noxious weeds are also invasive, non-native plant species but have been determined by Federal and State agricultural agencies to fit the following definition and are placed on the Federal and State Noxious Weed lists. Noxious weeds are defined as follows: A noxious weed or injurious weed is a weed that has been designated by an agricultural authority as one that is injurious to agricultural or horticultural crops, natural habitats or ecosystems, or humans or livestock. Most noxious weeds have been introduced into an ecosystem by ignorance, mismanagement, or accident. Some noxious weeds are native. Several State listed noxious weed species like Russian thistle occur within the West Mojave Planning Area.

Invasive species colonization/infestation can occur as a result of direct spread of seeds and/or plant parts that are stressing native plant communities and habitat. Surface disturbances and the loss of native vegetation often facilitate the colonization of invasive, non-native plant species and noxious weeds, which if not properly managed can out compete many native species for limited water and nutrients in the harsh Mojave Desert. Natural wind conditions in the desert, non-native plantings, wildfire, vehicle use, and the presence of livestock and wildlife can directly spread the seeds of invasive and noxious weed species. Mechanisms for spread include airborne-spread seeds, seeds sticking to vehicles or to the hides of animals, and deposition of seed through livestock and wildlife digestive systems (Belsky 2000). Historically, non-native plantings by rural residents and project managers, often as windbreaks, have been major contributors to non-native species spread. Current practices prohibit such plantings on authorized projects, but seeds may still be spread by the use of equipment and vehicles on site. Similar spread of weed seeds is associated with OHV use as described in previous sections. Wildfire recovery efforts continue to be a major source of introduction of invasive, non-native species. Post-fire rehabilitation efforts provide for some level of native planting or seeding to encourage native species to more quickly be reestablished. Projects which authorize disturbances create conditions that can encourage invasive, non-native species colonization. These species can then spread far beyond the project boundaries. These project impacts are minimized by the use of best management practices, such as specific plantings of native species, and treating weed populations with herbicide applications. Some weed populations are so wide spread that management of those populations is just not practical, filaree is a good example.

The extent to which poor grazing practices contribute to the spread of non-native invasive species on the West Mojave allotments is unknown. However, some grazing practices like overgrazing may reduce the diversity and reproductive abilities of native, desert plant communities (Boarman 1999). This in turn promotes the establishment and spread of non-native invasive species that now occupy habitat once primarily inhabited by native species, because poor grazing practices degrade palatable native plant species resulting in reducing its ability to reproduce, poor plant vigor, poor age class distribution and lower overall productivity. This allows highly aggressive non-native herbaceous plants to invade habitat occupied by stressed native species or habitat once occupied by native species.

The West Mojave allotments that authorize year-long continuous use, often grazing the same area at the same time, year after year, may have contributed to a transition of the native herbaceous ground cover to invasive and non-native species over portions of the West Mojave allotments and are primarily annuals. This is also the case in areas that serve as corral facilities for livestock and wild horse and burro distribution and collection. The lack of periodic rest for native species in these areas contributes to habitat more vulnerable to invasion by non-natives. The palatability of nonnative versus native plant species to livestock varies based the species and their phenological stage. Overall, livestock prefer native forbs over non-native forbs; however, non-natives annual forbs typically germinate earlier in the growing season and are generally grazed in an earlier phenology stage than natives which can in some years favor native forbs in the production of seed into the seed bank. Depending on density, the utilization of native forbs can be lower than utilization levels of non-native forbs because native forbs are most palatable when there is the highest level of forage diversity available to the cattle.

4.4.1.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to vegetation resources from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Under the No Action Alternative, impacts may occur to vegetation as a result of OHV use in these areas on remaining available routes despite adopted measures, including fencing, oversight, and measures to increase public information.

Under Alternative 2, the seasonal limitations on “C” routes may reduce their use for OHV events, and thus have localized beneficial impacts on vegetation in those areas.

Alternatives 3, 4, and 5 could potentially impact the suspected Red Rock Poppy occurrence south of the Spangler Hills Open Area.

The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area under Alternatives 4 and 5 would be made with appropriate mitigation measures to protect vegetation.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds are unvegetated, and are not associated with sensitive vegetation communities, special-status plants, or UPAs on the lakebeds; however, lakebed edges may be associated with such communities. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could affect vegetation on these lakebeds.

Under Alternative 2, impacts to vegetation at Koehn dry lake would cease, because Koehn dry lake would be OHV Closed use. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes would be low, and Alternative 2 is not expected to have an indirect, adverse impact to vegetation by increasing the recreational use of routes in other areas. Under Alternative 2, Coyote dry lake and Cuddeback dry lake would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and there would be no change in impacts to vegetation at those locations.

Under Alternatives 3, 4, and 5, vegetation impacts at Koehn dry lake would be substantially reduced as compared to the No Action Alternative, because Koehn dry lake would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”. However, vegetation impacts would still be higher than those associated with Alternative 2. Under Alternatives 3, 4, and 5, Coyote dry lake and Cuddeback dry lake would be OHV Open use. While this plan amendment decision would not increase the overall recreational use of routes, it may transfer recreational use to areas with sensitive vegetation communities, special-status plants, or UPAs. Therefore, this decision may result in increased vegetation impacts in the local area of Coyote dry lake and Cuddeback dry lake.

Under all alternatives, Chisholm Trail dry lake would remain OHV Closed use, so there would be no change in impacts to vegetation.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

The species Clokey's cryptantha and Red Rock Poppy occur within the Rand Mountains-Fremont Valley Management Area. In addition, two UPAs, the Salt and Brackish Water Marshes Vegetation and the Desert Saltbrush Assemblage, occur within the area.

Under the No Action Alternative and Alternative 2, the implementation of the permit system in the Rand Mountains-Fremont Valley Management Area would continue. Impacts to vegetation may occur as a result of OHV use on remaining available routes, despite adopted measures, including fencing, oversight, and measures to increase public information prior to use of routes in the area.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV access to the Rand Mountains would be eliminated. Not requiring a visitor to complete an educational orientation program before visiting an area may result in an adverse impact to vegetation if the visitor is unaware of the special resources within the particular area. These impacts may be overcome through other educational mediums and materials such as kiosks and brochures.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of allowing previously disturbed areas to become re-vegetated over time, and also reduce the amount of new disturbance that would occur, thus reducing direct impacts to vegetation. The effect of these actions is a net beneficial impact to vegetation resources.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce the potential for direct impacts to vegetation, and would thus be more beneficial than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, on-going but localized direct impacts to vegetation would continue in active grazing allotments.

Under Alternative 2, similar impacts would continue at watering sites in active grazing allotments. Discontinuing livestock grazing on portions of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments would eliminate direct impacts to vegetation in that portion of those allotments. This reduction in grazing use of 115,106 acres would have a direct, beneficial impact on upland vegetation, UPAs, special-status plants, and native plants and native plant communities in the Western Mojave Desert.

4.4.1.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that OHVs can have adverse impacts on vegetative communities, special status plant species, and UPAs. Adverse impacts would primarily occur directly through removal of vegetation, soil disturbance, and disturbance of hydrology, and would therefore be focused in areas on or adjacent to OHV Open and OHV Limited routes. Indirect impacts to these resources could also occur due to the spread of invasive plants. Again, these impacts would be focused close to the routes, although they could spread to adjacent areas. The mileage of routes associated with vegetative communities, special status plant species, and UPAs under the No Action Alternative is presented in Tables 4.4-2, 4.4-3, and 4.4-4, respectively.

The carbonate endemic plant species are mostly within the Bighorn subregion for route designation. The routes within the habitat have been designated as limited, with OHV use restricted to claimholders, landowners and authorized persons. The terrain generally prevents off-road travel, and use of these roads is infrequent. The mileage of designated routes within the Carbonate Endemic Plants Research Natural Area under each alternative is discussed in Section 4.11.

Table 4.4-2. No Action Alternative – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ¹ (Acreage)
Arizonan upland Sonoran desert scrub	1.6	2.8	54.8
California annual forb/grass vegetation	4.2	9.5	91.3
California naturalized annual and perennial grassland	1.7	5.7	113.6
Californian evergreen coniferous forest and woodland	32.0	101.7	1342.6
Californian mesic chaparral	46.9	87.7	2196.4
Californian pre-montane chaparral	0	1.1	0
Californian warm temperate marsh/seep	0	0.1	0
Californian xeric chaparral	1.2	18.7	70.8
Central and South Coastal California seral scrub	0.2	0.1	12.1
Central and South Coastal Californian coastal sage scrub	18.2	60.5	972.1
Desert Playa	54.1	20.6	3755.4
Developed	<0.1	0.3	8.3
Great Basin cool semi-desert alkali basin	4.8	2.7	63.5
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0.6	13.4	25.6
Intermontane deep or well-drained soil scrub	106.6	196.1	4501.5
Intermontane seral shrubland	9.5	13.9	437.1

Table 4.4-2. No Action Alternative – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping¹ (Acreage)
Lower bajada and fan Mojavean-Sonoran desert scrub	4180.9	6952.2	135410.8
Mediterranean California naturalized annual and perennial grassland	4.2	13.7	106.2
Mojave and Great Basin upper bajada and toeslope	538.3	1253.45	16295.9
Mojavean semi-desert wash scrub	130.4	122.0	2772.1
North American warm desert alkaline scrub and herb playa and wet flats	58.8	70.8	1886.9
North American warm desert bedrock cliff and outcrop	85.5	76.9	3665.4
North American warm desert dunes and sand flats	2.5	4.8	129.0
Not Mapped	106.7	138.6	3323.6
Shadscale-saltbush cool semi-desert scrub	18.5	27.8	883.2
Sonoran-Coloradan semi-desert wash woodland/scrub	46.6	47.5	797.3
Southern Great Basin semi-desert grassland group	0.2	0.2	1.9
Southwestern North American introduced riparian scrub	2.7	2.1	89.1
Southwestern North American riparian evergreen and deciduous woodland	11.9	24.55	247.9
Southwestern North American riparian, flooded and swamp forest/scrubland	0	0.5	0
Southwestern North American riparian/wash scrub	<0.1	0.3	2.1
Southwestern North American salt basin and high marsh	182.9	160.6	4561.4
Western Great Basin montane conifer woodland	54.3	97.0	1785.4
Western Mojave and Western Sonoran Desert borderland chaparral	<0.1	0.8	9.8

1 – Stopping/Parking/Camping acreage represents the maximum potential disturbance by routes if the entire allowable stopping/parking/camping distance is disturbed. The percentage of actual use in these areas is expected to be much lower.

Table 4.4-3. No Action Alternative - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Barstow Woolly Sunflower	8.2	9.6	303.8
Beaver Dam Breadroot	26.2	40.6	542.3
Big Bear Valley Woollypod	3.4	0.7	40.8
Boyd's Monardella	0.2	0.5	2.0
California Alkali Grass	0.8	1.9	8.9
Chaparral Sand-verbena	<0.1	0.1	0.1
Charlotte's Phacelia	2.5	5.9	74.5
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	3.9	13.8	149.0
Creamy Blazing Star	18.7	13.8	298.4
Curved-pod Milk-vetch	1.9	1.9	115.1
Cushenbury Buckwheat (CNDDDB)	1.2	0.5	19.0
Cushenbury Buckwheat (Critical Habitat)	1.2	1.0	10.8
Cushenbury Milk Vetch (CNDDDB)	0.7	0.4	12.4
Cushenbury Milk Vetch (Critical Habitat)	3.4	2.6	50.7
Cushenbury Oxytheca (CNDDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Death Valley Sandpaper Plant	5.0	13.6	358.4
Dedecker's Clover	0	0	0
Desert Cymopterus	2.9	1.6	62.4
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	<0.1	0.2	3.0
Hall's Daisy	0	0	0
Harwood's Eriastrum	0.1	0	3.1
Horn's Milk-vetch	1.6	<0.1	0
Kelso Creek Monkeyflower	2.9	2.7	36.7
Kern Buckwheat	0.5	0.3	5.8
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0.1	7.9
Lane Mountain Milk Vetch (CNDDDB)	5.5	10.8	119.1
Lane Mountain Milk Vetch (Critical Habitat)	24.5	70.6	447.8
Latimer's Woodland Gilia	0.9	1.0	63.2
Little San Bernardino Mountains Linanthus	2.2	2.1	34.6
Mojave Menodora	73.7	177.3	926.3
Mojave Monkeyflower	10.8	13.9	391.1

Table 4.4-3. No Action Alternative - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Mojave Tarplant	0.1	1.2	4.9
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0	0.1	0
Owen's Peak Lomatium	0	0.3	0
Owens Valley Checkerbloom	71.9	71.7	941.8
Pale-Yellow Layia	0.1	0.1	0.7
Palmer's Mariposa-lily	9.8	5.9	494.9
Parish's Daisy (CNDDDB)	1.9	0.8	40.4
Parish's Daisy (Critical Habitat)	4.4	3.1	52.2
Parish's Phacelia	3.1	10.3	122.1
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	16.2	33.2	863.9
Red Rock Canyon Monkeyflower	9.6	26.8	161.9
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0	0.4	0
Robison's Monardella	0	1.7	0
Rose-flowered Larkspur	0	0.7	0
San Bernardino Aster	0	0	0
San Bernardino Milk-vetch	7.7	5.2	131.0
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	0.3	1.8	4.1
Short-joint Beavertail	0	1.0	0
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	0.1	0.1	5.1
Triple-ribbed Milk-vetch	0.4	0.2	7.1
White-bracted Spineflower	1.4	6.2	69.8
White-margined Beardtongue	13.2	6.5	336.0

1 - The inclusion of multiple CNDDDB GIS data layers likely results in an overestimate, which is a conservative approach with respect to acres potentially impacted for a number of plant species.

2 - Acreage and mileage were calculated using CNDDDB buffers.

Table 4.4-4. No Action Alternative - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	20.6	39.9	302.8
I B 3 Kelso Valley Oak Woodland Assemblage	<0.1	17.0	7.8
I D 2 Desert Saltbush Assemblage	874.0	1247.5	17202.6
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	4.5	8.8	142.3
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	11.9	8.3	715.8
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	40.9
III B 4 Palm Oases Vegetation	4.3	3.0	54.0
IV A 5 Mojave Sink Desert Willow Assemblage	2.8	6.9	207.8
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	293.1	879.2	8500.3
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	56.9	43.0	963.4

The mileage of routes associated with vegetative communities, special status plant species, and UPAs under Alternative 2 is presented in Tables 4.4-5, 4.4-6, and 4.4-7, respectively.

Table 4.4-5. Alternative 2 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Arizonan upland Sonoran desert scrub	1.6	2.8	20.7
California annual forb/grass vegetation	2.6	11.2	29.0
California naturalized annual and perennial grassland	2.1	5.3	24.9
Californian evergreen coniferous forest and woodland	44.5	89.2	528.0
Californian mesic chaparral	57.0	77.6	668.8
California pre-montane chaparral	1.1	0	13.9

Table 4.4-5. Alternative 2 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Californian warm temperate marsh/seep	0	0.1	0
Californian xeric chaparral	3.2	16.6	31.5
Central and South Coastal California seral scrub	0.2	0.1	2.4
Central and South Coastal Californian coastal sage scrub	27.6	51.1	316.9
Desert Playa	55.8	18.9	670.8
Developed	0.1	0.1	1.8
Great Basin cool semi-desert alkali basin	5.2	2.3	62.3
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0	13.9	0
Intermontane deep or well-drained soil scrub	75.8	226.9	913.6
Intermontane seral shrubland	6.6	16.7	71.8
Lower Bajada and Fan Mojavean-Sonoran desert scrub	3651.4	7480.8	42862.9
Mediterranean California naturalized annual and perennial grassland	4.4	13.5	38.0
Mojave and Great Basin upper bajada and toeslope	500.8	1290.9	5962.7
Mojavean semi-desert wash scrub	88.2	164.6	981.2
North American warm desert alkaline scrub and herb playa and wet flats	37.4	92.2	460.3
North American warm desert bedrock cliff and outcrop	76.6	85.7	914.8
North American warm desert dunes and sand flats	2.5	4.8	30.2
Not Mapped	99.2	146.1	1057.3
Shadscale-saltbush cool semi-desert scrub	9.9	36.4	119.2
Sonoran-Coloradan semi-desert wash woodland/scrub	37.1	56.9	408.4
Southern Great Basin semi-desert grassland group	0.2	0.2	1.9
Southwestern North American introduced riparian scrub	2.6	2.5	29.4
Southwestern North American riparian evergreen and deciduous woodland	10.5	26.0	122.8
Southwestern North American riparian, flooded and swamp forest/scrubland	0	0.5	0
Southwestern North American riparian/wash scrub	<0.1	0.3	0.3

Table 4.4-5. Alternative 2 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Southwestern North American salt basin and high marsh	140.8	202.7	1635.4
Western Great Basin montane conifer woodland	70.5	80.7	838.12
Western Mojave and Western Sonoran Desert borderland chaparral	1.6	2.8	20.7

Table 4.4-6. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Barstow Woolly Sunflower	5.0	12.7	59.6
Beaver Dam Breadroot	27.1	39.8	313.1
Big Bear Valley Woollypod	3.4	0.7	40.8
Boyd's Monardella	0.2	0.5	2.0
California Alkali Grass	0.8	1.9	8.9
Chaparral Sand-verbena	0	0.1	0
Charlotte's Phacelia	4.3	4.1	52.1
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	6.2	11.5	73.7
Creamy Blazing Star	17.3	15.2	203.0
Curved-pod Milk-vetch	1.8	1.9	21.3
Cushenbury Buckwheat (CNDDDB)	1.2	0.5	14.4
Cushenbury Buckwheat (Critical Habitat)	1.2	1.0	14.6
Cushenbury Milk Vetch (CNDDDB)	0.7	0.4	8.7
Cushenbury Milk Vetch (Critical Habitat)	3.4	2.6	40.8
Cushenbury Oxytheca (CNDDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Death Valley Sandpaper Plant	5.8	12.8	69.7
Dedecker's Clover	0	0	0
Desert Cymopterus	2.2	2.4	25.4
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	0.1	0.1	1.3

Table 4.4-6. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Hall's Daisy	0	0	0
Harwood's Eriastrum	0.1	0	1.1
Horn's Milk-vetch	0	1.6	0
Kelso Creek Monkeyflower	2.3	3.3	27.6
Kern Buckwheat	0.6	0.2	7.1
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0.1	1.8
Lane Mountain Milk Vetch (CNDDDB)	3.8	12.5	46.2
Lane Mountain Milk Vetch (Critical Habitat)	18.2	76.9	215.1
Latimer's Woodland Gilia	0.1	1.8	1.6
Little San Bernardino Mountains Linanthus	2.9	1.4	33.4
Mojave Menodora	64.0	187.1	766.5
Mojave Monkeyflower	8.7	16.0	101.9
Mojave Tarplant	0	1.2	0
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0.1	0	1.2
Owen's Peak Lomatium	0.3	0	3.5
Owens Valley Checkerbloom	47.9	95.7	573.8
Pale-Yellow Layia	0.1	0.1	0.7
Palmer's Mariposa-lily	10.8	4.8	126.8
Parish's Daisy (CNDDDB)	1.7	1.0	19.6
Parish's Daisy (Critical Habitat)	4.0	3.4	48.4
Parish's Phacelia	3.5	10.0	39.3
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	9.7	39.7	111.9
Red Rock Canyon Monkeyflower	8.7	27.7	103.3
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0.3	0.1	2.5
Robison's Monardella	0.6	1.1	6.9
Rose-flowered Larkspur	0.7	0	8.9
San Bernardino Aster	0	0	0
San Bernardino Milk-vetch	8.8	4.0	104.3
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	0.6	1.5	7.5
Short-joint Beavertail	0.2	0.8	2.6
Sweet-smelling Monardella	0	0	0

Table 4.4-6. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Tehachapi Monardella	0.1	0.1	1.0
Triple-ribbed Milk-vetch	0.6	0.1	7.3
White-bracted Spineflower	2.3	5.3	27.5
White-margined Beardtongue	9.7	10.0	115.9

1 - The inclusion of multiple CNDDDB GIS data layers likely results in an overestimate, which is a conservative approach with respect to acres potentially impacted for a number of plant species.

2 - Acreage and mileage were calculated using CNDDDB buffers.

Table 4.4-7. Alternative 2 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	22.8	37.7	273.0
I B 3 Kelso Valley Oak Woodland Assemblage	1.0	16.0	12.6
I D 2 Desert Saltbush Assemblage	680.3	1440.6	7921.5
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	3.4	9.8	41.5
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	11.0	9.1	130.2
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	7.0
III B 4 Palm Oases Vegetation	6.1	1.2	67.8
IV A 5 Mojave Sink Desert Willow Assemblage	2.8	6.9	33.5
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	287.5	884.8	3305.4
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	61.9	38.0	724.1

The mileage of routes associated with vegetative communities, special status plant species, and UPAs under Alternative 3 is presented in Tables 4.4-8, 4.4-9, and 4.4-10, respectively.

Table 4.4-8. Alternative 3 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Arizonan upland Sonoran desert scrub	9.2	4.6	150.3
California annual forb/grass vegetation	6.6	0.9	125.3
California naturalized annual and perennial grassland	92.2	41.5	1724.3
Californian evergreen coniferous forest and woodland	106.6	28.1	1934.2
Californian mesic chaparral	1.1	0	27.8
California pre-montane chaparral	0	0.1	0
Californian warm temperate marsh/seep	17.5	2.4	314.4
Californian xeric chaparral	0.2	0.1	4.6
Central and South Coastal California seral scrub	61.7	17.0	1205.5
Central and South Coastal Californian coastal sage scrub	74.0	0.7	1705.8
Desert Playa	0.3	0	5.5
Developed	7.5	0	89.2
Great Basin cool semi-desert alkali basin	0.3	13.6	7.3
Inter-Mountain West mesic tall sagebrush shrubland and steppe	194.5	108.2	3392.1
Intermontane deep or well-drained soil scrub	14.6	8.7	282.1
Intermontane seral shrubland	7561.9	3570.8	121465.8
Lower Bajada and Fan Mojavean-Sonoran desert scrub	9.3	8.6	126.4
Mediterranean California naturalized annual and perennial grassland	1216.9	574.7	19679.8
Mojave and Great Basin upper bajada and toeslope	181.4	71.1	2459.3
Mojavean semi-desert wash scrub	98.9	30.7	1624.4
North American warm desert alkaline scrub and herb playa and wet flats	136.6	25.8	2422.6
North American warm desert bedrock cliff and outcrop	4.25	3.0	73.3
North American warm desert dunes and sand flats	191.9	53.4	2818.5
Not Mapped	28.7	17.6	497.9
Shadscale-saltbush cool semi-desert scrub	67.5	26.5	830.1
Sonoran-Coloradan semi-desert wash woodland/scrub	0.2	0.2	1.9
Southern Great Basin semi-desert grassland	4.1	0.7	71.4

Table 4.4-8. Alternative 3 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Southwestern North American introduced riparian scrub	20.1	16.4	281.1
Southwestern North American riparian evergreen and deciduous woodland	0	0.5	0
Southwestern North American riparian, flooded and swamp forest/scrubland	<0.1	0.3	1.0
Southwestern North American riparian/wash scrub	242.1	101.4	3377.7
Southwestern North American salt basin and high marsh	110.6	40.7	1814.2
Western Great Basin montane conifer woodland	0.8	0	15.2
Western Mojave and Western Sonoran Desert borderland chaparral	0.8	0	15.2

Table 4.4-9. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Barstow Woolly Sunflower	8.1	9.6	93.2
Beaver Dam Breadroot	54.0	12.8	701.5
Big Bear Valley Woollypod	2.8	1.3	34.2
Boyd's Monardella	0.2	0.6	2.0
California Alkali Grass	0.8	1.9	8.9
Chaparral Sand-verbena	0.1	<0.1	0.6
Charlotte's Phacelia	6.8	1.7	126.7
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	14.1	3.6	263.3
Creamy Blazing Star	26.1	6.4	337.3
Curved-pod Milk-vetch	3.8	0	68.0
Cushenbury Buckwheat (CNDDDB)	1.6	0.1	21.6
Cushenbury Buckwheat (Critical Habitat)	1.5	0.7	18.1
Cushenbury Milk Vetch (CNDDDB)	0.9	0.2	12.1
Cushenbury Milk Vetch (Critical Habitat)	4.1	1.9	50.9

Table 4.4-9. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Cushenbury Oxytheca (CNDDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Darwin Rock Cress	0	0	0
Death Valley Sandpaper Plant	17.2	1.4	340.5
Dedecker's Clover	0	0	0
Desert Cymopterus	2.6	2.0	35.5
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	0.1	0.2	1.3
Hall's Daisy	0	0	0
Harwood's Eriastrum	0.1	0	1.3
Horn's Milk-vetch	1.6	<0.1	34.5
Kelso Creek Monkeyflower	5.2	0.5	62.5
Kern Buckwheat	0.7	0.1	8.1
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0	3.5
Lane Mountain Milk Vetch (CNDDDB)	5.4	11.0	72.7
Lane Mountain Milk Vetch (Critical Habitat)	28.0	67.1	354.1
Latimer's Woodland Gilia	1.1	0.8	23.7
Little San Bernardino Mountains Linanthus	4.2	0.1	52.6
Mojave Menodora	102.5	148.6	1231.1
Mojave Monkeyflower	16.0	8.7	252.2
Mojave Tarplant	1.0	0.2	18.8
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0.1	0	2.3
Owen's Peak Lomatium	0.3	0	6.8
Owens Valley Checkerbloom	135.0	8.6	1591.5
Pale-Yellow Layia	0.2	<0.1	2.5
Palmer's Mariposa-lily	13.8	1.8	251.7
Parish's Daisy (CNDDDB)	2.0	0.6	29.1
Parish's Daisy (Critical Habitat)	5.2	2.2	60.9
Parish's Phacelia	10.2	3.2	181.7
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	34.9	14.5	628.8
Red Rock Canyon Monkeyflower	19.9	16.4	263.2
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0.4	<0.1	6.4

Table 4.4-9. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Robison's Monardella	1.7	0	27.2
Rose-flowered Larkspur	0.7	0	17.7
San Bernardino Aster	0	0	0
San Bernardino Milk-vetch	11.9	1.0	161.2
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	1.9	0.2	22.3
Short-joint Beavertail	0.8	0.2	13.4
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	<0.1	0.1	2.0
Triple-ribbed Milk-vetch	0.6	0.1	9.7
White-bracted Spineflower	7.2	0.4	129.5
White-margined Beardtongue	19.0	0.7	286.4

1 - The inclusion of multiple CNDDDB GIS data layers likely results in an overestimate, which is a conservative approach with respect to acres potentially impacted for a number of plant species.

2 – Acreage and mileage were calculated using CNDDDB buffers.

Table 4.4-10. Alternative 3 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	54.5	6.1	658.4
I B 3 Kelso Valley Oak Woodland Assemblage	14.2	2.8	312.3
I D 2 Desert Saltbush Assemblage	1304.4	816.6	17037.0
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	9.5	3.7	141.5
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	15.0	5.3	332.1
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	13.9
III B 4 Palm Oases Vegetation	6.3	1.1	72.2
IV A 5 Mojave Sink Desert Willow Assemblage	4.7	5.0	109.5
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	861.1	311.2	13414.2

Table 4.4-10. Alternative 3 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	88.5	11.3	1127.3

The mileage of routes associated with vegetative communities, special status plant species, and UPAs under Alternative 4 is presented in Tables 4.4-11, 4.4-12, and through 4.4-13, respectively.

Table 4.4-11. Alternative 4 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Arizonan upland Sonoran desert scrub	1.0	3.4	19.7
California annual forb/grass vegetation	4.5	9.2	58.9
California naturalized annual and perennial grassland	1.7	5.7	40.2
Californian evergreen coniferous forest and woodland	39.1	94.6	667.0
Californian mesic chaparral	54.8	79.9	1009.9
California pre-montane chaparral	1.1	0	27.8
Californian warm temperate marsh/seep	0	0.1	0
Californian xeric chaparral	2.8	17.0	49.0
Central and South Coastal California seral scrub	0	0.3	0
Central and South Coastal Californian coastal sage scrub	21.6	57.1	443.4
Desert Playa	46.9	27.8	1102.3
Developed	<0.1	0.3	1.5
Great Basin cool semi-desert alkali basin	6.7	0.8	81.5
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0.6	13.4	10.6
Intermontane deep or well-drained soil scrub	112.2	190.6	2037.6
Intermontane seral shrubland	10.4	13.0	190.6
Lower Bajada and Fan Mojavean-Sonoran desert scrub	4427.7	6704.8	72036.3

Table 4.4-11. Alternative 4 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Mediterranean California naturalized annual and perennial grassland	5.0	12.9	64.9
Mojave and Great Basin upper bajada and toeslope	667.4	1124.	10782.8
Mojavean semi-desert wash scrub	135.3	117.1	1864.9
North American warm desert alkaline scrub and herb playa and wet flats	66.0	63.6	1042.1
North American warm desert bedrock cliff and outcrop	88.1	74.2	1593.3
North American warm desert dunes and sand flats	2.6	4.7	49.6
Not Mapped	118.0	127.3	1728.4
Shadscale-saltbush cool semi-desert scrub	17.8	28.5	331.8
Sonoran-Coloradan semi-desert wash woodland/scrub	48.0	46.0	595.4
Southern Great Basin semi-desert grassland group	0.2	0.2	1.9
Southwestern North American introduced riparian scrub	2.9	2.0	48.7
Southwestern North American riparian evergreen and deciduous woodland	12.3	24.2	172.6
Southwestern North American riparian, flooded and swamp forest/scrubland	0.2	0.3	2.5
Southwestern North American riparian/wash scrub	0.3	0	5.2
Southwestern North American salt basin and high marsh	184.5	159.0	2637.7
Western Great Basin montane conifer woodland	76.5	74.8	1169.7
Western Mojave and Western Sonoran Desert borderland chaparral	<0.1	0.8	1.5

Table 4.4-12. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Barstow Woolly Sunflower	8.1	9.7	138.8
Beaver Dam Breadroot	27.7	39.2	393.5
Big Bear Valley Woollypod	1.5	2.6	18.1
Boyd's Monardella	0.7	0	8.3
California Alkali Grass	0.8	1.9	8.9
Chaparral Sand-verbena	<0.1	0.1	0.1
Charlotte's Phacelia	3.0	5.4	61.7
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	5.7	12.0	111.1
Creamy Blazing Star	19.2	13.3	241.2
Curved-pod Milk-vetch	2.5	1.3	52.3
Cushenbury Buckwheat (CNDDDB)	1.2	0.5	18.4
Cushenbury Buckwheat (Critical Habitat)	1.0	1.3	12.0
Cushenbury Milk Vetch (CNDDDB)	0.7	0.4	9.3
Cushenbury Milk Vetch (Critical Habitat)	2.2	3.8	28.3
Cushenbury Oxytheca (CNDDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Death Valley Sandpaper Plant	9.2	9.4	206.4
Dedecker's Clover	0	0	0
Desert Cymopterus	2.4	2.1	34.3
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	0.1	0.1	2.9
Hall's Daisy	0	0	0
Harwood's Eriastrum	0.1	0	1.3
Horn's Milk-vetch	0	1.6	0
Kelso Creek Monkeyflower	3.1	2.5	36.1
Kern Buckwheat	0.6	0.2	7.0
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0.1	3.3
Lane Mountain Milk Vetch (CNDDDB)	5.4	10.9	73.0
Lane Mountain Milk Vetch (Critical Habitat)	25.2	69.9	323.0
Latimer's Woodland Gilia	1.2	0.7	27.3
Little San Bernardino Mountains Linanthus	2.2	2.1	27.1
Mojave Menodora	81.9	169.1	996.8
Mojave Monkeyflower	10.7	14.5	175.6

Table 4.4-12. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Mojave Tarplant	0.1	1.2	1.2
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0	0.1	0
Owen's Peak Lomatium	0	0.3	0
Owens Valley Checkerbloom	81.6	61.9	987.8
Pale-Yellow Layia	0.1	0.1	0.7
Palmer's Mariposa-lily	9.1	6.6	189.5
Parish's Daisy (CNDDDB)	1.4	1.3	20.9
Parish's Daisy (Critical Habitat)	3.1	4.4	37.1
Parish's Phacelia	5.7	7.7	876.9
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	16.7	32.7	360.0
Red Rock Canyon Monkeyflower	9.6	26.8	123.2
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0	0.4	0
Robison's Monardella	<0.1	1.7	0.6
Rose-flowered Larkspur	0	0.7	0
San Bernardino Aster	0	0	0
San Bernardino Milk-vetch	6.7	6.2	87.5
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	0.4	1.7	4.5
Short-joint Beavertail	0	1.0	0
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	0.1	<0.1	2.5
Triple-ribbed Milk-vetch	0.5	0.1	8.8
White-bracted Spineflower	2.4	5.2	50.6
White-margined Beardtongue	14.1	5.6	209.9

1 - The inclusion of multiple CNDDDB GIS data layers likely results in an overestimate, which is a conservative approach with respect to acres potentially impacted for a number of plant species.

2 - Acreage and mileage were calculated using CNDDDB buffers.

Table 4.4-13. Alternative 4 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	37.1	23.4	452.5
I B 3 Kelso Valley Oak Woodland Assemblage	<0.1	17.0	1.2
I D 2 Desert Saltbush Assemblage	887.6	1232.9	11854.7
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	3.4	9.8	67.5
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	12.7	7.4	283.5
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	13.9
III B 4 Palm Oases Vegetation	4.0	3.0	47.9
IV A 5 Mojave Sink Desert Willow Assemblage	3.7	5.9	88.0
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	302.8	869.5	4506.3
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	54.7	45.1	692.6

The mileage of routes associated with vegetative communities, special status plant species, and UPAs under Alternative 5 is presented in Tables 4.4-14, 4.4-15, and 4.4-16, respectively.

Table 4.4-14. Alternative 5 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Arizonan upland Sonoran desert scrub	1.0	3.4	19.8
California annual forb/grass vegetation	5.1	8.7	74.1
California naturalized annual and perennial grassland	1.7	5.7	40.2
Californian evergreen coniferous forest and woodland	53.7	80.1	972.7
Californian mesic chaparral	66.5	68.1	1253.2
California pre-montane chaparral	1.1	0	27.8
Californian warm temperate marsh/seep	0	0.1	0

Table 4.4-14. Alternative 5 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Californian xeric chaparral	5.3	14.6	120.3
Central and South Coastal California seral scrub	0	0.3	0
Central and South Coastal Californian coastal sage scrub	31.5	47.3	647.3
Desert Playa	46.3	28.4	1088.3
Developed	<0.1	0.2	1.8
Great Basin cool semi-desert alkali basin	6.7	0.8	81.5
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0.6	13.4	10.6
Intermontane deep or well-drained soil scrub	116.3	186.4	2104.2
Intermontane seral shrubland	10.7	12.6	195.0
Lower Bajada and Fan Mojavean-Sonoran desert scrub	4691.5	6441.7	76982.3
Mediterranean California naturalized annual and perennial grassland	5.5	12.4	73.7
Mojave and Great Basin upper bajada and toeslope	679.2	1112.5	10983.2
Mojavean semi-desert wash scrub	136.6	115.8	1900.0
North American warm desert alkaline scrub and herb playa and wet flats	66.9	62.7	1063.3
North American warm desert bedrock cliff and outcrop	92.6	69.8	1667.7
North American warm desert dunes and sand flats	2.6	4.7	49.7
Not Mapped	125.6	119.9	1808.0
Shadscale-saltbush cool semi-desert scrub	17.7	28.6	325.3
Sonoran-Coloradan semi-desert wash woodland/scrub	49.8	44.3	627.1
Southern Great Basin semi-desert grassland group	0.2	0.2	1.9
Southwestern North American introduced riparian scrub	2.8	2.1	46.1
Southwestern North American riparian evergreen and deciduous woodland	13.0	23.4	180.9
Southwestern North American riparian, flooded and swamp forest/scrubland	0.2	0.3	2.5
Southwestern North American riparian/wash scrub	<0.1	0.2	1.1
Southwestern North American salt basin and high marsh	182.9	160.6	2598.7
Western Great Basin montane conifer woodland	83.0	68.3	1303.9

Table 4.4-14. Alternative 5 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Western Mojave and Western Sonoran Desert borderland chaparral	0.3	0.5	8.7

Table 4.4-15. Alternative 5 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Barstow Woolly Sunflower	7.4	10.3	122.9
Beaver Dam Breadroot	29.1	37.7	413.9
Big Bear Valley Woollypod	1.5	2.6	18.1
Boyd's Monardella	0.7	0	8.3
California Alkali Grass	2.6	0.1	30.6
Chaparral Sand-verbena	<0.1	0.1	0.1
Charlotte's Phacelia	4.5	3.9	86.6
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	5.8	12	111.4
Creamy Blazing Star	19.2	13.3	240.7
Curved-pod Milk-vetch	1.9	1.9	42.9
Cushenbury Buckwheat (CNDDDB)	1.2	0.5	18.3
Cushenbury Buckwheat (Critical Habitat)	0.9	1.3	10.8
Cushenbury Milk Vetch (CNDDDB)	0.7	0.4	9.4
Cushenbury Milk Vetch (Critical Habitat)	2.1	3.9	26.9
Cushenbury Oxytheca (CNDDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Death Valley Sandpaper Plant	8.5	10.2	193.3
Dedecker's Clover	0	0	0
Desert Cymopterus	2.3	2.2	32.8
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	0.1	0.1	2.6
Hall's Daisy	0	0	0
Harwood's Eriastrum	0.1	0	1.3

Table 4.4-15. Alternative 5 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Horn's Milk-vetch	0	1.6	0
Kelso Creek Monkeyflower	3.2	2.5	36.6
Kern Buckwheat	0.6	0.3	6.6
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0.1	3.3
Lane Mountain Milk Vetch (CNDDDB)	5.4	10.9	72.9
Lane Mountain Milk Vetch (Critical Habitat)	25.2	69.9	322.8
Latimer's Woodland Gilia	1.3	0.7	27.3
Little San Bernardino Mountains Linanthus	2.6	1.7	32.9
Mojave Menodora	91.4	159.6	1109.2
Mojave Monkeyflower	11.1	13.6	184.8
Mojave Tarplant	0.2	1.1	4.2
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0.1	0	2.3
Owen's Peak Lomatium	0.3	0	6.8
Owens Valley Checkerbloom	83.0	60.5	1004.3
Pale-Yellow Layia	0.1	0.1	0.7
Palmer's Mariposa-lily	10.0	5.6	199.3
Parish's Daisy (CNDDDB)	1.4	1.3	20.9
Parish's Daisy (Critical Habitat)	3.1	4.3	38.0
Parish's Phacelia	5.5	7.9	80.6
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	16.7	32.7	360.3
Red Rock Canyon Monkeyflower	7.4	28.9	94.6
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0.3	0.1	4.3
Robison's Monardella	0.4	1.3	8.2
Rose-flowered Larkspur	0.7	0	17.7
San Bernardino Aster	0	0	0
San Bernardino Milk-vetch	7.2	5.7	96.9
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	0.4	1.7	4.5
Short-joint Beavertail	0.3	0.7	8.6
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	0.1	0.1	3.1
Triple-ribbed Milk-vetch	0.5	0.1	9.1

Table 4.4-15. Alternative 5 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species^{1,2}

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
White-bracted Spineflower	3.2	4.4	65.4
White-margined Beardtongue	13.9	5.9	206.8

1 - The inclusion of multiple CNDDDB GIS data layers likely results in an overestimate, which is a conservative approach with respect to acres potentially impacted for a number of plant species.

2 – Acreage and mileage were calculated using CNDDDB buffers.

Table 4.4-16. Alternative 5 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	OHV Open, OHV Limited, Non-Mechanized, and Non-Motorized (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	33.6	26.9	411.4
I B 3 Kelso Valley Oak Woodland Assemblage	<0.1	17.0	1.7
I D 2 Desert Saltbush Assemblage	882.5	1238.6	11903.2
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	4.4	8.8	79.3
II F Ord Mountain Jojoba Assemblage	<0.1	0	0.5
III B 1 Mesquite Thickets	12.2	8.0	275.1
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	13.9
III B 4 Palm Oases Vegetation	4.6	2.8	52.9
IV A 5 Mojave Sink Desert Willow Assemblage	4.8	4.8	110.5
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	410.3	762.0	6331.0
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	61.5	38.4	769.8

Vegetative Communities

Alternative 2 has the least impact to vegetative communities within the WEMO Planning Area with 688.9 fewer miles designated as OHV Open or OHV Limited than the No Action Alternative. Alternative 3 has the highest potential for impact to vegetative communities with 4,759.9 more designated OHV Open and OHV Limited miles as compared to the No Action

Alternative. Alternative 5 has an intermediate potential for impact with approximately 790.9 more designated OHV Open and OHV Limited miles as compared to the No Action Alternative, but 3,969 fewer designated OHV Open and OHV Limited miles than Alternative 3. Alternative 5 has 790.6 miles fewer transportation linear disturbances than the No Action Alternative, and 1,482.3 miles fewer than Alternative 2. Under Alternative 5 there are 79,352.2 fewer acres of stopping/parking/camping as compared to the No Action Alternative, and 47,420.8 more acres of stopping/parking/camping as compared to Alternative 2. The No Action Alternative has the greatest potential for impact to vegetative communities from stopping/parking/camping with approximately 17,000.3 acres more than Alternative 3.

Special Status Plants

Alternative 2 has the least amount of OHV Open and OHV Limited routes at 3.8 miles in Lane Mountain milk vetch designated Critical Habitat as compared to the other alternatives, which all have approximately 5.4 miles of OHV Open and OHV Limited routes. Alternative 5 has the greatest amount of OHV Open and OHV Limited routes at 25.2 miles in Lane Mountain milk vetch designated Critical Habitat as compared to the other alternatives. Alternative 5 has 0.7 more miles of OHV Open and OHV Limited routes as compared to the No Action Alternative within Lane Mountain milk vetch Critical Habitat.

Alternative 3 has the greatest impact to Carbonate Endemic plant species (Cushenbury buckwheat, Cushenbury milk vetch, and Cushenbury oxytheca) compared to the other alternatives with 5.6 more miles of OHV Open and OHV Limited routes within their designated Critical Habitat. Alternative 5 has the least amount of OHV Open and OHV Limited routes, with 3 miles in Carbonate Endemic plant species (Cushenbury buckwheat, Cushenbury milk vetch, and Cushenbury oxytheca) designated Critical Habitat as compared to the other alternatives. Alternative 5 has 1.6 fewer miles of OHV Open and OHV Limited routes within Carbonate Endemic plant species Critical Habitat as compared to the No Action Alternative.

Alternative 3 has the greatest potential impact to Parish's Daisy Critical Habitat with 0.8 miles more OHV Open and OHV Limited routes than the No Action Alternative. Alternative 5 has the lowest impact to Parish's Daisy as compared to the other alternatives, with 3.1 miles of OHV Open and OHV Limited routes within its designated Critical Habitat. Alternative 5 has 1.3 fewer miles of OHV Open and OHV Limited routes within Parish's Daisy designated Critical Habitat as compared to the No Action Alternative.

Alternative 5 has an intermediate potential for impact with 41.1 miles greater of OHV Open and OHV Limited routes within range of other protected habitat for Special Status Plant Species, as compared to the No Action Alternative. Alternative 3 has the greatest potential for impact with 881.9 miles greater OHV Open and OHV Limited routes and 315.6 acres more stopping/parking/camping as compared to the No Action Alternative. Alternative 2 has the least potential for impact with 51 miles fewer OHV Open and OHV Limited routes and 3,858.5 acres less of stopping/parking/camping as compared to the No Action Alternative.

UPAs

There are approximately 530,000 acres of Unusual Plant Assemblages (UPAs) in the West Mojave Planning Area. Regardless of how the WMRNP categorizes designated routes, there are approximately 166 more miles of OHV Open or OHV Limited routes designated under

Alternative 5 than the No Action Alternative. These designated routes are not new ground disturbances and are not recognized as habitat for those native plant species that constitute a UPA. Impacts from OHV use of these routes on plants and their habitats within these UPAs are minimal, except when OHVs or mechanized vehicles leave these designated routes, direct and indirect impacts to UPA vegetation can occur. Another potential source of direct and indirect impacts to UPA vegetation could potentially occur in the areas designated for Stopping, Parking and Camping. For the analysis below, only 1 percent of the acreage encompassed by the Stopping, Parking and Camping buffer is considered potentially impacted based on field analysis of current use and the fact that only disturbed areas are authorized for Stopping, Camping and Parking.

Under Alternative 5, it is estimated that approximately 200 acres of UPAs may be impacted by Stopping, Parking and Camping. This could potentially impact 0.05 percent of the UPAs in the West Mojave Planning Area. The UPAs vary substantially in size and extent, some less than 1 acre like the Cronese Valley Crucifixion Thorn Assemblage, to the Desert Saltbush Assemblage which is in excess of 10,000 acres. There is a designated OHV Open route that runs adjacent to the Cronese Valley Crucifixion Thorn Assemblage with no direct impacts, and there are numerous designated, OHV Open and OHV Limited routes that crisscross the Desert Saltbush Assemblage. If vehicles stay on those routes, then any direct or indirect impacts to UPA vegetation would be minimal.

Alternative 5 has an intermediate potential for impact to UPAs with 145.8 miles more OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 5 has 146.4 fewer miles of transportation linear disturbance and 81.9 acres fewer acres of stopping/parking/camping impacts as compared to the No Action Alternative. Alternative 3 has the greatest potential for impact with 1,090.1 miles more OHV Open and OHV Limited routes, and 50.8 acres more of stopping/parking/camping impacts as compared to the No Action Alternative. Alternative 2 has the least potential for impact to UPAs with 191.3 miles fewer of OHV Open and OHV Limited routes, and 156.2 fewer acres of estimated impacts from stopping/parking/camping as compared to the No Action Alternative.

4.4.1.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for special-status plants and other protected vegetation resources that were considered, and that may be implemented, include but are not limited to:

- Restrict stopping/parking/camping;
- Add parking/camping area;
- Install barriers and maintain or upgrade existing barriers;
- Remove attractants;
- Modify access to a less impacting designation;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Install access type restrictor;

- Re-align route to avoid environmentally sensitive area;
- Install barriers and maintain or upgrade existing barriers;
- Construct or install educational information such as signs;
- Install step-over;
- Install fencing;
- Narrow route;
- Install/implement erosion prevention Best Management Practices;
- Monitor the route for signs of increasing impacts to a sensitive resource; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation; and
- Maintain and enforce reduced utilization thresholds for livestock grazing based on the season of use and range conditions.

Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to vegetation. Under the No Action Alternative, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and implementing stopping, camping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for new direct or indirect effects to vegetation, as compared to pre-2006 conditions before these limitations were enacted.

Under Alternatives 2, 3, 4, and 5, limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and further limiting stopping, camping, and parking limits would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for direct or indirect effects to vegetation. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific vegetation impacts are considered before authorizing new OHV Open and OHV Limited routes.

4.4.1.6 Residual Impacts After Implementation of Mitigation Measures

Residual effects to vegetation resources would continue after application of mitigation measures, both with the livestock grazing program, with continued OHV use, and following designation of routes as transportation linear disturbances. Where OHV use is still allowed in areas with special-status vegetation species or UPAs, the impacts would be reduced from those that would have existed without mitigation measures. However, vehicles could still damage vegetation if they traveled into undisturbed areas. Designation of routes as transportation linear disturbances in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.4.2 Wildlife Resources

4.4.2.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the route network evaluated in that EIS with respect to wildlife habitat, wildlife corridors, and special status wildlife species. The analysis included a discussion of the effects of OHV use on specific wildlife species, including the desert tortoise, Mohave ground squirrel, and others. The Court evaluated the analysis specific to the Mojave fringe-toed lizard and found that the analysis was inadequate, because it reached a conclusion of no impact while at the same time acknowledging that there was no recent data on population status and density. The Remedy order (pg. 15) required BLM to implement additional information gathering and monitoring regarding the status of the Mojave fringe-toed lizard and its habitat. Finally, the Court made a general finding, for all resources, that the range of route network alternatives evaluated was inadequate. No other deficiencies were identified in the analysis of impacts to any other wildlife species, corridors, or habitat.

4.4.2.2 Impacts Common to All Alternatives

As with vegetation, OHV use and grazing have both direct and indirect effects on wildlife habitat and individuals. By removing vegetation and compacting soil, OHV Open and OHV Limited routes directly occupy land area that would otherwise be occupied by wildlife, and eliminate plants that would serve as forage and shelter. In addition, OHVs present a direct strike risk to individuals, reducing populations in close proximity to OHV Open and OHV Limited routes.

Each of the indirect effects discussed with respect to vegetation, including changes in hydrology, increase in invasive plants, changes in fire ecology, edge effects, and proliferation of disturbance due to operation of vehicles outside of the route and grazing would have a similar effect on the quality of those areas for wildlife habitat. OHV use would also potentially have an indirect effect on wildlife, such as nesting birds, through the introduction of noise, dust, and light sources. Maintaining routes as OHV Open and OHV Limited also acts to provide human access to areas of sensitive wildlife habitat. Increased human access can have an indirect adverse effect on wildlife by introducing noise sources, attracting predators such as ravens, and by allowing dogs to have access to sensitive wildlife areas. OHV impacts are generally proportional to the number of existing routes in an area. Both allowed uses (e.g., vehicle use that remains on designated OHV Open and OHV Limited routes) and prohibited uses (i.e., cross-country travel outside BLM Open Areas, dumping, vandalism, collection and use of transportation linear disturbances) are more likely to occur where roads are relatively more common. Grazing impacts are generally proportionate to the acreage of active allotments allocated to livestock.

The edge effect of an increase in vegetation density due to precipitation runoff can result in attracting wildlife to the edges of routes (Ouren and others 2007). This can result in increased mortality due to vehicle strikes. This edge effect also tends to increase the density and vigor of non-native invasive species which are generally poorer quality food resources for herbivorous sensitive species such as the desert tortoise.

OHV routes can also impact wildlife habitat by causing fragmentation, reducing patch size, and increasing the ratio of edge to interior. These effects can be adverse to species which require large blocks of contiguous habitat, or corridors linking patches of habitat (or linking management units such as Critical Habitat Units for desert tortoise). Severing or impinging upon linkages may be especially significant in relation to the ability of wildlife species to move in response to

greenhouse gases. The presence of routes can inhibit animal movement due to reluctance of individuals to cross even narrow routes (Ouren and others 2007).

Wildlife impacts were considered in the development of alternative goals and objectives, in designation of individual routes, and in defining specific implementation parameters. Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. The goals and objectives developed for Alternative 2 focus on enhancing sensitive resource values and areas, including threatened and endangered species and other sensitive biological and non-biological landscape factors, and managing access to de-emphasize casual multiple-use OHV and mechanized touring. In contrast, the goals and objectives for Alternative 3 focus on meeting the diverse transportation, access, and recreational needs of the public, and managing access to emphasize casual multiple-use OHV and mechanized touring.

Wildlife impacts were also considered by evaluating route locations with respect to DT ACECs, ACECs, CDNCLs, national monuments, DCH, the Mohave Ground Squirrel Core Areas, nest locations (for golden eagles), wildlife corridors, and other identified habitat features. In addition, the WMRNP alternatives include consideration of stopping and parking distances from routes in order to minimize disturbance in previously undisturbed areas, thus reducing the potential for new impacts to wildlife habitat and individuals in those areas. Therefore, minimization of wildlife impacts was a factor both in development of the alternative route networks, and in the specific limitations placed on routes in those networks.

The general manner in which OHV use and grazing impacts wildlife is similar for many species, and therefore discussion of the effects of vehicle impacts, soil compaction, and many other impacts for each individual species would be redundant. The following discussion is focused on the desert tortoise because it has the most widespread habitat of any of the special-status wildlife species in the planning area. However, the effects discussed are expected to be applicable to other wildlife species in the planning area. Additional discussions are presented for other species where specific data regarding impacts of OHV use and grazing are available, including the Mohave ground squirrel, Mojave fringe-toed lizard, bighorn sheep, and bird species. Impacts to all special-status wildlife species, including species not discussed here, were still considered as part of the route designation process, and identification of minimization and mitigation measures.

Desert Tortoise

Designating and implementing an OHV Open and OHV Limited network in DT ACECs that is supported by land use laws and compatible with tortoise recovery is an important management action that could be implemented to minimize human impacts to desert tortoise. The goal is to designate and implement a route network throughout DT ACECs 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 designated critical habitat (first priority), unoccupied suitable habitat (second priority), and future climate refugia (third priority);
- Maintaining large blocks of unfragmented habitat; and
- Prevent use of transportation linear disturbances which will allow for natural and assisted habitat restoration.

OHV use can have both direct and indirect effects on desert tortoises and their habitat. The primary direct effect is vehicles striking desert tortoises while driving on routes of travel. As is usually the case, hatchling desert tortoises are the most difficult individuals to detect and may be inadvertently struck by vehicles. However, they may be at somewhat less risk than sub-adult and adult desert tortoises because their territories are presumably smaller and they may move around less and therefore are less likely to encounter a road. Their propensity to be more active during cooler times of the year may extend the periods during which they are at risk from vehicle strikes.

Although larger individuals can be seen on roads more readily than the younger, smaller ones, vehicles can travel at speeds that reduce the ability of drivers to detect and avoid desert tortoises. Rises and turns in roads also decrease the ability of drivers to detect desert tortoises. The actual level of mortality that would occur along a specific road would be influenced by many variables and is difficult to predict; the level and type of use of the road by vehicles and the number of desert tortoises present during periods of heavy use are primary factors that are difficult to predict. Mortality associated with vehicle strikes would be greatest in the spring and fall, in areas where desert tortoises are most common. Along heavily used roads, the number of desert tortoises is depressed for some distance from the edge of the road; along lightly used roads, no significant difference exists in the distribution of desert tortoises (Von Seckenforff, Hoff and Marlow 2002).

Based on a review of the literature, the USGS (Ouren et al. 2007) concludes that an “important concern” regarding OHV effects on desert tortoise is the susceptibility of this species to mortality on all types of roads. According to the Recovery Plan (USFWS 2011), effects to desert tortoise habitat from roads, routes, trails, and railroads occur during initial stages or off-highway vehicle route/trail establishment when vegetation and soils are lost or severely degraded. Hoff and Marlow (2002), as cited in the Recovery Plan (USFWS 2011), demonstrated that there is a detectable impact on the abundance of desert tortoise sign adjacent to roads and highways with traffic levels from 220 to over 5,000 vehicles per day and the extent of the detectable impacts was positively correlated with the measured traffic level; the higher the traffic counts, the greater the distance from the road reduced tortoise sign was observed. The Recovery Plan also states that Hoff and Marlow (2002) concluded that unpaved access roads with lower traffic levels may have significant effects on tortoises. As cited in the Recovery Plan, Boarman (2002) concludes that off-highway vehicle activities remain an important source of habitat degradation and could result in reductions in desert tortoise densities (Boarman 2002). Therefore, the extent of mortality of desert tortoises is anticipated to increase as the density of roads and the number of animals increase. At some point, vehicle use on roads (and other activities that accompany vehicle use) would likely reduce the number of desert tortoises to a point where the level of mortality also decreases, simply because fewer desert tortoises live in the region.

Some routes of travel are located in washes. Washes can provide important resources to desert tortoises because they often support forage plants at times when upland areas do not; desert

tortoises also frequently use the banks of washes to construct their burrows. At times, desert tortoises may use washes to move through their territories; they may travel along washes more frequently in extremely rugged terrain. Consequently, vehicle use in washes has the potential to have a relatively greater degree of impact on desert tortoises than the use of roads. Adverse effects would be greatest in more narrow, vegetated washes where vehicles do not have room to maneuver around shrubs or avoid riding partially up banks; the ability of drivers to see desert tortoises in these washes is also diminished. In wide washes, where flooding causes relatively frequent disturbance and few shrubs are present, the quality of desert tortoise habitat is already reduced; therefore, OHV use will likely have less of an effect on desert tortoises or their habitat in these areas

The human activities that routes of travel accommodate may pose a greater threat to desert tortoises than being struck by a moving vehicle because of the variety of indirect effects that can result. Routes of travel through the desert increase the frequency at which people can interact with desert tortoises. These interactions can lead to uninformed or malicious interactions that result in injury, mortality, or collection of desert tortoises. Unauthorized handling or restraint of a desert tortoise could induce physiological stress that reduces the animal's ability to withstand high temperatures. Additionally, desert tortoises may seek shelter in the shade of vehicles parked along a route of travel and be crushed when those vehicles are subsequently moved. Improper disposal of food wastes and trash left by users of routes of travel can attract predators of the desert tortoise, especially common ravens. Pet dogs brought onto public lands by people using routes of travel could disturb, injure, or kill desert tortoises.

Within the DT ACECs, the stopping, parking, and camping zones are assumed to be occupied desert tortoise habitat, with burrows, food plants, shelter and drinking depressions. Rocky mountainous areas and playas within a DT ACEC are exceptions. Other ACEC, CDNCL, and national monument areas protecting threatened and endangered plants, such as the Carbonate Endemic Plants Research Natural Area ACEC near Lucerne Valley, or the Lane Mountain milkvetch ACEC in Coolgardie Mesa and West Paradise, similarly contain resources that are highly sensitive to vehicle damage. The listed plants as well as desert tortoises could be subject to direct impacts by crushing from use of the camping, parking, and stopping areas.

The CDCA Plan currently allows cars and trucks to drive and park up to 300 feet from a route of travel. This authorized off-road use can crush desert tortoises, which would be more difficult to see away from roads, destroy their burrows, crush shrubs that they use for cover, and disturb soils and allow invasion by non-native plant species. In some areas, recreation users prefer specific sites where they can congregate, which degrades habitat to the point that desert tortoises would be unlikely to forage or burrow in these areas.

An increase in non-native plants can increase the spreading of fire across the desert landscape (Lovich and Bainbridge 1999, Brooks and Esque 2002). Neither desert tortoises nor the plant species upon which they depend are adapted to fire; consequently, fires could result in a substantial loss of desert tortoises and severely alter the plant community structure within their habitat (Brooks and Esque 2002). Also, non-native plants tend to provide less nutrition value than do native species.

Most routes of travel are not used on such a frequent basis that they would inhibit movement or be likely to result in traffic-induced mortality of the desert tortoise. Most use of routes of travel involves recreational activities, which generally occur at higher levels on weekends and holidays.

However, some routes of travel are maintained such that the bed of the road is lowered and side berms raised so much, that if desert tortoises enter that roadway, they cannot exit. These animals are subsequently threatened with predation, exposure to extreme temperatures, collection, and collision with vehicles.

The USFWS notes that neither the BLM or the USFWS has definitive information on how differing route networks affect the desert tortoise (USFWS 2002a); obviously roadless areas would have the least adverse effect on desert tortoises and their habitat; it follows that with increasing amounts of open routes within the planning area, the greater the impact to the desert tortoise and its habitat. However, the use patterns on the open route network may be as important, particularly in areas where tortoises are more likely to be found.

The BLM grazing program was analyzed in the 2006 WEMO Plan, and the decisions from the planning effort led to grazing that was substantially curtailed in DT ACECs, with additional measures included for the allotments that are still available for grazing. In addition, a mechanism for voluntary relinquishment of active leases was adopted in the WEMO Plan. BLM is considering whether to further modify the BLM grazing program in the WEMO Planning Area by completely discontinuing grazing in DT ACECs (or parts of allotments adjacent to DT ACECs). The strategy of discontinuing livestock grazing from desert tortoise recovery areas was recommended in the 1994 Recovery Plan. Although no longer specifically recommended in the 2011 Revised Recovery Plan, discontinuation of livestock grazing is consistent with the recommendation of “continuing to minimize impacts to tortoise from livestock grazing within tortoise recovery areas” (*Revised Recovery Plan for the Mojave Population of the Desert Tortoise*, May 6, 2011, Section 2.16, p. 78). Therefore, reductions in grazing extent within or adjacent to DT ACECs is considered a net benefit for this species.

Mojave Fringe-Toed Lizard

Similar to the desert tortoise, OHV use can have both direct and indirect effects on Mojave fringe-toed lizards (MFTL) and their habitat. The potential direct effects could include vehicle collision and habitat loss or modification. There would be adverse impacts to the MFTL where OHV Open and OHV Limited routes pass through suitable and occupied habitat.

The proposed route network has no potential adverse effects for six of the seven ACEC parcels in the Mojave River channel since the route network has no intrusion into fringed-toed lizard habitat. The historic Mojave Road which traverses along the length of the Mojave River channel from the Manix ACEC to Afton Canyon traverses through three MFTL ACECs. However, travel along this route is largely confined by topography (river channel walls, boulders, etc.) with few route incursions. The route sometimes wanders within the channel but largely avoids fringed-toed lizard habitat resulting in minimal adverse effects to this species.

The proposed route network may have potential direct effects at two MFTL ACECs where the route network traverses habitat. One of these ACECs is the Razor ACEC and is located adjacent to the Razor Open Area and BNSF Railroad. The other ACEC is located adjacent to the Sheephole Mountains and east of the town of Twentynine Palms.

The proposed route network also traverses suitable MFTL habitat outside ACECs. Many of these areas have not been surveyed and acreages of suitable habitat have not been mapped to date. MFTL presence exists (CNDDDB Data) for the Alvord Mountains and Pisgah Crater area where the proposed route network may have direct effects. The Pisgah ACEC was established in part

for the protection of the MFTL. However, this lizard species may occur outside the boundaries of the ACEC where they may be affected by the proposed route network. OHVs may have adverse effects to MFTL along the west slopes of the Cady Mountains where habitat may be suitable but presence/absence data do not exist. Five MFTL were collected in the Harper Dry lake vicinity in 1949. However, there are no recent sightings.

Mohave Ground Squirrel

The Mohave ground squirrel (MGS) is a medium-sized species that would experience similar threats from OHV use as those described for desert tortoise. OHVs may pose a threat to the MGS by crushing individuals or burrows, and degrading habitats (Gustafson 1993, Laabs 1998). With time, the plant diversity and abundance decreases in areas with intense OHV use (Laabs 1998), which reduces cover needed by the species for shade and forage. Gustafson (1993; citing Bury and Luckenbach 1977), reported that even light OHV use in the Mojave Desert can result in lost or compacted topsoil, unavailability of seeds for birds and mammals, and disrupted soil mantles. Gustafson (1993) reported, "...it is known that the squirrel is run over by vehicle[s]," but did not provide any specific reports.

There is anecdotal evidence that the MGS may be killed on both paved and dirt roads, although it has been suggested that they are too quick for this to happen often. For example, during tortoise surveys conducted near Water Valley, northwest of Barstow, in 1998, LaRue crushed a juvenile male MGS on a dirt road as it attempted to cross in front of his truck. In 1997, LaRue observed a juvenile male (likely a hybrid) as it was crushed on National Trails Highway, several miles north of Helendale. One of the nine MGS observed in 1998 (LaRue, unpublished data) darted into burrows that were located in the berms of a dirt road. The juvenile female was observed for about 20 minutes eating cryptantha alongside the road, and later using two different burrows located in berms on opposite sides of the road. Recht (1977) also observed MGS feeding on Russian thistle that was congregated along shoulders of roads in northeastern Los Angeles County.

Goodlett and Goodlett (1991) have shown, in the Rand Mountains, that the heaviest vehicle impacts occur immediately adjacent to both OHV Open and OHV Limited routes, and routes designated as transportation linear disturbances. It is plausible, then, that individual MGS using resources adjacent to roads are more likely to be in harm's way than those animals occurring in roadless areas. It is also plausible that juvenile MGS, which are most likely to travel longer distances than adults, are somewhat more susceptible to vehicle impacts than adults. Although adults may still be susceptible to vehicle impacts within their somewhat-fixed home ranges, dispersing juveniles are likely to encounter more roads than an adult living within a fixed region.

Bighorn Sheep

OHV-related effects such as habitat fragmentation and reduced habitat connectivity are generally associated with area-sensitive wildlife species including, but not limited to, desert tortoise, mountain lion, gray wolf, and black bear. Small and medium-sized wildlife species may be more likely than larger species to experience direct OHV impacts from vehicle collisions and/or habitat destruction. For larger animals, such as the bighorn sheep, OHV-related effects such as noise would be more likely to occur than direct mortality from OHV impact.

OHV traffic is a source of noise and other stimuli which has the potential for disturbing wildlife along roads and trails. Excessive noise from OHV activities would directly impact wildlife, including potential disturbance effects from physiological impacts such as stress, and/or altered behaviors and population distribution/dispersal patterns, which can lead to declines in local population size, survivorship, and productivity (Ouren et. al. 2007).

Larger animals also exhibit responses to the intensity of traffic and traffic noise. Lyren (2001) found that coyotes changed their road-crossing periods in response to changes in traffic intensity throughout the day, and Singer (1978) reported that, in response to the shifting of truck gears, mountain goats ran away from a road edge when the truck was 1 km (0.6 mi) away from them, and they ran away from a lick that was 400 m (437.4 yd) from the road. For bighorn sheep, the most prominent potential OHV-related effects would be direct impacts from noise and general disturbance; vehicle intrusion into occupied habitat, especially lambing areas, can be a minor threat. Often, bighorn sheep will move away from otherwise suitable habitat due to increased human activity.

The potential also exists for unrestricted off-roading activities within areas where bighorn sheep are known to occur; such activities could result in destruction of plants and/or foraging habitat that bighorn sheep depend on.

Bird Summary

In addition to habitat fragmentation, routes and trails also create habitat edges, which can result in indirect edge effects related to OHV use. Often, these edge effects extend into the desert interior, well beyond a route's actual footprint. Because vegetation cover can be greater along road edges, many species may be attracted to right-of-way habitats; however, these areas that provide ample resources may also impose higher mortality rates. For example, birds may be attracted to lush roadside vegetation for breeding, nesting, or foraging, but they may be at great risk of mortality due to being hit by vehicles. Areas of extensive OHV use have also been documented as exhibiting decreased species density and diversity (Ouren et. al 2007).

The following special status bird species have known suitable habitat within the project area and could potentially be affected by the proposed action or alternatives: Bendire's thrasher, burrowing owl, gray vireo, Least Bell's vireo, LeConte's thrasher, Swainson's hawk, golden eagle, and yellow-billed cuckoo. The primary potential OHV threat to special-status birds in the project area would likely be disturbance (including noise), specifically disturbance to nest sites and disturbance to foraging behavior.

Potential OHV-related threats to burrowing owls include direct mortality from vehicle collisions (this species has a high tolerance for vehicle disturbance, but this causes high numbers of collisions), habitat degradation, and disturbance by vehicles at nest sites (Haug et al. 1993). LeConte's thrashers can be sensitive to vehicle traffic during the nesting season, especially off road travel in washes. Golden eagles and/or other raptors could experience potential impacts from OHV use through disturbance to foraging behavior, loss of prey species (e.g., lizards, small mammals), and disturbance of nest sites. Off-road vehicle disturbance to prairie falcon nest sites has been documented, as well as declines in prey species in the Mojave Desert due to OHV effects (Berry 1980). A recent study of OHV recreation volume effects on breeding raptors and their habitat (Spaul and Heath 2014) concluded that the majority of recreational traffic did not illicit a discernible response from nearby eagles, unless prolonged activity occurred near the bird

or nest. Additionally, a study of changes in golden eagle reproduction related to increased OHV activity in Idaho between 1999 and 2009 showed a correlation between significant increases in OHV use and decreases in occupancy and success of territories in close proximity to recreational trails and parking areas (Steenhof, Brown, and Kochert 2014).

In recent years, BLM offices in other locations have implemented seasonal wildlife closures to protect several bird species, including the golden eagle, during sensitive nesting periods (BLM 2012). Because human disturbance, such as off-road vehicle activity, has the potential to result in nest failure or abandonment, access to specific routes or trails can be limited during certain months to preserve nesting and roosting habitat. BLM has also implemented seasonal closures of grazing allotments to protect several riparian bird species such as Least Bell's vireo and southwestern willow flycatcher.

4.4.2.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to wildlife resources from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

All proposed "C" routes are located outside of the protected habitat for any of the special status wildlife species being considered with the exception of the Mohave ground squirrel. Under the No Action Alternative, approximately 3 miles of routes fall within MGS core population areas.

Under Alternative 2, the seasonal limitations on "C" routes may reduce their use for OHV events, and thus have localized beneficial impacts on wildlife. With the implementation of seasonal limitations, the potential for a direct take of the Mohave ground squirrel should be very low.

Under Alternatives 3, 4, and 5, the proposed "C" routes are outside of the protected habitat for any of the special status wildlife species being considered with the exception of the Mohave ground squirrel. Under Alternative 3, approximately 28 miles of routes fall within MGS core population areas. Under Alternatives 4 and 5, approximately 23 miles of routes fall within MGS core population areas. The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area under Alternatives 4 and 5 would be made with appropriate mitigation measures to protect wildlife.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds do not support abundant wildlife, and are not associated with wildlife corridors or special-status wildlife. As a result, OHV use on the lakebeds is not expected to impact wildlife corridors or special-status wildlife under any alternative, and this decision would not have any adverse effect on wildlife corridors or special-status wildlife. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes due to its OHV closure under Alternative 2, and to its designation as "OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit" under Alternatives 3, 4, and 5, would be low. As a result, Alternatives 2, 3, 4, and 5 are not

expected to have an indirect, adverse impact on wildlife corridors or special-status wildlife by increasing the recreational use of routes in other areas.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

The desert tortoise, Mohave ground squirrel, burrowing owls, pallid bats, and small lizards and animals occur within the Rand Mountains-Fremont Valley Management Area.

Under the No Action Alternative and Alternative 2, the implementation of the permit system in the Rand Mountains-Fremont Valley Management Area would continue. Impacts to desert tortoise, Mohave ground squirrel, burrowing owls, pallid bats, and small lizards and animals may occur as a result of OHV use on remaining available routes, despite adopted measures, including fencing, oversight, and measures to increase public information prior to use of routes in the area.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV access to the Rand Mountains would be eliminated. Not requiring a visitor to complete an educational orientation program before visiting an area may result in an adverse impact to wildlife if the visitor is unaware of the special resources within the particular area. These impacts maybe overcome through other educational mediums and materials such as kiosks and brochures.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of allowing previously disturbed areas to become re-vegetated over time, and also reduce the amount of new disturbance that would occur, thus reducing direct impacts to wildlife and wildlife habitat. The effect of these actions is a net beneficial impact to wildlife.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce the potential for direct impacts to wildlife and wildlife habitat, and would thus be more beneficial than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, on-going but localized direct impacts to wildlife would continue in active grazing allotments, including approximately 115,106 acres of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments.

Under Alternative 2, discontinuing livestock grazing in DT ACECs and re-allocating all of the Animal Unit Months (AUM, an expression of livestock stocking commitment based on forage) from livestock forage to wildlife use and ecosystem functions on a total of 115,106 acres within the Ord Mountain, Cantil Common, and Shadow Mountain Allotments would enhance habitat of special-status species, including the listed desert tortoise.

4.4.2.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that the use of OHVs on the designated network can have adverse impacts on wildlife habitat, and on special status wildlife species. Like the analysis of impacts to vegetation, these impacts would be focused in areas in close proximity to the OHV Open and OHV Limited routes. The mileage of routes associated with wildlife corridors, special status wildlife areas, and DCH and non-critical habitat probability model ranges (probability of indirect impacts to DCH) under the No Action Alternative is presented in Tables 4.4-17, 4.4-18, and 4.4-19, respectively.

Table 4.4-17. No Action Alternative - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Routes Within Wildlife Corridor	2355.8	3512.7	69392.4

Table 4.4-18. No Action Alternative - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Bendire's Thrasher	8.3	67.5	278.4
Bighorn Sheep	81.3	127.8	2138.8
Burrowing Owl	1.7	5.4	59.8
Desert Tortoise (Total within Critical Habitat)	2192.0	2726.1	30669.4
Desert Tortoise (DTRNA)	2.9	128.4	145.4
Desert Tortoise (Fremont-Kramer ACEC)	812.7	1188.5	10148.9
Desert Tortoise (Ord-Rodman ACEC)	310.7	518.3	3862.8
Desert Tortoise (Pinto Mountains ACEC)	136.8	74.4	1713.9
Desert Tortoise (Superior-Cronese ACEC)	785.7	721.7	9294.7
Fringed Myotis	0.1	0.1	1.2
Gray Vireo	0	0.7	0
Least Bell's Vireo	4.7	5.5	98.1
LeConte's Thrasher	11.1	20.2	651.1
Mojave Fringe-toed Lizard ¹	18.4	31.8	510.9
Northern Sagebrush Lizard	<0.1	<0.1	0.3
Pallid Bat	6.2	18.9	322.9
Southwestern Pond Turtle	0.1	0	1.0
Spotted Bat	0	0.3	3.0
Swainson's Hawk	<0.1	1.3	0.3
Western Mastiff Bat	2.7	3.9	159.2
Golden Eagle 0-0.5 Miles of active nests	29.9	73.3	1007.7
Mohave Ground Squirrel	524.2	673.7	26276.6

Table 4.4-18. No Action Alternative - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
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1 - Mojave fringe-toed lizard is at risk from any route within its sand habitat between April 1 and September 30.

Table 4.4-19. No Action Alternative - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Fremont-Kramer Critical Habitat	0	0	0	0
	0.1	4.6	3.7	57.4
	0.2	15.1	8.8	186.9
	0.3	8.9	6.8	108.3
	0.4	21.2	27.8	251.2
	0.5	22.4	47.9	286.8
	0.6	45.6	91.1	613.5
	0.7	64.0	94.0	879.4
	0.8	210.0	395.2	3023.6
	0.9	508.1	723.3	8285.9
Superior-Cronese Critical Habitat	0	0.4	6.3	6.4
	0.1	3.0	1.6	34.9
	0.2	4.0	2.4	62.4
	0.3	4.0	6.1	73.2
	0.4	15.7	11.8	186.7
	0.5	12.5	2.1	143.7
	0.6	15.4	16.0	204.1
	0.7	63.6	63.9	1039.9
	0.8	231.0	199.4	2929.7
	0.9	463.9	415.4	6097.9
Ord-Rodman Critical Habitat	0	11.3	15.3	135.7
	0.1	10.4	25.7	127.0
	0.2	15.1	23.2	187.6
	0.3	6.1	9.9	73.3
	0.4	11.6	16.3	155.7
	0.5	8.9	16.1	108.4
	0.6	14.2	33.8	217.8
	0.7	16.0	32.2	224.6
	0.8	97.0	140.9	1240.1
	0.9	128.6	174.6	1571.4
Pinto Mountains Critical Habitat	0	0	0	0
	0.1	0.7	0	7.9
	0.2	0.8	0.4	9.3
	0.3	10.6	2.8	126.6
	0.4	5.3	0.3	63.5

Table 4.4-19. No Action Alternative - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
	0.5	9.0	2.7	106.8
	0.6	19.2	10.7	248.3
	0.7	20.0	18.7	273.9
	0.8	54.6	19.8	689.5
	0.9	17.1	10.7	237.3
	1.0	1.5	0.2	18.1
Non-Critical Habitat	0	357.8	528.8	15343.3
	0.1	203.8	349.4	7343.6
	0.2	122.4	211.3	4953.4
	0.3	91.1	175.4	3690.6
	0.4	98.4	205.5	4693.5
	0.5	149.0	275.4	6135.1
	0.6	206.7	361.2	9350.6
	0.7	451.1	716.1	20268.6
	0.8	1064.5	2296.7	20266.1
	0.9	753.4	1655.8	46705.2
1.0	16.0	27.1	754.4	

The mileage of routes associated with wildlife corridors, special status wildlife areas, and DCH and non-critical habitat probability model ranges under Alternative 2 is presented in Tables 4.4-20, 4.4-21, and 4.4-22, respectively.

Table 4.4-20. Alternative 2 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Routes Within Wildlife Corridor	1966.4	3901.4	23117.7

Table 4.4-21. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Bendire's Thrasher	10.8	65.0	123.7
Bighorn Sheep	64.7	145.5	755.0
Burrowing Owl	1.8	5.3	20.4
Desert Tortoise (Total within Critical Habitat)	1807.5	3110.0	21171.8
Desert Tortoise (DTRNA)	3.8	127.5	46.1
Desert Tortoise (Fremont-Kramer ACEC)	648.5	1352.2	7607.0
Desert Tortoise (Ord-Rodman ACEC)	258.8	570.2	3032.5

Table 4.4-21. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Desert Tortoise (Pinto Mountains ACEC)	144.3	67.0	1717.7
Desert Tortoise (Superior-Cronese ACEC)	658.3	848.8	7633.1
Fringed Myotis	0.1	0.1	1.2
Gray Vireo	0	0.7	0
Least Bell's Vireo	2.2	7.9	26.6
LeConte's Thrasher	10.1	21.2	113.3
Mojave Fringe-toed Lizard ¹	19.8	30.5	240.1
Northern Sagebrush Lizard	<0.1	<0.1	0.3
Pallid Bat	7.9	17.2	91.2
Southwestern Pond Turtle	0.1	0	1.0
Spotted Bat	0.1	0.2	0.6
Swainson's Hawk	0.1	1.2	0.6
Western Mastiff Bat	1.8	4.9	20.0
Golden Eagle 0-0.5 Miles of active nests	25.6	77.7	293.4
Mohave Ground Squirrel	375.2	822.8	4346.6

1 - Mojave fringe-toed lizard is at risk from any route within its sand habitat between April 1 and September 30.

Table 4.4-22. Alternative 2 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Fremont-Kramer Critical Habitat	0	0	0	0
	0.1	2.9	5.4	34.6
	0.2	12.9	11.0	155.0
	0.3	6.2	9.5	72.9
	0.4	15.9	33.1	188.5
	0.5	20.3	50.0	240.7
	0.6	37.8	98.9	448.6
	0.7	53.7	104.3	634.4
	0.8	188.0	417.1	2203.1
	0.9	393.4	837.5	4562.6
Superior-Cronese Critical Habitat	1.0	0	0	0
	0	0	6.8	0
	0.1	2.7	1.8	32.3
	0.2	2.0	4.4	21.2
	0.3	3.7	6.5	40.3
	0.4	15.6	11.9	167.9
	0.5	8.4	6.3	92.3
	0.6	11.9	19.6	134.9
0.7	51.3	76.2	602.4	

Table 4.4-22. Alternative 2 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
	0.8	188.1	242.5	2179.7
	0.9	380.8	498.3	4469.0
	1.0	12.2	51.6	144.3
Ord-Rodman Critical Habitat	0	7.0	19.6	84.9
	0.1	10.7	25.4	127.2
	0.2	12.3	26.0	145.70
	0.3	4.1	12.0	49.0
	0.4	6.9	21.0	83.9
	0.5	7.7	17.2	92.2
	0.6	12.5	35.4	150.0
	0.7	14.5	33.6	173.9
	0.8	80.6	157.2	956.1
	0.9	105.4	197.8	1230.0
	1.0	0.4	4.8	5.2
Pinto Mountains Critical Habitat	0	0	0	0
	0.1	0.7	0	7.9
	0.2	0.8	0.4	9.3
	0.3	9.9	3.4	119.6
	0.4	5.5	0.1	65.3
	0.5	9.2	2.4	108.6
	0.6	18.8	11.0	218.3
	0.7	19.2	19.5	226.8
	0.8	54.8	19.5	648.4
	0.9	17.0	10.8	204.4
	1.0	1.4	0.3	17.5
Non-Critical Habitat	0	363.9	522.7	4303.4
	0.1	184.3	368.9	2190.7
	0.2	112.9	220.7	1341.6
	0.3	86.3	180.2	1021.3
Non-Critical Habitat (continued)	0.4	99.1	204.8	1165.4
	0.5	142.8	281.5	1688.8
	0.6	184.6	383.3	2173.8
	0.7	404.0	763.3	4765.5
	0.8	935.8	2425.3	10898.3
	0.9	680.2	1728.7	7802.5
1.0	16.1	27.0	183.2	

The mileage of routes associated with wildlife corridors, special status wildlife areas, and DCH and non-critical habitat probability model ranges under Alternative 3 is presented in Tables 4.4-23, 4.4-24, and 4.4-25, respectively.

Table 4.4-23. Alternative 3 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
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Table 4.4-23. Alternative 3 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Routes Within Wildlife Corridor	4094.7	1773.2	63819.4

Table 4.4-24. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/ Parking/Camping (Acreage)
Bendire's Thrasher	52.6	23.2	1126.0
Bighorn Sheep	122.8	87.3	1680.2
Burrowing Owl	2.0	5.1	34.7
Desert Tortoise (Total within Critical Habitat)	2844.3	2073.2	33534.2
Desert Tortoise (DTRNA)	4.0	127.4	67.1
Desert Tortoise (Fremont-Kramer ACEC)	1133.0	867.7	13076.8
Desert Tortoise (Ord-Rodman ACEC)	427.6	401.4	4990.9
Desert Tortoise (Pinto Mountains ACEC)	204.9	6.4	2400.3
Desert Tortoise (Superior-Cronese ACEC)	1044.6	462.8	11907.1
Fringed Myotis	0.1	0.1	1.2
Gray Vireo	0	0.7	0
Least Bell's Vireo	6.6	3.6	79.4
LeConte's Thrasher	16.7	14.6	335.1
Mojave Fringe-toed Lizard ¹	42.9	7.4	712.7
Northern Sagebrush Lizard	<0.1	<0.1	0.3
Pallid Bat	22.9	2.2	444.4
Southwestern Pond Turtle	0.1	0	1
Spotted Bat	0.3	0	3.3
Swainson's Hawk	0.6	0.7	7.0
Western Mastiff Bat	6.6	0	135.7
Golden Eagle 0-0.5 Miles of active nests	58.9	44.3	983.9
Mohave Ground Squirrel	957.2	240.6	18039.5

1 - Mojave fringe-toed lizard is at risk from any route within its sand habitat between April 1 and September 30.

Table 4.4-25. Alternative 3 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Fremont-Kramer	0	0	0	0

Table 4.4-25. Alternative 3 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/ Camping (Acreage)
Critical Habitat	0.1	6.4	1.9	82.5
	0.2	18.0	6.0	213.1
	0.3	10.9	4.8	126.4
	0.4	30.4	18.6	382.0
	0.5	38.5	31.8	437.8
	0.6	58.7	77.9	724.1
	0.7	75.6	82.3	901.3
	0.8	309.6	3.1	3882.0
	0.9	660.7	570.2	7629.5
	1.0	0	0	0
Superior-Cronese Critical Habitat	0	5.0	1.9	59.2
	0.1	3.9	0.7	45.5
	0.2	4.6	1.8	55.4
	0.3	4.4	5.8	56.2
	0.4	19.0	8.5	201.9
	0.5	13.3	1.4	148.5
	0.6	18.1	13.4	211.9
	0.7	70.9	56.6	869.1
	0.8	272.9	157.6	3172.9
	0.9	584.7	294.6	6842.3
1.0	22.5	41.2	284.8	
Ord-Rodman Critical Habitat	0	14.6	12.1	174.7
	0.1	15.9	20.2	189.1
	0.2	20.4	17.9	240.7
	0.3	7.7	8.4	89.9
	0.4	14.77	13.2	176.8
	0.5	9.7	15.3	113.8
	0.6	19.8	28.2	238.4
	0.7	21.8	26.4	263.1
	0.8	130.6	107.2	1537.2
	0.9	159.3	143.9	1852.2
1.0	1.1	4.1	13.1	
Pinto Mountains Critical Habitat	0	0	0	0
	0.1	0.7	0	7.9
	0.2	0.8	0.4	9.3
	0.3	12.6	0.7	150.7
	0.4	5.6	0	66.5
	0.5	11.7	0	136.1
	0.6	27.5	2.4	320.8
	0.7	36.7	1.9	422.7
	0.8	73.6	0.8	864.1
	0.9	26.9	0.9	320.8
10	1.7	0	19.9	
Non-Critical Habitat	0	661.9	224.8	11624.5
	0.1	418.5	134.7	6991.7
	0.2	274.2	59.5	4935.9
	0.3	199.0	67.5	3508.3
	0.4	239.2	64.7	4360.7

Table 4.4-25. Alternative 3 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
	0.5	329.8	94.5	5781.5
	0.6	429.5	138.2	7867.9
	0.7	890.5	276.8	15784.3
	0.8	2246.6	1114.6	39730.8
	0.9	1891.8	517.1	33797.2
	1.0	40.7	2.4	719.9

The mileage of routes associated with wildlife corridors, special status wildlife areas, and DCH and non-critical habitat probability model ranges under Alternative 4 is presented in Tables 4.4-26, 4.4-27, and 4.4-28, respectively.

Table 4.4-26. Alternative 4 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Routes Within Wildlife Corridor	2549.3	3318.7	40000.6

Table 4.4-27. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Bendire's Thrasher	17.7	58.0	349.6
Bighorn Sheep	100.2	110.0	1532.3
Burrowing Owl	1.7	5.4	28.3
Desert Tortoise (Total within Critical Habitat)	2225.9	2691.7	26944.4
Desert Tortoise (DTRNA)	4.7	126.7	78.0
Desert Tortoise (Fremont-Kramer ACEC)	828.9	1171.8	9766.8
Desert Tortoise (Ord-Rodman ACEC)	305.0	524.0	3617.3
Desert Tortoise (Pinto Mountains ACEC)	137.4	73.9	1646.2
Desert Tortoise (Superior-Cronese ACEC)	801.8	705.6	9285.1
Fringed Myotis	0.1	0.1	1.2
Gray Vireo	0	0.7	0
Least Bell's Vireo	5.1	5.0	68.2
LeConte's Thrasher	11.3	20.0	243.4
Mojave Fringe-toed Lizard ¹	21.9	28.4	351.7
Northern Sagebrush Lizard	<0.1	<0.1	0.3
Pallid Bat	6.0	19.1	125.0

Table 4.4-27. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Southwestern Pond Turtle ²	0.1	0	1.0
Spotted Bat	0	0.3	0
Swainson's Hawk	0.1	1.3	1.0
Western Mastiff Bat	4.7	1.9	100.7
Golden Eagle 0-0.5 Miles of active nests	32.1	71.1	520.7
Mohave Ground Squirrel	564.7	633.3	11219.8

1 - Mojave fringe-toed lizard is at risk from any route within its sand habitat between April 1 and September 30.

2 - The single known occurrence of Southwestern Pond Turtle does not coincide with the route network. However, there is the potential for this species to occur throughout the Afton Canyon ACEC within suitable habitat.

Table 4.4-28. Alternative 4 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Fremont-Kramer Critical Habitat	0	0	0	0
	0.1	4.7	3.6	59.2
	0.2	15.6	8.3	187.4
	0.3	9.0	6.7	105.9
	0.4	22.1	26.8	262.6
	0.5	25.3	45.0	298.7
	0.6	49.1	87.6	610.3
	0.7	66.7	91.3	806.4
	0.8	213.1	392.1	2605.9
	0.9	516.4	714.5	6459.8
	1.0	0	0	0
Superior-Cronese Critical Habitat	0	0.4	6.4	5.9
	0.1	3.0	1.6	34.9
	0.2	4.0	2.4	47.3
	0.3	4.4	5.8	52.5
	0.4	19.2	8.3	208.2
Superior-Cronese Critical Habitat (continued)	0.5	12.5	2.1	140.8
	0.6	15.7	15.8	184.3
	0.7	62.4	65.1	765.6
	0.8	243.6	187.1	2851.1
	0.9	462.7	416.6	5519.0
	1.0	19.1	44.6	249.3
Ord-Rodman Critical Habitat	0	10.6	16.1	127.5
	0.1	13.7	22.4	164.5
	0.2	15.2	23.1	181.0
	0.3	5.5	10.6	65.6
	0.4	11.9	16.1	144.7
	0.5	9.7	15.3	116.3
	0.6	15.7	32.2	195.7

Table 4.4-28. Alternative 4 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
	0.7	17.9	30.2	218.6
	0.8	97.2	140.7	1173.0
	0.9	120.5	182.9	1430.1
	1.0	0.5	4.7	6.2
Pinto Mountains Critical Habitat	0	0	0	0
	0.1	0.7	0	7.9
	0.2	0.8	0.4	9.3
	0.3	10.6	2.8	126.6
	0.4	4.3	1.2	51.9
	0.5	9.0	2.6	106.8
	0.6	19.4	10.5	229.6
	0.7	20.0	18.7	240.0
	0.8	55.9	18.5	665.8
	0.9	17.0	10.8	210.2
Non-Critical Habitat	1.0	1.5	0.2	18.1
	0	464.6	422.2	8234.8
	0.1	244.4	308.9	4098.5
	0.2	137.9	195.8	2435.6
	0.3	104.0	162.5	1830.9
	0.4	118.5	185.4	2215.4
	0.5	171.4	253.0	3124.6
	0.6	231.7	336.2	4378.4
	0.7	497.1	670.4	9407.3
	0.8	1133.2	2229.6	21215.2
0.9	813.4	1595.6	15608.2	
1.0	15.5	27.6	286.9	

The mileage of routes associated with wildlife corridors, special status wildlife areas, and DCH and non-critical habitat probability model ranges under Alternative 5 is presented in Tables 4.4-29, 4.4-30, and 4.4-31, respectively.

Table 4.4-29. Alternative 5 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Routes Within Wildlife Corridor	2579.7	3288.6	40735.7

Table 4.4-30. Alternative 5 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Bendire's Thrasher	17.9	57.8	354.7

Table 4.4-30. Alternative 5 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Bighorn Sheep	103.3	106.9	1627.7
Burrowing Owl	3.3	3.8	63.6
Desert Tortoise (Total within Critical Habitat)	2218.8	2699.0	26860.8
Desert Tortoise (DTRNA)	4.8	126.7	80.3
Desert Tortoise (Fremont-Kramer ACEC)	812.9	1187.8	9584.2
Desert Tortoise (Ord-Rodman ACEC)	337.1	491.9	3973.0
Desert Tortoise (Pinto Mountains ACEC)	135.6	75.7	1624.3
Desert Tortoise (Superior-Cronese ACEC)	780.8	726.2	9031.0
Fringed Myotis	0.1	0.1	1.2
Gray Vireo	0	0.7	0
Least Bell's Vireo	7.1	3.0	92.1
LeConte's Thrasher	11.9	19.4	250.9
Mojave Fringe-toed Lizard ¹	20.5	29.8	304.6
Northern Sagebrush Lizard	<0.1	<0.1	0.3
Pallid Bat	4.0	21.1	80.0
Southwestern Pond Turtle ²	0.1	0	1.0
Spotted Bat	0	0.3	0
Swainson's Hawk	0.1	1.3	1.0
Western Mastiff Bat	5.1	1.5	108.1
Golden Eagle 0-0.5 Miles of active nests	35.6	67.5	598.0
Mohave Ground Squirrel	589.0	609.0	11678.6

1 - Mojave fringe-toed lizard is at risk from any route within its sand habitat between April 1 and September 30.

2 - The single known occurrence of Southwestern Pond Turtle does not coincide with the route network. However, there is the potential for this species to occur throughout the Afton Canyon ACEC within suitable habitat.

Table 4.4-31. Alternative 5 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Fremont-Kramer Critical Habitat	0	0	0	0
	0.1	4.1	4.1	53.2
	0.2	15.6	8.3	187.4
	0.3	8.6	7.0	103.2
	0.4	22.8	26.2	270.2
	0.5	26.9	43.4	317.9
	0.6	46.3	90.4	577.9
	0.7	64.4	93.5	783.5
	0.8	215.3	389.8	2665.2
	0.9	504.7	726.7	6308.5

Table 4.4-31. Alternative 5 - Mileage of Routes within USGS Probability Model Ranges

Desert Tortoise Critical Habitat Area	Probability from USGS Model	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/ Camping (Acreage)
	1.0	0	0	0
Superior-Cronese Critical Habitat	0	0	6.8	0.2
	0.1	2.9	1.7	33.8
	0.2	4.0	2.4	47.3
	0.3	4.4	5.8	52.4
	0.4	21.0	6.5	227.5
	0.5	12.5	2.1	141.2
	0.6	15.8	15.6	186.3
	0.7	62.0	65.5	765.1
	0.8	239.5	190.9	2807.6
	0.9	446.8	432.4	5328.0
	1.0	19.1	44.6	249.3
Ord-Rodman Critical Habitat	0	10.6	16.1	127.5
	0.1	15.5	20.6	186.7
	0.2	15.5	22.8	185.9
	0.3	6.6	9.4	79.9
	0.4	12.5	15.4	152.4
	0.5	10.1	14.9	120.6
	0.6	18.0	29.9	222.0
	0.7	20.7	27.5	250.0
	0.8	107.6	130.2	1288.5
	0.9	130.5	172.7	1533.7
	1.0	0.5	4.7	6.2
Pinto Mountains Critical Habitat	0	0	0	0
	0.1	0.7	0	7.9
	0.2	0.8	0.4	9.3
	0.3	10.0	3.4	119.5
	0.4	3.5	2.1	41.7
	0.5	8.8	2.9	103.7
	0.6	17.6	12.3	208.6
	0.7	20.2	18.5	242.9
	0.8	54.9	19.4	655.1
	0.9	16.1	11.7	194.9
	1.0	1.5	0.2	18.1
Non-Critical Habitat	0	468.5	418.3	8403.7
	0.1	248.3	305.0	4224.7
	0.2	142.3	191.3	2509.1
	0.3	107.4	159.1	1858.4
Non-Critical Habitat (continued)	0.4	130.1	173.8	2448.9
	0.5	185.9	238.7	3418.5
	0.6	244.1	324.1	4570.8
	0.7	527.6	639.7	9940.7
	0.8	1219.6	2141.4	22827.7
	0.9	984.0	1424.9	18826.1
	1.0	20.3	22.8	371.4

Wildlife Corridors

Alternative 2 has the least potential impact on wildlife corridors with 389.4 fewer miles of OHV Open and OHV Limited routes, and 46,274.7 fewer acres of stopping/parking/camping as compared to the No Action Alternative. Alternative 3 has the highest potential impact on wildlife corridors with 1,738.9 miles more of OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 5 has a greater impact to wildlife corridors as compared to the No Action Alternative, with 224 more miles of OHV Open and OHV Limited routes, but a reduced impact from stopping/parking/camping with 28,656.7 fewer acres than the No Action Alternative. The No Action Alternative has the greatest potential to impact wildlife corridors from stopping/parking/camping with an approximate total of 69,392.4 acres.

Wildlife Special Status Species

Alternative 2 has the least amount of miles of OHV Open and OHV Limited routes in DCH with 1807.5 miles. Alternative 3 has the greatest amount of miles in DCH with 652.3 miles more of OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 5 has an intermediate potential for impacts to DCH with 26.8 more miles of OHV Open and OHV Limited routes as compared to the No Action Alternative. The impacts to special status species' habitat overall for Alternative 5 are greatly reduced with 625.5 less miles of OHV Open and OHV Limited routes than Alternative 3. Alternative 5 also reduces impacts from stopping/parking/camping with 3,808.6 acres less than the No Action Alternative. Alternative 5 is relatively consistent with the No Action Alternative with regard to OHV Open and OHV Limited routes with the exception of the following species and area: Bendire's thrasher (Alternative 5 has 9.6 miles more OHV Open and OHV Limited routes than the No Action Alternative), DTRNA (Alternative 5 has 3.1 miles more OHV Open and OHV Limited routes than the No Action Alternative), Least Bell's Vireo (Alternative 5 has 2.4 miles more OHV Open and OHV Limited routes than the No Action Alternative) an MGS (Alternative 5 has 64.8 miles more OHV Open and OHV Limited routes than the No Action Alternative). For each of these species, with the exception Least Bell's Vireo (76.3 acres more OHV Open and OHV Limited routes in Alternative 5), the No Action Alternative has a greater impact with more stopping/parking/camping acres than Alternative 5.

4.4.2.5 Indirect Impacts to Desert Tortoise

DCH and DT Non-critical Habitat

Alternative 2 has the lowest potential for impact to high quality (model probability of 0.5 or greater) within DCH with 165.4 miles of OHV Open and OHV Limited routes. Alternative 2 has the least impact to desert tortoise habitat outside of DCH with 989.3 miles of OHV Open and OHV Limited routes. Alternative 3 has the greatest impact to high quality (model probability of 0.5 or greater) within DCH with 67.3 more miles of OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 3 also has the greatest impact to high quality (model probability of 0.5 or greater) desert tortoise habitat outside of DCH with 1,100.1 more miles of OHV Open and OHV Limited routes than the No Action Alternative. Alternative 5 has a greater impact to high quality (model probability of 0.5 or greater) within DCH with 15.8 miles more of OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 5 also has a greater impact to high quality (model probability of 0.5 or greater) desert

tortoise habitat outside of DCH with 260 more miles of OHV Open and OHV Limited routes as compared to the No Action Alternative. Moreover, Alternative 5 has a lower potential impact with 3808.7 fewer acres of stopping/parking/camping within DCH and 60,104.4 fewer acres for desert tortoise habitat outside of DCH for all probability ranges as compared to the No Action Alternative.

Table 4.4-32 summarizes the indirect impacts associated with all alternatives of the WMRNP. BLM cannot designate routes on non-BLM lands, however, route designation on BLM-managed lands may result in the development of linear features on lands which are not under the jurisdiction of BLM. For example, in an area which has private lands intermixed with BLM-managed lands, linear features may develop on private lands as the public traverses private lands to continue along a route which has been designated OHV Open or OHV Limited on BLM-managed lands. These linear features can be divided into two categories: those that can be accessed only through BLM-managed lands (that is, the non-BLM parcel(s) are completely surrounded by BLM-managed lands) and those which can be accessed through adjoining private lands without the need to pass through BLM-managed lands. The highest amount of linear features on non-BLM Lands accessible by BLM-Managed Lands that may result in indirect impacts is the 90 percent model probability range from the USGS Model, and the least is the 100 percent model probability range.

Table 4.4-32. All Alternatives - Areas of Indirect Impact

Areas of Indirect Impact	Probability from USGS Model	Linear Features (Mileage)
Linear Features on Non-BLM Lands Accessible by BLM-Managed Lands Only	0	71.2
	0.1	88.2
	0.2	74.2
	0.3	91.0
	0.4	130.6
	0.5	170.5
	0.6	155.7
	0.7	301.9
	0.8	1037.1
	0.9	1290.2
	1.0	24.9
Linear Features on Non-BLM Lands Accessible from Private Lands	0	0
	0.1	0.2
	0.2	3.7
	0.3	1.8
	0.4	12.5
	0.5	6.7
	0.6	8.6
	0.7	24.6
	0.8	80.3
	0.9	47.7
	1.0	0

4.4.2.6 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for wildlife resources and wildlife corridors may include but are not limited to:

- Construct wildlife bypass;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Seasonal use restriction;
- Re-align route to avoid environmentally sensitive area;
- Install access type restrictor;
- Restrict stopping/parking/camping;
- Add parking/camping area;
- Narrow route;
- Construct or install educational information such as signs;
- Install barriers and maintain or upgrade existing barriers;
- Remove attractants;
- Monitor the route for signs of increasing impacts to a sensitive resource; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

Additional measures were developed specifically for special-status species, desert tortoise habitat in DT ACECs, near active golden eagle nests, and in the Mohave Ground Squirrel Core Areas. These measures are described below.

For tortoise habitat in DT ACECs, additional potential minimization and mitigation measures include:

- Install Wildlife Safety Zone signs;
- Re-align route to avoid designated area;
- Install fencing; and
- Maintain berms so that they do not adversely impact the movement of desert tortoise.

For golden eagle nests additional potential minimization and mitigation measures include seasonal limitations during nesting season.

For the Mohave Ground Squirrel Core Areas, additional potential minimization and mitigation measures include:

- Construct wildlife bypass;
- Install Wildlife Safety Zone signs; and
- Re-align route to avoid designated area.

Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to wildlife habitat and individuals. Under the No Action Alternative, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs would reduce the potential for direct vehicle strikes to wildlife, and for degradation of wildlife habitat in areas adjacent to routes, as compared to pre-2006 conditions before these limitations were enacted.

Under Alternatives 2, 3, 4, and 5, limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and further limiting stopping and parking limits would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for direct or indirect effects to wildlife habitat or individuals. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific wildlife impacts are considered before authorizing new OHV Open or OHV Limited routes.

4.4.2.7 Residual Impacts After Implementation of Mitigation Measures

Residual effects to wildlife would continue after application of mitigation measures, both with continued OHV use, and following designation of routes as transportation linear disturbances. Although impacts would be reduced from those that would have existed without mitigation measures, OHVs could still impact special-status wildlife, wildlife habitat, and wildlife corridors. Impacts would continue to occur due to direct strikes by OHVs, OHV noise, and disturbance of soil and vegetation in wildlife habitat and corridors. Designation of routes as transportation linear disturbances in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.5 Socioeconomics and Environmental Justice

4.5.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the proposed action on socioeconomics in the planning area, including the effects of OHV use on recreation levels and the resulting socioeconomic impacts. It did not specifically analyze impacts associated with the route network to environmental justice populations. The Court's Summary Judgment and Remedy order did not specifically reach conclusions, or provide direction, regarding the sufficiency of the socioeconomic analysis, or the need for analysis of environmental justice impacts.

4.5.2 Impacts Common to All Alternatives

This chapter provides an analysis of potential socioeconomic and environmental justice impacts associated with comprehensive travel management for OHV access and recreational use within the WEMO Planning Area for the alternatives.

As part of the development of the WEMO Plan (BLM 2006), the agency commissioned an analysis of the impact of the Plan on socioeconomic activity (Gobar 2003). In support of this SEIS for the WMRNP, BLM reviewed that report's analysis of the impact of recreation on employment and income in the planning area. Although specific recreational user numbers and dollar values of socioeconomic activity have increased since 2003, the report's general

discussion and conclusions regarding the impact of the transportation network on recreation-driven socioeconomic activity are still valid, and are generally common to all alternatives.

The transportation network in the West Mojave Planning Area impacts socioeconomics by meeting the needs of the resident and visitor population for accessing housing, employment locations, and recreation, as well as increasing the transport of raw materials, food, fuels, and commercial products associated with modern society. The Motorized Vehicle Access (MVA) Element of the CDCA Plan established overarching goals and objectives providing for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners, and other public agencies, and continuing to recognize ways of access and opportunities for exploration and development on public lands, including access to critical mineral resources, potential energy resources, and minerals of local and State importance. The network also impacts socioeconomics in providing access to, and a network to be used for, outdoor recreational activities. In response to resident and visitor populations, the MVA Element also specified that the transportation network was to be designated, to the degree possible, to avoid adverse impacts to desert resources.

The impacts of the WMRNP can be both beneficial and adverse to socioeconomic conditions. Designation of major arterial routes as part of the WMRNP has a beneficial effect in providing access as needed for housing, industry, employment, recreation, and transport of goods within and across the planning area. Conversely, designation of routes as transportation linear disturbances can be adverse by limiting access, or by increasing the time and cost needed to access multiple-uses. These actions can, in turn, have a localized impact on specific commercial operations that benefit recreation, such as campgrounds, hotels, restaurants, and stores. This impact would be beneficial in areas where routes remain open, and adverse in areas where routes are designated as transportation linear disturbances.

For routes in rural areas, maintenance and designation of OHV routes would positively impact OHV-based recreation and tourism. Recreation and tourism, in turn, create jobs and generate tax revenue, having a beneficial effect on socioeconomic conditions. Sectors most directly influenced by recreation activities include: selected transportation services; retail activities involving the sale of food, provisions, gas, and meals; specialized services such as lodging, vehicle repair, and recreation; and directed government services (rangers and sheriff). Overall, employment identified for each of these sectors is primarily driven by current urbanization throughout the West Mojave, not recreation visitors. Recreational visits are expected to augment identified employment levels, but not necessarily drive a significant share of jobs. As an example, OHV usage throughout the West Mojave is broadly estimated to attract roughly 2 million visitors per year. This level of trip-volume is consistent with annual shopper-trips describing a busy neighborhood shopping center (i.e., 120,000-square-foot center providing roughly 200 retail jobs) (Gobar 2003). Most OHV visitors, however, are part of a larger group, which significantly reduces realistic shopper-trip potential associated with OHV recreation, particularly for non-dining retail expenditures. In addition, a substantial portion of OHV trip-related expenditures are made within the hometown location of recreation visitors who primarily drive to the planning area from the metropolitan areas of Southern California and the southern portion of the Central Valley. Consequently, expenditures are not likely to create more than 50 retail sector jobs providing \$30,360 in annual income per worker, on average. A greater portion of OHV visitors can be expected to make dining-related expenditures during a given visit. Sixty percent of visitors purchase a hot or cold meal while within the West Mojave, suggesting

equivalent economic benefits for roughly 140 restaurant jobs providing an average of \$14,960 in annual income per worker, on average (Gobar 2003). On a combined basis, the above levels of retail for OHV visitor expenditures represent roughly 190 jobs or about 0.8 percent of food store and dining retail sector jobs that currently exist throughout the West Mojave.

Although increased recreation and tourism can have a beneficial effect on local businesses, the proximity of OHV routes and trails can also reduce property values for individual home owners, due to increased noise. According to a study in Road Engineering Journal (October 1, 1997), housing units lose 0.4 percent of their value for every noise decibel above the threshold level.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires each federal agency to “Identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.” OHV use of the transportation network would not result in production of toxic or hazardous products.

The WMRNP contains low-income and minority populations that qualify as environmental justice populations. Figure 3.5-1 identifies the locations of census tracts within the planning area containing greater than 50% minority and those tracts with identified low-income populations along with boundaries of TMAs. Environmental impacts associated with different types of OHV recreation that could impact all populations include:

- OHV Noise
- Air Quality and Public Health
- Water Quality and Quantity
- Damage to Cultural Resources
- Carbon Emissions and Impacts to Greenhouse Gases
- Loss of Recreation Access and Opportunity
- Loss of Soil and Vegetation / Scenic and Landscape Values

These impacts are discussed in the relevant sections. However, should the impacts of these burdens fall disproportionately on people in US Census tracts identified here, an environmental justice issue may arise.

Impacts to these populations are both beneficial and adverse. Route designations can be beneficial by augmenting both recreational and employment opportunities for areas that contain environmental justice populations. Recreational tourism activity would promote employment opportunities in sectors such as transportation services and retail. Retail services typically involve the sale of food and provisions that facilitate outdoor recreation. Additionally, increased employment would generate income and increased tax revenue within the planning area, potentially benefiting minority communities. Low cost local recreational options would also be a beneficial impact to environmental justice populations. The current route network meets demand of localities inside and outside of the planning area, including the urban areas of Los Angeles and Las Vegas, thus benefiting environmental justice populations that may reside out of the planning area. Adverse impacts would result from noise emissions and pollution associated with OHV use near environmental justice populations.

Local socioeconomic conditions, including employment rates, addition or loss of industries, military installations, and even single employers can impact the local or regional economies of San Bernardino, Kern, Los Angeles, and Inyo counties. Grazing is anticipated to continue at or below current stocking rates. These stocking levels are at their lowest point when compared to historic levels, and if the WEMO Plan is fully implemented, are expected to continue to decrease. Therefore grazing continues to have a nominal influence on local economies in the area.

4.5.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to socioeconomic or environmental justice conditions from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Because no changes would be made in the No Action Alternative, there would be no impacts to socioeconomic or environmental justice conditions as a result of the No Action Alternative.

Under Alternative 2, the seasonal limitations on “C” routes may reduce their use for OHV events, and thus reduce socioeconomic activity that could have occurred in the local area during other months.

Under Alternative 3, designation of the routes for OHV events would provide a socioeconomic benefit to businesses in those local areas.

Under Alternatives 4 and 5, the “C” routes that are to the northeast of the Spangler Hills Open Area above the Randsburg Wash Road and those found within the Summit Range and east of Highway 395 would be available for competitive OHV events managed under a SRP. Designation of the routes for OHV events would provide a socioeconomic benefit to businesses in those local areas. The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area under Alternatives 4 and 5 would be made with consideration of potential socioeconomic and environmental justice impacts. This action would result in an increase in socioeconomic activity in that local area.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

Recreational use of the lakebeds is expected to increase socioeconomic activity in the local areas near those lakebeds. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could affect socioeconomic activity in those areas.

Under Alternative 2, the closure of Koehn lakebed may reduce socioeconomic activity in that local area. Because Koehn lakebed is currently receiving relatively light use, this impact is expected to be small. This plan amendment decision would likely have no net beneficial or adverse impact on socioeconomic activity on a regional basis, but it may result in these impacts occurring on a local basis. Under Alternative 2, Coyote dry lake and Cuddeback dry lake would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and there would be no change in impacts to socioeconomic activity or environmental justice populations at those locations.

Under Alternatives 3, 4, and 5, the designation of Koehn dry lake as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit” may reduce socioeconomic activity in that local area. Under Alternatives 3, 4, and 5, Coyote dry lake and Cuddeback dry lake would be OHV Open use. Therefore, this decision may have a direct, beneficial impact on local businesses near Coyote and Cuddeback dry lakes.

Under all alternatives, Chisholm Trail dry lake would remain OHV Closed use, so there would be no change in socioeconomic conditions or impacts to environmental justice populations.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

There are currently no known impacts to socioeconomics or environmental justice issues associated with the Rand-Fremont area. Under the No Action Alternative and Alternative 2, no impacts would occur. Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Eliminating the permit requirement is not expected to have any effect on socioeconomics or environmental justice populations.

Under Alternatives 4 and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Modify Stopping and Parking Limitations

Under all alternatives, the allowable stopping, parking, and camping distances are not expected to have any effect on OHV use of routes for recreation or other authorized uses, and would therefore not have any impact on socioeconomics or environmental justice populations.

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, local socioeconomic conditions, including employment rates, addition or loss of industries, military installations, and even single employers can impact the local or regional economies of San Bernardino, Kern, Los Angeles, and Inyo counties. Grazing is anticipated to continue at or below current stocking rates. These stocking levels are at their lowest point when compared to historic levels, and if the WEMO Plan is fully implemented, are expected to continue to decrease. Therefore grazing continues to have a nominal influence on local economies in the area.

Under Alternative 2, grazing would be discontinued on 107,779 acres of the Ord Mountain Allotment, 6,726 acres of the Cantil Common Allotment, and 3,323 acres of the Shadow Mountain Allotment. The cattle grazing operation on the Ord Mountain Allotment would be negatively impacted such that this grazing operation would no longer be considered economically viable. Grazing in the planning area as a whole is anticipated to continue at or below current stocking rates, which are at their lowest point when compared to historic levels. Overall, grazing continues to have a nominal influence on local economies in the area. The impact of the reduction in grazing use of the allotments may have a direct, adverse impact on the local economy near the allotments, although the impact would be expected to be negligible.

4.5.4 Differences in Impacts Among Route Designation Alternatives

In general, OHV access and use has a beneficial impact on socioeconomics by creating a more connected regional transportation network, facilitating local access for businesses, commercial users and residents, and providing recreation access and opportunities. However, as discussed in Section 4.1.3, the analysis in this Chapter is based on a general assumption that the overall size of the route network is unrelated to the total miles traveled on the network within the planning area. Socioeconomic activity associated with recreation would not be substantively affected by the overall size of the network and, therefore, overall socioeconomic impacts in the planning area would not vary among route network alternatives. Localized effects to these resources would occur depending on specific locations of opened routes and routes designated as transportation linear disturbances, but the regional scale of recreation and associated socioeconomic activity would not change.

Environmental justice minority and low-income populations are located within the WEMO Planning Area. Environmental justice low-income and minority populations are portrayed in Figure 3.5-1. Details all of the census tracts within the project area, including the associated route mileage within each census tract for the No Action Alternative and Alternative 2, 3, 4, and 5 are presented in Tables 4.5-1, 4.5-2, 4.5-3, 4.5-4, and 4.5-5, respectively.

Table 4.5-1. No Action Alternative - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Inyo	8*	489.4	0	0	429.8
Kern	52.01*	106.7	0	0	304.6
	52.03* ¹	160.5	0	0	723.7
	53 ¹	0.2	0	0	0.2
Kern (continued)	54.02	0	0	0	1.0
	55.01	371.9	0.6	1.1	815.4
	55.06	2.8	0	0	26.8
	55.08 ¹	1.9	0	0	21.7
	57	0.1	0	0	1.2
	58.02 ¹	0	0	0	1.3
	60.04*	52.3	0	0	178.2
	60.07*	15.7	0	3.9	196.6
	Los Angeles	9001.02 ¹	6.8	0	0
9002.01		0	0	0	1.3
9012.09*		0.5	0	0	0
9012.10		0.1	0	0	0
9012.13		0	0	0	0
9100.01 ²		0	0	0	0.1
9100.02		0	0	0	1.5
9101.01 ^{1,2}		0	0	0	0
9102.06		0	0	0	0
9102.09	0	0	0	0.3	

Table 4.5-1. No Action Alternative - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
	9108.04*	0	0	0	4.4
	9108.05*	0	0	0	0
	9108.12	0	0	0	0.7
	9110.01	0	0	0	8.3
	9800.03	0	0	0	0.1
Riverside	469*	51.8	0	0	30.6
San Bernardino	100.17	0	0	0	11.6
	100.24 ¹	0.6	0	0	13.2
	103* ¹	920.9	0	0	644.6
	104.02	0	0	0	0.3
	104.09*	229.1	0	1.1	193.3
	104.10	1.4	0	0	12.1
	104.11	0	0	0	2.0
	104.13 ¹	7.8	0	1.1	9.3
	104.15	0	0	0	0.2
	104.16 ¹	42.6	0	0	152.6
	104.17 ¹	3.4	0	9.4	11.8
	104.19 ¹	1.7	0	0	3.6
	104.20	1.2	0	0	10.7
	104.22	0.1	0	0	0.5
	104.23 ¹	95.8	0	0	252.1
104.24 ¹	217.1	0	5.0	394.7	
San Bernardino (continued)	116	1287.8	0	0	1484.4
	117 ¹	58.4	0	0	143.0
	118	2.8	0	0	11.8
	119 ¹	140.8	0	1.6	163.0
	120.01	1.7	0	0	1.9
	120.02	0.9	0	0	0.9
	121.01	8.1	0	0.7	26.3
	121.03	29.3	0	1.7	25.0
	121.04 ¹	328.8	0	0	798.1
	250	3.1	0	0	1.9
	89.01 ¹	500.9	0	0	803.8
	91.17 ¹	34.2	0	0	114.1
	93 ¹	0.1	0	0	0
	95 ¹	0.3	0	0.8	1.5
	97.08	83.3	0	0.1	134.7
	97.16 ¹	0.1	0	0	0.7
	99.05 ^{1,2}	0	0	0	0
WEMO TOTAL		5263	0.6	26.5	8205.7

Table 4.5-1. No Action Alternative - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
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*Tracts transect the planning area boundary.

1 - Tract contains low-income environmental justice population.

2 - Tract contains minority environmental justice population.

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Inyo	8*	382.7	0	1.7	534.9
Kern	52.01*	91.9	1.5	1.0	317.0
	52.03* ¹	137.8	0	0.1	746.3
	53 ¹	0	0	0	0
	54.02	0.4	0	0	0.7
	55.01	295.9	27.4	1.1	864.7
	55.06	3.8	0	0	25.7
	55.08 ¹	2.5	0	0	21.2
	57	0.1	0	0	1.2
	58.02 ¹	0	0	0	1.3
	60.04*	69.8	0	0	160.7
	60.07*	56.4	0	0	159.9
651	0	0	0	0	
Los Angeles	9001.02 ¹	14.5	0	0	26.5
	9002.01	0	0	0	1.3
	9012.09*	0.5	0	0	0
	9012.10	0.1	0	0	0
	9012.13	0	0	0	0.8
	9100.01 ²	0	0	0	0.1
	9100.02	0	0	0	1.5
	9101.01 ^{1,2}	0	0	0	0
	9102.06	0	0	0	1.2
	9102.09	0	0	0	0.3
	9108.04*	0	0	0	4.4
	9108.05*	0	0	0	0.4
	9108.12	0.4	0	0	0.3
	9110.01	0.9	0	0	7.4
9800.03	0.1	0	0	0	
Riverside	469*	48.7	0	0	33.7
San Bernardino	100.17	0.4	0	0	11.2
	100.24 ¹	3.0	0	0	10.8

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
San Bernardino (continued)	103* ¹	820.6	2.1	4.3	738.5
	104.02	0.1	0	0	0.4
	104.09*	239.4	0	1.1	182.9
	104.10	2.5	0	0	11.0
	104.11	0.8	0	0	1.2
	104.13 ¹	11.5	0	1.1	5.6
	104.15	0	0	0	0.2
	104.16 ¹	43.1	0	0	152.1
	104.17 ¹	10.1	0	9.4	5.1
	104.19 ¹	1.3	0	0	4.0
	104.20	2.5	0	0	9.4
	104.22	0.1	0	0	0.5
	104.23 ¹	97.1	0	0	250.7
	104.24 ¹	256.7	0	5.0	354.8
	116	1011.6	0	1.0	1759.1
	117 ¹	53.7	0	0	147.6
	118	1.2	0	0	13.4
	119 ¹	125.7	0	1.6	178.0
	120.01	2.5	0	0	1.1
	120.02	0.9	0	0	0.9
	121.01	6.4	0	0.7	27.9
	121.03	28.4	0	1.7	25.9
	121.04 ¹	248.5	0	0	878.4
	250	3.1	0	0	1.9
	89.01 ¹	376.3	0	5.6	922.8
	91.17 ¹	31.4	0.2	0	116.8
	931	0	0	0	0
	951	0	0	0	0
	97.07	0	0	0	0
	97.08	84.9	0	0.1	133.0
97.16 ¹	0.1	0	0	0.7	
99.05 ^{1,2}	0	0	0	0.3	
WEMO TOTAL		4570.4	31.2	35.5	8857.7

*Tracts transect the planning area boundary.

1 - Tract contains low-income environmental justice population.

2 - Tract contains minority environmental justice population.

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Inyo	8*	804.9	28.4	5.0	80.9
Kern	52.01*	151.9	0	11.9	247.5
	52.03* ¹	547.3	0	21.2	315.7
	53 ¹	0	0	0	0
	54.02	0.9	0	0	0.2
	55.01	861.8	35.4	1.1	290.8
	55.06	24.9	0	0	4.6
	55.08 ¹	21.5	0	0	2.1
	57	1.3	0	0	0
	58.02 ¹	1.3	0	0	0.1
	60.04*	156.4	0.3	14.4	59.3
60.07*	174.7	0	4.9	36.7	
Los Angeles	9001.02 ¹	39.2	0	0	1.8
	9002.01	1.2	0	0	0.1
	9012.09*	0.5	0	0	0
	9012.10	0	0	0	0
	9012.13	0.8	0	0	0
	9100.01 ²	0.1	0	0	0
	9100.02	1.1	0	0	0.3
	9101.01 ^{1,2}	0	0	0	0
	9102.06	1.2	0	0	0
	9102.09	0.3	0	0	0
Los Angeles (continued)	9108.04*	3.9	0	0	0.5
	9108.05*	0.1	0	0	0.3
	9108.12	0.5	0	0	0.1
	9110.01	7.3	0	0	1.0
	9800.03	0.1	0	0	0
Riverside	469*	76.8	0	0	5.5
San Bernardino	100.17	11.0	0	0	0.6

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
	100.24 ¹	10.2	0	0	3.6
	103* ¹	1213.7	0	0	349.0
	104.02	0.5	0	0	0
	104.09*	385.7	0	1.1	36.7
	104.10	13.5	0	0	0
	104.11	1.9	0	0	0.1
	104.13 ¹	12.1	0	1.1	5.0
	104.15	0.2	0	0	0
	104.16 ¹	194.2	0	0	1.0
	104.17 ¹	10.8	0	9.4	4.4
	104.19 ¹	4.8	0	0	0.6
	104.20	10.4	0	0	1.6
	104.22	0.7	0	0	0
	104.23 ¹	331.1	0	0.7	16.0
	104.24 ¹	565.7	0	4.6	46.1
	116	1707.5	3.2	1.0	1060.0
	117 ¹	75.2	0	0	126.1
	118	14.2	0	0	0.4
	119 ¹	227.3	0	1.6	76.4
	120.01	3.6	0	0	0
	120.02	1.0	0	0	0.8
	121.01	9.0	0	0.7	25.3
	121.03	52.8	0	1.7	1.5
	121.04 ¹	424.7	0	0	702.1
	250	3.4	0	0	1.5
	89.01 ¹	853.3	21.5	4.5	425.4
	91.17 ¹	85.7	0	0	62.7
	93 ¹	0	0	0	0
	95 ¹	0	0	0	0
	97.08	142.1	0	0.1	75.9
	97.16 ¹	0.1	0	0	0.7
	99.05 ^{1,2}	0	0	0	0.3
WEMO TOTAL		9246.4	88.8	85	4071.3

*Tracts transect the planning area boundary.

1 - Tract contains low-income environmental justice population.

2 - Tract contains minority environmental justice population.

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Inyo	8*	514.8	33.6	10.3	360.6
Kern	52.01*	110.5	1.5	3.5	295.9
	52.03* ¹	257.1	0	20.4	606.7
	53 ¹	0	0	0	0
	54.02	0	0	0	1.1
	55.01	406.4	44.5	1.1	737.2
	55.06	2.8	0	0	26.7
	55.08 ¹	1.9	0	0	21.7
	57	0.6	0	0	0.7
	58.02 ¹	0	0	0	1.3
	60.04*	58.8	0	17.5	154.2
60.07*	22.5	0	7.1	186.6	
Los Angeles	9001.02 ¹	7.2	0	0	33.8
	9002.01	0	0	0	1.2
	9012.09*	0.5	0	0	0
	9012.10	0	0	0	0
	9012.13	0	0	0	0.8
	9100.01 ²	0	0	0	0.1
	9100.02	0	0	0	1.5
	9101.01 ^{1,2}	0	0	0	0
	9102.06	0	0	0	1.2
	9102.09	0	0	0	0.3
	9108.04*	0	0	0	4.4
	9108.05*	0	0	0	0.4
	9108.12	0	0	0	0.6
	9110.01	0	0	0	8.3
9800.03	0	0	0	0.1	
Riverside	469*	50.8	0	0	31.6
San Bernardino	100.17	1.0	0	0	10.6
	100.24 ¹	1.6	0	0	12.2
	103* ¹	987.2	0	0	578.3
	104.02	0.1	0	0	0.4
	104.09*	231.5	0	2.3	189.9
	104.10	1.8	0	0	11.7
	104.11	0	0	0	2.0
	104.13 ¹	7.8	0	1.1	9.3
	104.15	0	0	0	0.2
	104.16 ¹	40.1	0	0	155.1
	104.17 ¹	1.6	0	11.0	11.9
	104.19 ¹	1.7	0	0	3.6
104.20	1.2	0	0	10.8	

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
	104.22	0.1	0	0	0.5
	104.23 ¹	95.8	0	3.9	248.1
	104.24 ¹	200.9	0	6.1	409.4
	116	1288.1	0	1.0	1482.6
	117 ¹	58.1	0	0	143.2
	118	2.9	0	0	11.7
	119 ¹	141.5	0	1.6	162.3
	120.01	2.8	0	0	0.8
	120.02	0.9	0	0	0.9
	121.01	6.7	0	0.8	27.7
	121.03	30.8	0	1.7	23.4
	121.04 ¹	333.4	0	0	793.4
	250	3.5	0	0	1.5
	89.01 ¹	511.4	0	5.8	787.6
	91.17 ¹	33.5	0	0	114.9
	93 ¹	0	0	0	0
	95 ¹	0	0	0	0
	97.08	88.4	0	16.4	113.3
	97.16 ¹	0.1	0	0	0.7
	99.05 ^{1,2}	0	0	0	0.3
WEMO TOTAL		5508.4	79.6	111.6	7795.3

*Tracts transect the planning area boundary.

1 - Tract contains low-income environmental justice population.

2 - Tract contains minority environmental justice population.

Table 4.5-5. Alternative 5 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Inyo	8*	526.8	35.0	5.0	352.5
Kern	52.01*	102.8	5.5	9.3	293.7
	52.03* ¹	237.8	0	20.4	626.0
	53 ¹	0	0	0	0
	54.02	0	0	0	1.1
	55.01	428.4	48.7	1.1	711.0
	55.06	3.4	0	0	26.1
	55.08 ¹	3.0	0	0	20.7
	57	1.1	0	0	0.2
	58.02 ¹	0.3	0	0	1.0
60.04*	58.7	0	20.5	151.3	

Table 4.5-5. Alternative 5 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
	60.07*	59.3	0	6.7	150.3
Los Angeles	9001.02 ¹	11.9	0	0	29.1
	9002.01	0.3	0	0	1.0
	9012.09*	0.5	0	0	0
	9012.10	0	0	0	0
	9012.13	0	0	0	0.8
	9100.01 ²	0	0	0	0
	9100.02	0.6	0	0	0.9
	9101.01 ^{1,2}	0.1	0	0	0
	9102.06	0	0	0	1.2
	9102.09	0	0	0	0.3
	9108.04*	0.2	0	0	4.2
	9108.05*	0	0	0	0.4
	9108.12	0.4	0	0	0.2
	9110.01	0.5	0	0	7.8
9800.03	0	0	0	0.1	
Riverside	469*	48.4	0	0	34.0
San Bernardino	100.17	3.4	0	0	8.2
	100.24 ¹	2.3	0	0.7	10.7
	103* ¹	988.1	0.5	6.5	571.0
	104.02	0.1	0	0	0.3
	104.09*	281.0	0	2.3	140.3
	104.10	2.8	0	0	10.8
	104.11	0.4	0	0	1.5
	104.13 ¹	9.6	0	2.1	6.5
	104.15	0.1	0	0	0.1
	104.16 ¹	91.8	0	0	103.4
	104.17 ¹	1.8	0	12.3	10.4
	104.19 ¹	1.2	1.7	0	2.4
	104.20	5.7	0	0	6.2
San Bernardino (continued)	104.22	0.1	0	0	0.5
	104.23 ¹	146.1	0	3.7	198.1
	104.24 ¹	232.4	0	7.2	377.0
	116	1260.6	6.7	1.0	1503.8
	117 ¹	58.7	0	0	142.5
	118	2.1	0	0	12.4
	119 ¹	140.4	0	1.6	163.4
	120.01	2.9	0	0	0.7
	120.02	0.7	0	0	1.2
	121.01	7.1	0	0.8	27.3
121.03	36.7	0	1.7	17.6	

Table 4.5-5. Alternative 5 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
	121.04 ¹	367.8	0	0	759.0
	250	3.3	0	0	1.7
	89.01 ¹	520.4	22.0	0.6	761.6
	91.17 ¹	42.6	0	0	105.4
	93 ¹	0	0	0	0
	95 ¹	0	0	0	0
	97.08	86.7	0.5	19.5	111.4
	97.16 ¹	0.1	0	0	0.7
	99.05 ^{1,2}	0	0	0	0.3
WEMO TOTAL		5781.5	120.6	123	7470.3

*Tracts transect the planning area boundary.

1 - Tract contains low-income environmental justice population.

2 - Tract contains minority environmental justice population.

Many tracts containing environmental justice populations are not transected by the BLM route network. Of the 55 census tracts within the WEMO Planning Area that are transected by the route network under the No Action Alternative and Alternatives 4 and 5, 20 census tracts contain environmental justice populations. Under Alternatives 2 and 3, there are 58 census tracts that are transected by the Alternative 2 route network, and 22 of these census tracts, or 38 percent of the census tracts that are transected by the route network, contain environmental justice populations.

Alternative 2 contains the least mileage of OHV Open and OHV Limited routes with 692.6 miles less and 652 miles more transportation linear disturbances than the No Action Alternative. Alternative 3 contains the most mileage of OHV Open and OHV Limited routes with 3,983.4 miles more and 4,134.4 miles more of transportation linear disturbances than the No Action Alternative. Alternative 5 has an intermediate potential for impacts with 518.5 miles more OHV Open and OHV Limited routes and 735.4 fewer miles of transportation linear disturbances as compared to the No Action Alternative.

Increased mileage of open routes would potentially benefit environmental justice populations with increased job opportunities and access to low-cost recreation, but would also expose environmental justice populations to elevated levels of noise and pollution. A decrease in mileage of open routes would potentially adversely impact environmental justice populations with fewer job opportunities and access to low-cost recreation, but would expose environmental justice populations to decreased levels of noise and pollution. The limited number of census tracts that contain environmental justice populations and are transected by the route network relative to the total number of census tracts that are transected by the route network under all alternatives indicate that environmental justice populations would not bear a disproportionately high level of adverse impacts.

4.5.5 Resource-Specific Minimization and Mitigation Measures

Because no adverse impacts to socioeconomics were identified, no resource-specific minimization and mitigation measures were developed for socioeconomic effects, including impacts associated with livestock grazing.

4.5.6 Residual Impacts After Implementation of Mitigation Measures

Because no adverse impacts to socioeconomics were identified, there would be no residual impacts after mitigation measures were implemented.

4.6 Recreation

4.6.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the proposed action, including the route network and OHV use, on recreation. The Court's Summary Judgment and Remedy orders did not specifically reach conclusions, or provide direction, regarding the sufficiency of the recreation analysis.

4.6.2 Impacts Common to All Alternatives

The WMRNP includes decisions that could affect both the availability and quality of recreation opportunities within the planning area. In general, WMRNP decisions that increase the size of the transportation network available to recreation users are beneficial for those users, and provide access to a greater variety of destinations. In contrast, decisions that decrease the size of the network generally limit recreational experiences and access to destinations, and may be an adverse impact.

In addition to affecting the availability of recreation opportunities, the size of the transportation network also affects the quality of the recreation experience. A large reduction of the size of the available network would generally cause an increase in the number of recreation users in the areas that remain available. Because solitude in the planning area is a major attraction for many recreationists, increases in the density of users in any given area is generally considered an adverse impact to the recreation experience. In contrast, increases in the size of the network would be considered beneficial, as recreation users would be more widely dispersed.

In addition to the size and configuration of the transportation network, the WMRNP includes establishment of objectives and implementation strategies that can affect the quality of recreation experiences. The selected objectives would be used as the framework for determining the size and configuration of the network, and would thus have an indirect impact on recreation users, as described in the above paragraphs.

The limitations on access route uses and types can also result in adverse or beneficial impacts to recreation users. In the WMRNP, these limitations include specifications for competitive use routes, motorcycles, ATVs, and jeeps/trucks. They may also specify non-motorized uses (e.g. bicycling) and/or non-mechanized uses (hiking and equestrian) only. Limits may also provide for seasonal or authorized use only. These limitations for each alternative were made based on the size of the route, the known users, and to minimize potential resource conflicts and conflicts between users. Similar to the overall size of the network, the limitations on use and type can

adversely affect users of one mode of transportation if the number of routes available to them is limited, and can have a beneficial impact on another class of users if the number of routes available to them is increased and routes are interconnected to provide a variety of experiences for specific user groups. In addition, providing routes for specific OHV uses can alleviate use conflicts on routes where multiple modes of travel are an issue and reducing the quality of recreation experiences. Also, designating routes to create a transportation network that provides a variety of recreation opportunities and experiences (out and back, round trip, hillclimb, touring, etc.) is beneficial to recreation users.

The implementation strategies considered as part of the WMRNP include measures that would place restrictions on the adopted network that pertain to the allowed mode of transport, types of vehicles, time or season of use, speed, and other parameters associated with use of the network. These restrictions are intended to protect other resources. In general, many recreation users may consider these restrictions as a direct, adverse impact on their experience. However, these restrictions can also be considered beneficial for other users. For instance, speed and noise restrictions may be beneficial for users who prefer to enjoy their experience in quieter, safer environment, as the restrictions would limit the activities of the other users of the same area. These restrictions also have an indirect beneficial effect on the recreation experience by protecting biological, cultural, and scenic resources that attract users to the area in the first place. Although certain users may consider the restrictions to be an adverse impact to their individual experience, the cumulative effect of allowing all users to operate without restrictions could damage resources, resulting in a longer-term impact on the experience for all users.

Another consideration in the designation of routes in the planning area is safety. Encounters with safety hazards associated with abandoned mining features are a well-known risk in the West Mojave. Therefore, designation of a transportation network, and implementation of use restrictions, in consideration of the known locations of these hazards is beneficial for users of these areas.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. Recreation impacts were considered in the development of alternative goals and objectives, in designation of individual routes, and in defining specific implementation parameters. The goals and objectives for Alternative 2 focus on enhancing sensitive resource values and areas while managing access to de-emphasize casual multiple-use OHV and mechanized touring. In contrast, the goals and objectives for Alternative 3 focus on managing access to emphasize casual multiple-use OHV and mechanized touring.

Recreation impacts were also considered in the designation of individual routes. The effect of the designation of a route on recreation uses in the area was considered on a case-by-case basis by BLM recreation specialists reviewing connections to other routes, vehicle types that use a route, intersections with designated trails, specific recreational destinations that the route provides access to, or association of a route with special recreation permits.

4.6.3 Differences in Impacts Among Plan Amendment Alternatives

There are no impacts to recreation from the grazing alternative in PA VII; therefore, there is no further discussion of PA VII in this section. Specific impacts to recreation from PA III through PA VI are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Because these activities do not affect recreation, the No Action Alternative would have no direct or indirect impact on recreation.

Under Alternative 2, the seasonal limitations on “C” routes may reduce their use for OHV events, and thus have localized adverse impacts on recreation. These routes would continue to be open for casual use touring in the area throughout the year, which would be beneficial for recreation in the area. Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the restriction in use of the existing “C” routes, would be a direct, adverse impact to recreation for participants in those events.

Under Alternative 3, the Summit Range and the area east of Highway 395 along with the area to the northeast of the Spangler Hills Open Area have approximately 20 to 30 miles of routes in each area. These designated “C” routes were originally identified and approved for use in the Spangler Hills OHV Area Management Plan (1992). The terrain in these areas ranges from rolling hills to steep hills and sandy drainages. This topographic diversity and open space is extremely desirable to OHV enthusiasts providing technically challenging opportunities no matter what ones skill level maybe. Additionally, these additional miles of trails enhance the ability to lay out long distance OHV competitive events.

The designation of “C” routes within the urban interface area between the community of Ridgecrest and the Spangler Hills Open Area under Alternative 3 would provide for connectivity from the community to the Open area. There are two proposed areas that these “C” routes would connect within the community and those are around the Cerro Coso Community College and the Desert Empire Fairgrounds. Connecting these trails to these two locations would provide the ability for an event to start and/or end within the community. Plus these routes would provide a potential for economic diversity to the local community and local residents to come out and be spectators for events starting from the community. About 10 to 20 miles of routes would be designated as being available for competitive use. The terrain in this urban interface area includes the rising desert floor to sandy hills with sandy drainages.

In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available under Alternative 3. Pit areas would be limited to those areas previously dedicated as Pit areas along the route. The designation of the Johnson Valley North unit-to-Johnson Valley South unit and the Stoddard Valley-to-Johnson Valley competitive events connectors would result in beneficial impacts to recreational use and partially offset the loss of 98,000 acres that are no longer available for competitive events under SRP as a result of the MCAGACC expansion.

Under Alternatives 4 and 5, the “C” routes that are to the northeast of the Spangler Hills Open Area above the Randsburg Wash Road and those found within the Summit Range and east of Highway 395 would be available for competitive OHV events managed under a SRP. There are

approximately 20 to 30 miles of designated “C” routes in each of these areas. These designated “C” routes were originally identified and approved for use in the Spangler Hills OHV Area Management Plan (1992). The terrain in these areas ranges from rolling hills to steep hills and sandy drainages. This topographic diversity and open space is extremely desirable to OHV enthusiasts providing technically challenging opportunities no matter what ones skill level maybe. Additionally, these additional miles of trails enhance the ability to lay out long distance OHV competitive events. This alternative would provide a corridor that enhances organized vehicle riding opportunities within the Open Area.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, OHV use of vehicles on the lakebeds is beneficial to recreational opportunities. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could affect the availability of recreation.

Under the No Action Alternative, no change would be made to the list of dry lakes for which designations are made, or to any of the current designations. Therefore, there would be no change in current recreational opportunities.

Under Alternative 2, the closure of Koehn lakebed would result in a direct, adverse impact to recreational uses of that lakebed. Because Koehn lakebed is currently receiving relatively light use, this impact is expected to be small. Under Alternative 2, Coyote dry lake and Cuddeback dry lake would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and there would be no change in current recreational opportunities.

Under Alternatives 3, 4, and 5, Koehn lakebed would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, which would result in a direct, adverse impact to recreational uses of that lakebed. Because Koehn lakebed is currently receiving relatively light use, this impact is expected to be small. Alternatives 3, 4, and 5 would also designate Cuddeback and Coyote lakebeds as OHV Open use. This would result in an overall beneficial impact by opening these lakebeds to recreational uses.

Under all alternatives, Chisholm Trail dry lake would remain closed to all types of use, so there would be no change in recreational opportunities.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. The Rand Mountains-Fremont Valley Management Area would continue to be managed consistent with parameters outlined in 2.2.1.2.4 of the WEMO FEIS, including the use of a permit system for those visitors desiring to use vehicles within the Rand Mountains. Before one can travel into the management area, one must complete a test and then purchase a permit to use the public lands within the area. This system has a negative effect on recreation within the Rand Mountains-Fremont Valley Management Area by impeding recreational access onto the public lands within the area. Additionally, those public land visitors that desire to use vehicles on the public lands may view

this as a discriminatory action against their particular form of recreational use. They may also feel that this is an unjust fee placed upon them for use of generally undeveloped public lands.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. The requirement for visitors to obtain a use permit before using an OHV inside the Rand Mountains would be replaced with an intensively managed designated route network. The remaining general management frame work for the Rand Mountain – Fremont Valley Management Area would stay intact as outlined in 2.2.1.2.4 of the WEMO FEIS and the No Action Alternative. Removing the requirement for visitors to obtain a SRP use permit before using an OHV inside the Rand Mountains would have an overall positive effect on recreational access to the area. This action would remove the impediment to the availability of the public lands for recreational access and use based purely on their choice of mode of travel. This would have an overall positive effect on recreational access to the area by expanding the availability of recreational opportunities within the WEMO Planning Area.

PA VI: Modify Stopping and Parking Limitations

Alternative 2 would limit stopping and parking to previously disturbed areas within 50 feet of the route centerline, both inside and outside of DT ACECs. This would be a reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet. Camping would be allowed adjacent to designated routes in previously disturbed areas, not to exceed 50 feet from the centerline, throughout the WEMO Planning Area. This reduction from the limits in the No Action Alternative would have a significant effect on recreational use. Based on the assumption that routes are 12 feet wide (Table 4.1-1) the usable space for parking and camping is reduced down to 44 feet from the edge of the road once the 6 feet from center line is subtracted from the allowed 50 feet. The impact would predominately affect those recreational users that camp or use vehicles and trailers to transport their equipment to a remote starting point to continue their recreational activities. These recreational users are frequently driving full size pickups, SUVs, or motorhomes and pulling larger trailers. The average size for a full size pickup is about 20 feet in length, motorhomes and travel trailers range in size from 20 to 40 feet in length, and utility trailers average between 10 to 20 feet in length. Because of the overall sizes of their vehicles when put together it is very difficult for these recreational users to pull off the road and get turned around within the allowed 44 feet. Additionally, recreationists frequently visit in larger groups, and this limitation would not allow for them to assemble as a group safely to the side of a route. Therefore, limiting the stopping and parking distance would have a significant effect on those recreationalist who travel in larger vehicles and/or desire to be in larger groups.

Alternatives 3, 4, and 5 would have a similar adverse effect on recreation, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2). Based on the assumption that routes are 12 feet wide (Table 4.1-1) the usable space for parking and camping is reduced down to 94 feet from the edge of the road once the 6 feet from center line is subtracted from the allowed 100 feet.

4.6.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that the size and configuration of the available transportation network, and the management strategies for that network, can have both adverse and beneficial effects on recreation users. The mileage of routes available to

the various different types of recreation users in the area under the No Action Alternative and Alternatives 2, 3, 4, and 5 are presented in Tables 4.6-1, 4.6-2, 4.6-3, 4.6-4, and 4.6-5, respectively. In addition, the analysis also concluded that safety hazards, including those associated with abandoned mining features, present an adverse impact to recreation. The mileage of routes located in close proximity to identified abandoned mine land (AML) hazards associated with each alternative is presented in Table 4.6-6.

Table 4.6-1. No Action Alternative - Miles of Routes which Support Recreation

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Miles of Routes Designated for Activity				
ATV/UTV	0	0	0	0
Biking	0	0.6	0	0
Hiking	0	0	26.5	0
Motorcycling	0	0	6.4	0
Competitive "C" Routes	37.7	0	0	0
Miles of Routes for Access to Activity¹				
Cabin Site	28.3	0	0	26.1
Camping	540.5	0	0	241.9
Caving	37.1	0	0	6.5
Guzzler	37.1	0	0	6.5
Horseback Riding	0.1	0	0	0
Motorized Staging Area	103.3	0	0	30.6
OHV	146.7	0	0	99.9
Overlook	259.6	0	0.8	96.5
Rockhounding	556.0	0	0	686.5
Target Shooting	139.4	0	0	55.6
Trailhead	23.7	0	0	12.7

¹ Includes the mileage running up to the activity

Table 4.6-2. Alternative 2 - Miles of Routes which Support Recreation

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Miles of Routes Designated for Activity				
ATV/UTV	6.6	0	0	0
Biking	0	31.7	0	0
Hiking	0	0	36.3	0
Motorcycling	0	0	12.1	0
Competitive "C" Routes	21.3	0	0	0
Miles of Routes for Access to Activity¹				
Cabin Site	25.9	0	0	28.5
Camping	408.0	3.0	1.2	369.3
Caving	31.3	0	0	12.3
Guzzler	31.3	0	0	12.3

Table 4.6-2. Alternative 2 - Miles of Routes which Support Recreation

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Horseback Riding	0.1	0	0	0
Motorized Staging Area	88.2	0	0	44.9
OHV	108.5	0.5	0	140.2
Overlook	200.3	0	0.9	155.7
Rockhounding	470.6	10.9	1.4	758.8
Target Shooting	115.0	0	0	79.3
Trailhead	17.9	0	0	18.5

¹ Includes the mileage running up to the activity

Table 4.6-3. Alternative 3 - Miles of Routes which Support Recreation

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Miles of Routes Designated for Activity				
ATV/UTV	0.5	0	0	0
Biking	0	88.9	0	0
Hiking	0	0	82.1	0
Motorcycling	0	0	65.4	0
Competitive "C" Routes	37.5	0	0	0
Miles of Routes for Access to Activity¹				
Cabin Site	37.8	0	0	16.6
Camping	594.0	6.5	0	181.9
Caving	40.0	0	0	3.6
Guzzler	40.0	0	0	3.6
Horseback Riding	0.1	0	0	0
Motorized Staging Area	114.1	0	0	19.9
OHV	192.5	1.4	0	56.0
Overlook	302.5	0	0.9	53.5
Rockhounding	987.6	11.0	0	243.8
Target Shooting	159.7	2.2	0	33.2
Trailhead	29.4	0	0	7.0

¹ Includes the mileage running up to the activity

Table 4.6-4. Alternative 4 - Miles of Routes which Support Recreation

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Miles of Routes Designated for Activity				
ATV/UTV	128.5	0	0	0
Biking	0	84.5	0	0
Hiking	0	0	113.2	0
Motorcycling	0	0	61.5	0

Table 4.6-3. Alternative 3 - Miles of Routes which Support Recreation

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Competitive “C” Routes	124.9	0	0	0
Miles of Routes for Access to Activity¹				
Cabin Site	26.9	0	0	27.5
Camping	521.6	15.3	2.3	241.1
Caving	37.3	0	0	6.2
Guzzler	37.3	0	0	6.3
Horseback Riding	0.1	0	0	0
Motorized Staging Area	100.5	0	0	33.5
OHV	154.7	1.7	0	90.9
Overlook	254.3	4.4	0.9	96.1
Rockhounding	604.0	29.7	0	608.8
Target Shooting	140.8	0	0.3	54.0
Trailhead	23.1	0	0	13.2

¹ Includes the mileage running up to the activity

Table 4.6-5. Alternative 5 - Miles of Routes which Support Recreation

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
Miles of Routes Designated for Activity				
ATV/UTV	100.9	0	0	0
Biking	0	123.5	0	0
Hiking	0	0	125.5	0
Motorcycling	0	0	74.2	0
Competitive “C” Routes	120.5	0	0	0
Miles of Routes for Access to Activity¹				
Cabin Site	27.2	0	0	27.2
Camping	522.6	8.3	0.6	248.6
Caving	36.4	0	0	7.2
Guzzler	36.4	0	0	7.2
Horseback Riding	0.1	0	0	0
Motorized Staging Area	103.1	0	0	30.7
OHV	155.3	0.6	0	89.6
Overlook	248.3	1.2	0.9	105.3
Rockhounding	623.8	19.5	0	599.4
Target Shooting	134.9	0.3	0	59.9
Trailhead	22.8	0	0	13.6

¹ Includes the mileage running up to the activity

Table 4.6-6. Miles of Routes in Proximity to Safety Hazards – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
No Action Alternative				
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	22.1	0	0.2	49.1
Alternative 2				
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	16.6	0.4	0.1	54.2
Alternative 3				
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	47.1	0.7	0.5	23.1
Alternative 4				
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	21.9	0.3	0.4	48.7
Alternative 5				
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	22.0	0.8	0.3	48.2

Recreation Support

Under the No Action Alternative, few routes were subdesignated for most specific recreational activities except a small motorcycle network, and therefore there are relatively few impacts to any specific type of recreation user. Implementation strategies would remain the same as currently specified in the CDCA Plan. Those strategies include several restrictions on OHV use in order to achieve resource protection. Examples of restrictions include the limitation on stopping, parking and vehicle-based camping in DT ACECs to 50 feet of centerline of routes and the requirement under this alternative for visitors to the Rand Mountains to complete an educational program and purchase a permit before they are allowed to use an OHV on the designated route network within the Rand Mountains. Therefore, adverse impacts from these restrictions would continue for users that consider the current restrictions as adverse to their experience.

Alternative 2 decreases the overall miles of OHV Limited routes with subdesignations of ATV/UTV, motorcycle and “C” routes with 5.1 fewer miles than the No Action Alternative. Alternative 2 subdesignates a 31.7 mile network of bicycle routes while the No Action Alternative has 0.6 miles of routes specified for this type of use. Alternative 2 subdesignates a 6.6 mile network of ATV/UTV routes, while the No Action Alternative has 0 miles of routes specified for this type of use. Alternative 2 subdesignates a 21.3 mile network of motorcycle routes, while the No Action Alternative has 37.7 miles of designated motorcycle routes. Alternative 2 provides for 36.3 miles of non-mechanized routes for hiking, compared to 26.5 miles for the No Action Alternative.

Alternative 3 has the greatest amount of miles of OHV Limited routes with subdesignations of ATV/UTV, motorcycle and “C” routes by 56 miles more than the No Action Alternative. Alternative 3 subdesignates an 88.9 mile network of bicycle routes while the No Action Alternative subdesignates a 0.5 mile network of ATV/UTV routes and 37.5 mile network of motorcycle routes. Alternative 3 provides for 82.1 miles of non-mechanized routes for hiking compared to 2.1 miles for the No Action Alternative

Alternative 5 has the second greatest amount of OHV Limited routes with subdesignations of ATV/UTV, motorcycle and “C” routes with 244.7 miles more than the No Action Alternative. Alternative 5 subdesignates a 123.5 mile network of bicycle routes, a 100.9 mile network of ATV/UTV routes and 37.5 mile network of motorcycle routes. Alternative 5 provides for 125.5 miles of non-mechanized routes for hiking, compared to 26.5 miles for the No Action Alternative. Equestrian miles of route are the greatest under Alternative 5 with 74.2 miles.

The expansion of the route network is particularly large in the Jawbone Subregion. The change reflects the adoption of an enhanced trail system proposed through the area, and reflects the historic use of this area in conjunction with the adjacent OHV Open Area. The area is significantly impacted from the historic use, and the proposed network will be developed in conjunction with the continuation of an intensive mitigation strategy underway for the Jawbone area. Hiking subdesignations added to the Jawbone Subregion under the Proposed Action will help to minimize and avoid impacts to the Pacific Crest Trail. OHV route interference, with hiking, such as trailhead access and crossovers with the Pacific Crest Trail, has also been reduced.

Safety Hazards

Alternative 3 has the greatest potential for impacts from safety hazards with 47.1 miles of OHV Open and OHV Limited routes and 23.1 miles of transportation linear disturbances. Alternative 4 has the least potential for impacts from safety hazards with 16.6 miles of OHV Open and OHV Limited routes and 54.2 miles of transportation linear disturbances. Alternative 5 has nearly equivalent impacts as compared to the No Action Alternative with less than 1 percent difference for OHV Open and OHV Limited routes and transportation linear disturbances. Alternative 2 has least potential for impacts from safety hazards with 5.5 fewer miles of OHV Open and OHV Limited routes and 5.1 more miles of transportation linear disturbances as compared to the No Action Alternative. The majority of the miles amongst all alternatives are impacted by AMLs, which are actively undergoing inventory and eventual remediation as funding allows.

4.6.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for impacts to recreation include but are not limited to:

- Remediate AML features and other safety hazards;
- Install fencing;
- Install signs;
- Temporarily limit use of routes while safety issues are addressed;

- Install barriers and maintain or upgrade existing barriers;
- Limit Special Recreation Permitted Use;
- Remove attractants;
- Monitor the route for signs of increasing impacts to a sensitive area; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.
- Existing kiosks placed at access points to WEMO Subregions will provide notification to the public that historic mining may have occurred and “Stay Out, Stay Alive” messaging will be utilized
- Remediation at key sites is guided by focused inventory assets starting with site clusters in closest proximity to high use sites

Table 2.2-1 describes the network-wide minimization and mitigation measures that are currently specified in the CDCA Plan, WEMO Plan, and/or the Court’s Remedy order, and which are therefore applicable under the No Action Alternative. In general, these measures focus on resource protection, and therefore place restrictions on the development of new routes to support recreation and safety. These include the limits on allowable new ground disturbance in ACECs and CDNCLs, distance limitations on stopping and parking, and efforts to disguise and rehabilitate routes designated as transportation linear disturbances. Under Alternative 2, these measures place additional restrictions on the development of new routes to support recreation. Under Alternatives 3, 4, and 5, intensively used and sensitive areas would be mitigated by site-specific measures developed with current and future local non-profits and other partners to further travel management and ACEC resource protection implementation strategies. These may include inventory and remediation of hazardous focus areas known to have high public exposure; i.e. OHV Open use areas and routes, urban interface and areas known to be frequently visited by the public. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific impacts to recreation are considered before authorizing new OHV Open and OHV Limited routes.

4.6.6 Residual Impacts After Implementation of Mitigation Measures

Residual effects to recreation would continue after application of mitigation measures. Although the mitigation measures would reduce the potential for recreational users to encounter safety hazards, unidentified hazards are likely to continue to exist. Also, mitigation measures implemented to address biological, cultural, and other resource impacts, including designation of routes as transportation linear disturbances and other route limitations, would restrict the range of routes available for recreational use. Although the total miles traveled for recreational use in the planning area would remain the same, this use would occur within a more limited area, potentially affecting the recreational experience for users who seek recreation in more remote, unpopulated areas. OHV Open and OHV Limited routes will continue to be affected by safety hazards, such as AMLs throughout the network. However, over time the residual effects could potentially be reduced as the AML inventory is actively updated and sites remediated as funding allows.

4.7 Livestock Grazing

4.7.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the proposed action on grazing in the planning area. The document also evaluated changes in grazing to accomplish the purpose and need of the 2006 WEMO Plan Amendment, including the impact of grazing on biological resources. The Court's Summary Judgment order did not address the impact of the route network or OHV use on grazing allotments. However, it did conclude that the EIS did not adequately evaluate the impact of grazing on soil resources, riparian areas, and UPAs. The Remedy order indicated that, "On remand, the BLM will consider a host of factors, including grazing issues, in its alternatives analysis." The Remedy order required that the WEMO Plan provisions for relinquishing grazing allotments remain in effect during remand. In addition, BLM's decisions on grazing allotments that were made subsequent to the WEMO Plan, and that were based on separate Environmental Assessments, remain in effect through the EIS revisions. These decisions are to be reconsidered within six months following the Record of Decision for this SEIS.

4.7.2 Impacts Common to All Alternatives

This analysis addresses the impacts to livestock grazing activities from grazing alternatives and OHV management and use under the Travel Management Alternatives. A further discussion of impacts to grazing activities from other actions can be found in Section 4.15 Cumulative Impacts Analysis.

As a result of the adoption and implementation of the 2006 WEMO Plan, grazing is discontinued on three ephemeral sheep allotments, one ephemeral cattle operation, and the boundaries have been modified on four additional ephemeral sheep allotments. One cattle allotment has been voluntarily relinquished and its forage reallocated under the 2006 WEMO Plan. Utilization thresholds have also been reduced from 40% to as low as 25% on select key species allotment wide. There are two other grazing operational prescriptions contained in the 2006 WEMO Plan that are now in effect. These prescriptions eliminate authorization of the ephemeral portion of the perennial/ephemeral authorizations, and no longer provide for temporary non-renewable (TNR) use authorizations, regardless of production. The 2006 WEMO grazing prescriptions also require exclusion from portions of select allotments when ephemeral production is less than 230 lbs/acre (non-DT ACEC) and 350 lbs/acre (DT ACEC) during those seasons. Finally, since the WEMO Plan, two other allotments are no longer available for grazing as a result of legislation. The direct impacts of these losses are the lost grazing opportunities for the individual grazers and reduction in available forage for livestock grazing.

The 2016 DRECP LUPA analyzed and made changes to the Livestock Grazing Element objectives that affect allotments within the WEMO Planning Area, as outlined on page II.3-200 of the 2015 DRECP FEIS. These specific changes include:

1. Make Pilot Knob, Valley View, Cady Mountain, Cronese Lake, and Harper Lake allotments, allocations unavailable for livestock grazing and change to management for wildlife conservation and ecosystem function. Reallocate the forage previously allocated to grazing use in these allotments to wildlife use and ecosystem functions.
2. The following vacant grazing allotments within the CDCA will have all vegetation previously allocated to grazing use reallocated to wildlife use and ecosystem functions

and will be closed and unavailable to future livestock grazing: Buckhorn Canyon, Crescent Peak, Double Mountain, Jean Lake, Johnson Valley, Kessler Springs, Oak Creek, Chemehuevi Valley, and Piute Valley.

3. Allocate the forage that was allocated to livestock use in the Lava Mountain and Walker Pass Desert allotments (which have already been relinquished under the 2012 Appropriations Act) to wildlife use and ecosystem function and eliminate livestock grazing on the allotments.

The designated transportation network supports livestock grazing by providing access to and use of allotments, access to range improvements and developed springs, and means for transport of livestock into, out of, and between allotments. In general, a more extensive route network within an allotment would be considered to be beneficial to grazing, as it would give the lessee or permittee the largest range of options for accessing the allotment and transporting livestock and materials. A more restricted network within an allotment could be considered to be adverse, since it could potentially require a lessee to travel greater distances to conduct operations.

All routes that passed within 30 feet of a range improvement were determined to be necessary to support the operations of the grazing lessee, and were designated as OHV Open or OHV Limited routes. Allowable uses and other limitations on these routes were determined on a case-by-case basis, depending on the presence of other resources in the area. While the specified limitations may occasionally limit the rancher's access to any given range improvement, these limitations are not expected to disrupt their operations, and so are not considered to be an adverse impact.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Pen, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. In that analysis, livestock grazing impacts were considered as a criterion in determining which routes would remain open and which would be designated as transportation linear disturbances under the various alternatives. All routes that passed within 30 feet of a range improvement were determined to be necessary to support the operations of the grazing lessee, and were designated as OHV Open or OHV Limited routes under all alternatives.

Details on the livestock grazing program summary (by alternative) are presented in Table 4.7-1.

Table 4.7-1. Livestock Grazing Program Summary by Alternative

Alternative	Grazing Acreage Re-Allocated	Grazing Acreage Remaining
1: No Action	0	1,261,526
2	115,106	1,146,420
3	0	1,261,526
4: Draft Proposed Action	0	1,261,526
5: Final Proposed Action	0	1,261,526

4.7.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to livestock grazing from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

The proposed “C” Routes are within the currently permitted Cantil Common and Spangler Hills ephemeral sheep grazing allotments. Sheep grazing is authorized in the spring months when sufficient annual forage is present due to winter rains. Competitive events may authorize large numbers of vehicles traveling at a high rate of speed, which has the potential to increase OHV impacts to grazing within the allotments.

Under Alternative 2, designating “C” routes would not impact any grazing allotments, as the seasonal restriction would limit competitive use to months outside of the potential season of use for ephemeral sheep grazing. The seasonal limitations on “C” routes may reduce their use for OHV events during grazing season, and thus have localized beneficial impacts on grazing in those areas.

Under Alternatives 3, 4, and 5, the designation of “C” routes under Alternative 3 would impact both the Cantil Common and Spangler Hills Allotment. There is no seasonal restriction, and therefore collisions might occur.

Under Alternatives 4 and 5, the decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area would be made with appropriate mitigation measures to protect grazing.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds are not associated with grazing allotments or access to range improvements. As a result, OHV use of vehicles on the lakebeds is not expected to impact grazing under any alternative, and this decision would not have any effect on grazing. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes due to its closure under Alternative 2, and to its designation as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit” under Alternatives 3, 4, and 5, would be low. As a result, Alternatives 2, 3, 4, and 5 are not expected to have an indirect, adverse impact on grazing by increasing the recreational use of routes in other areas.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. Because access in this area does not currently impact livestock grazing, these alternatives would have no direct or indirect impact on livestock grazing. Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. There are no grazing allotments present in this area. Therefore, eliminating the permit requirement would not have any impact on grazing.

PA VI: Modify Stopping and Parking Limitations

Under all alternatives, the allowable stopping, parking, and camping distances are not expected to have any effect on OHV use of routes to support grazing operations, and would therefore not have any impact on grazing.

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, the livestock grazing program in the WEMO Planning Area would include 19 active and inactive allotments within the WEMO Planning Area. The grazing program and practices would be as described in the 2006 WEMO Plan, as amended by the 2016 DRECP LUPA. Grazing would continue on Ord Mountain, Cantil Common and Shadow Mountain active allotments without further changes.

Alternative 2 would discontinue livestock grazing in 115,106 acres, consistent with 43 CFR 4130.2(a), in portions of the Ord Mountain, Cantil Common and Shadow Mountain Allotments.

Grazing would be discontinued on 107,779 acres of the Ord Mountain Allotment that are within the Ord-Rodman DT ACEC and CHU. The approximately 3,051 Animal Unit Months (AUM, an expression of livestock stocking commitment based on forage) within the Ord-Rodman DT ACEC would be reallocated from livestock forage to wildlife use and ecosystem functions. The cattle grazing operation on the Ord Mountain Allotment would be negatively impacted such that this grazing operation would no longer be considered economically viable. In addition to the loss of 86% of public land acres under this alternative, an additional 10,880 acres have been lost to the expansion of the Marine Corps Air Ground Combat Center (MCAGCC) at 29 Palms.

Ephemeral sheep grazing would be discontinued on 6,726 acres of the Cantil Common Allotment and 3,323 acres of the Shadow Mountain Allotment within the Fremont-Kramer DT ACEC. This represents 3.4 percent of the 196,171 acres of the Cantil Common Allotment, and 20.3 percent of the 16,364 acres of the Shadow Mountain Allotment.

4.7.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that the size of the available transportation network within an allotment can have beneficial or adverse impacts to the grazing operations of a lessee. Similarly, designation of OHV Open and OHV Limited routes that provide access to range improvements as transportation linear disturbances would present an adverse impact, if it occurred. The mileage of routes within active grazing allotments and the number of routes providing access to range improvements under each alternative are presented in Table 4.7-2.

Table 4.7-2. Acreage and Mileage of Routes in Proximity to Range Improvements – All Alternatives

Resource Description	OHV Open and OHV Limited	Transportation Linear Disturbance	Stopping/Parking/Camping (Acreage)
No Action Alternative			
Acreage and Mileage Within Active Grazing Allotments	1790.4	4049.9	77459.3

Table 4.7-2. Acreage and Mileage of Routes in Proximity to Range Improvements – All Alternatives

Resource Description	OHV Open and OHV Limited	Transportation Linear Disturbance	Stopping/Parking/Camping (Acreage)
Mileage of Routes Passing Within 30 Feet of Range Improvement	4.9	6.2	70.0
Alternative 2			
Acreage and Mileage Within Active Grazing Allotments	1505.6	4334.7	17829.1
Mileage of Routes Passing Within 30 Feet of Range Improvement	6.8	4.2	57.4
Alternative 3			
Acreage and Mileage Within Active Grazing Allotments	3925.1	1915.1	70410.59
Mileage of Routes Passing Within 30 Feet of Range Improvement	10.3	0.8	98.6
Alternative 4			
Acreage and Mileage Within Active Grazing Allotments	2077.2	3763.0	38249.7
Mileage of Routes Passing Within 30 Feet of Range Improvement	4.2	6.9	45.6
Alternative 5			
Acreage and Mileage Within Active Grazing Allotments	2193.7	3646.2	40526.4
Mileage of Routes Passing Within 30 Feet of Range Improvement	7.0	4.1	66.7

Alternative 3 has greatest potential for impacts to range improvements within active grazing allotments with 2,134.7 more miles of OHV Open and OHV Limited routes, and 5.4 more miles of OHV Open and OHV Limited routes within 30 feet of a range improvement than the No Action Alternative. Alternative 2 has the least potential for impacts to range improvements within active grazing allotments with 284.8 fewer miles of OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 4 has the least potential for impacts to range improvements within 30 feet of range improvement with 0.7 fewer miles of OHV Open and OHV Limited routes as compared to the No Action Alternative. Alternative 5 has an intermediate impact to range improvements within active grazing allotments with 403.3 miles more of OHV Open and OHV Limited routes, and 2.1 more miles of OHV Open and OHV Limited routes within 30 feet of a range improvement as compared to the No Action Alternative. The No Action Alternative has the greatest potential to impact range improvements with 77,459.3 acres of stopping/parking/camping within active grazing allotments.

4.7.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for impacts to livestock grazing that were considered, and that may be implemented, include but are not limited to:

- Install gates;

- Install fencing;
- Install signs;
- Install barriers and maintain existing barriers;
- Construct or install educational information such as signs;
- Install tortoise friendly cattle guards;
- Maintain and enforce reduced utilization thresholds for livestock grazing based on the season of use and range conditions; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

4.7.6 Residual Impacts After Implementation of Mitigation Measures

Only minor residual effects to grazing would be expected after application of mitigation measures. OHV use of routes within grazing allotments, or near range improvements, is expected to have little or no impact on grazing operations. The route networks under each alternative were designed to ensure continued access to the allotments and range improvements by the operators, and the installation of gates, fencing, or signs is not expected to adversely impact their operations.

4.8 Energy Production, Utility Corridors, and Other Land Uses

4.8.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the proposed action, including the route network and OHV use, on access needs for other authorized land uses including mining, communications towers, transmission lines, and energy production. The Court's Summary Judgment and Remedy orders did not specifically reach conclusions, or provide direction, regarding the sufficiency of this analysis.

4.8.2 Impacts Common to All Alternatives

The designated transportation network supports commercial land uses by providing access to support construction, maintenance, and operations. All OHV routes that have authorized access for a specific user were determined to be necessary to the operations of that user. The NEPA analysis that is the basis for minimization and mitigation measures, and appropriate consultation requirements is determined upon receipt of commercial proposals. Commercial users are encouraged, and may be required, to utilize access routes that are already available for use by the public, when the commercial use would not conflict with public use. Commercial users are required to compensate for (offset) loss of listed species habitat and to minimize impacts to sensitive resource values during any route upgrade or construction, and during maintenance and use, even if the routes are already within the open route network.

Allowable uses, design requirements, and other parameters on commercial routes are determined on a case-by-case basis, depending on the minimum requirements of the commercial user, the presence, sensitivity, and potential direct and indirect effects to other resources in the area, and

the feasibility of avoidance strategies. The access route(s) and limitations that are specific to the operator, right-of-way holder, permittee or lessee are specified within the terms and conditions of the applicable plan of operations, grant, permit, or lease, if approved. Required design and minimization and mitigation measures are provided at the time of authorization. Generally paving or hardening of routes is not required as a term of authorization unless they receive very frequent use or are used by large, heavy trucks. Upon authorization, routes that are already open to the public remain designated OHV Open. Routes that are not available to the public become designated as OHV Limited.

Due to the location of the West Mojave as a major connector between Southern California and other parts of California and Nevada, major commercial routes that have been authorized since the early 1930s now provide some of the primary OHV routes in the desert for other users. Commercial engineering and construction expertise has resulted in relatively well-maintained routes across long distances in the West Mojave. Routes associated with commercial uses generally include a standard reclamation measure that would include the access route, upon cessation of commercial operations. The extent of route reclamation is determined upon completion of commercial activities.

The route designations as proposed in all of the alternatives would have no effect on land acquisitions and disposals, as these actions would continue as identified in approved land use plans. When land is acquired, existing routes that service authorized land users would be added to the route network, with appropriate review of measures to minimize impacts to sensitive resources. The need for modifications or new designated routes would also be evaluated at the time of acquisition.

The alternatives would not affect valid existing rights of approved land use authorizations granted by the U.S. Government to specific parties. Authorized use of public lands is through the issuance of plans of operation, right-of-way grants, leases and permits. The route designation process does not affect existing authorized users, as they already have the permitted right of access that is subject to certain conditions to minimize damage to resources. As stated previously, routes that have authorized access for a specific user and were determined to be necessary to the operations of that user, were designated as OHV Limited use. There are no anticipated impacts to existing authorized users of designated utility corridors.

Future authorized users would be directly affected, as their proposed use of public lands would be permitted through separate and independent analysis and decisions containing specific provisions for the protection of resources and minimization of impacts. These provisions generally provide for the use of the designated route system, where it is available, to minimize impact to BLM managed resource values. Future users may also be indirectly affected due to variable costs of doing business under the alternatives based on ease of access on an already designated route system. These costs are anticipated to be higher where there is not a designated route to a potential permit site, since construction of new routes result in greater impacts to one or more sensitive resources and therefore requires more design and/or mitigation to avoid or minimize impacts.

No substantial direct impacts to access minerals (locatable, leasable or salable mineral construction-materials) or mineral development would result from the alternatives. There is no significant difference between any of the alternatives regarding OHV access for mineral

exploration. For all alternatives, OHV access is available to at least the general area of existing mineral interest.

In areas with no designated routes, operators can obtain authorization for OHV access through exploration (the exception is special circumstances such as Wilderness). For example, access to mining claims and mineral deposits can be provided under an approved Plan of Operations or Notice (43 CFR 3809.11), or to deposits of construction materials such as sand and gravel under a Free Use Permit or Contract for the Sale of Mineral Materials (43 CFR 3602). For all types of mineral development as with other commercial uses, higher costs are anticipated where no designated route exists to a site as a result of higher potential impacts and minimization requirements.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. In that analysis, existing authorizations for access to authorized land uses was considered in determining which routes would remain open for other uses and which would be designated as transportation linear disturbances under the various alternatives. Routes that are currently used for authorized land uses would be designated as OHV Open or OHV Limited. OHV Limited use routes may include seasonal or other restrictions for the purposes of future authorizations and renewals, but these restrictions are generally already included in the current authorizations as part of their terms and conditions. Therefore, the impacts to commercial uses from the route designations are generally nominal.

Impacts from individual commercial uses vary widely. Impacts may be limited to minimal impacts to vegetation, or may result in substantial impacts to sensitive resources from major developments and associated access. Major authorizations often result, directly through the commercial uses, or indirectly through public use of the improved access, in substantial impacts to sensitive resources. The increased level of OHV access to the desert historically has been facilitated by railroads, energy development and transmission, and mining. This continues to be the case, on a more modest scale. The public use of authorized routes may, for example, substantially increase compaction of soils and increase potential for dust from higher-levels of OHV use and faster rates of speed. The impacts of individual commercial authorizations and associated routes are analyzed in the specific NEPA documents pertaining to each access route or authorization. The associated impacts from these commercial authorizations in general are analyzed in each of the affected resource sections in this document.

4.8.3 Differences in Impacts Among Plan Amendment Alternatives

There are no impacts to energy production, utility corridors, and/or other land uses from the grazing alternatives in PA VII; therefore, there is no further discussion of PA VII in this section. Specific impacts to other land uses from PA III through PA VI are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Because these activities do not affect other land uses, the No Action Alternative would have no direct or indirect impact on other land uses.

Under Alternative 2, the seasonal limitations on “C” routes would not result in any impacts to other authorized users.

Under Alternative 3, the use of routes for competitive events is not expected to impact other authorized land uses.

Under Alternatives 4 and 5, the “C” routes that are to the northeast of the Spangler Hills Open Area above the Randsburg Wash Road and those found within the Summit Range and east of Highway 395 would be available for competitive OHV events managed under a SRP. The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area under Alternatives 4 and 5 would be made with appropriate mitigation measures to avoid impacts to other authorized users. The use of these routes would not result in any impacts to other authorized users.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds are not associated with access to other authorized land uses. As a result, OHV use on the lakebeds is not expected to impact other land uses under any alternative, and this decision would not have any effect on other land uses. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes due to its closure under Alternative 2, and to its designation as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit” under Alternatives 3, 4, and 5, would be low. As a result, Alternatives 2, 3, 4, and 5 are not expected to have an indirect, adverse impact on land uses by increasing the recreational use of routes in other areas.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. Because access in this area does not currently impact other land uses, these alternatives would have no direct or indirect impact on other land uses.

Under Alternatives 3, 4, and 5, the elimination of the permit requirement for recreational users is not expected to result in a substantial increase in use of the area, and would therefore have no effect on authorized users of the area.

PA VI: Modify Stopping and Parking Limitations

Under all alternatives, the allowable stopping, parking, and camping distances are not expected to have any effect on OHV use of routes to support other authorized land uses, and would therefore not have any impact on land uses.

4.8.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that none of the alternatives would have an effect on existing authorized users because they already have a permitted right of access that would not be affected by the WMRNP. Therefore, the mileage of OHV routes available to the authorized users is the same under all alternatives.

Access for future applicants would be considered as part of the overall evaluation of their application. In these evaluations, BLM would develop access alternatives and consider all resource impacts as required by 43 CFR 8342.1. This process may result in authorization of an access route that is longer, or more costly to construct and maintain, than would be desired by the applicant, and may therefore be considered to be an adverse impact to the applicant. However, the locations and extent of these impacts is speculative, and cannot be quantified at this time.

4.8.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for potential conflicts resulting from multiple users include but are not limited to:

- Modify access to a less impacting designation;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Minimize overlapping uses by separating in time or space, or through a permitting mechanism;
- Add or identify alternative non-motorized or non-mechanized trail access;
- Construct or install educational information such as signs;
- Install step-over;
- Monitor the route for signs of increasing impacts to a sensitive resource; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

4.8.6 Residual Impacts After Implementation of Mitigation Measures

Only minor residual effects to other land uses would be expected after application of mitigation measures. OHV use of routes associated with other land uses is expected to have little or no impact on the authorized users of those routes. The route networks under each alternative were designed to ensure continued access to these areas by the authorized users, and the potential mitigation measures are not expected to adversely impact their operations.

4.9 Cultural Resources

4.9.1 Methodology

The 2005 WEMO EIS analyzed the cultural resource impacts associated with the route network evaluated in that EIS. The 2005 WEMO EIS discussed that the route network was compared to

known cultural sites and was adjusted to avoid them. The analysis concluded that designation of routes on or near cultural resources, and continued use of existing routes inside, near, or in the vicinity of cultural resources, could adversely impact those resources. The analysis went on to conclude that the effect of BLM routes of travel on cultural resources could not be fully determined, because information needed to assess the effect was incomplete.

For this SEIS for the WMRNP, BLM performed the following:

- BLM developed an initial agreement with the California State Historic Preservation Office (SHPO) to update its knowledge of the existing environment of the planning area. The agreement called for field visit and site monitoring by the archaeologists of major sites in each subregion of the West Mojave, including all sites listed on the NRHP. The BLM has now determined that a Programmatic Agreement (PA) pursuant to 36 CFR 800.14 is the appropriate mechanism to address NHPA Section 106. The PA under development in consultation with SHPO, ACHP, tribal and interested parties to address current limits in information, including the development of a predictive model, level of additional inventory, additional consultations, and other measures to identify areas of higher sensitivity that may be affected by the transportation network. The PA and supporting treatment plans will include specific mitigation measures to address adverse impacts to cultural resources. Under the PA, the BLM created an archaeological predictive model for the WEMO Planning Area. In accordance with the PA, BLM must conduct a Class III inventory of a 5 percent random sample of the WEMO Planning Area to test the validity of the model. BLM has completed Class III inventories of 1 percent of the WMRNP Area each year (5,000 acres minimum) since 2015, with the final 1 percent sample inventory scheduled for completion in 2019. The PA provides for additional inventory based on the archaeological sensitivity results from the predictive model. The PA also provides the BLM with management tools, through the Historic Properties Management Plan (HPMP), to manage cultural resources and consider effects to historic properties within the WEMO Planning Area. The surveys provide for the highest cultural sensitivity for route designation NEPA planning efforts.
- BLM conducted field monitoring of 617 eligible and listed cultural resources within the planning area.
- BLM engaged two cultural resource field teams to conduct inventory to provide data for the analysis and for the predictive model, at substantial BLM expense.

Travel Management Area (TMA) boundaries are used below to quantitatively analyze impacts to cultural resources. These boundaries do not necessarily reflect meaningful cultural, historical, or tribal boundaries. The TMA unit of analysis allows for future review of cultural resources where management actions are proposed. It further protects the sensitive location of known cultural resources, as the analysis of differences between subregions within each TMA provides too detailed a discussion of the resources present. Where appropriate, qualitative discussions of observed anomalies and differences between TMAs are noted, particularly where current management practices that have resulted in more identification efforts may be skewing the number of reported resources.

4.9.2 Impacts Common to All Alternatives

Impacts Common to All Alternatives - Route Designation

The route designation process has the potential to both impact and protect significant cultural resources, depending upon how cultural resources are considered in the criteria used to designate routes. A study of impacts to cultural resources in the California Desert, which was done in concert with preparation of the CDCA Plan, identified the combined effects of vehicle routes and activities in and on archaeological sites. It concluded that vandalism and looting, inadvertent and intentional, resulting from increased levels of access 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. Since the CDCA inventory work of the 1970s and 1980s, the BLM has conducted 124 additional cultural resource inventories between 1989 and 2014 in response to OHV activity throughout the WEMO area. These inventories cover approximately 24,320 acres of the planning area. Additional inventories are being conducted under the PA from 2015 to 2020, that will survey a random sample of 5% or 25,000 acres of the planning area that will provide additional metrics and analytics that help determine the impacts common to all alternatives (See Appendix F).

OHV use 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, are easily displaced by vehicle tires along with artifacts or other cultural materials that may be within or just below the surface of 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. Routes through historic sites may also displace or damage artifacts in the road or immediately adjacent to the route.

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 indirectly affect sites that are off the route by increasing erosion in downstream areas. 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. 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 corridor along routes in which stopping, parking, and camping are allowed, and the corridors along routes in which spectators are allowed to view the events.

In addition to impacts from use of the routes, BLM actions on the routes have the potential to impact cultural resources. Maintenance activities on routes that are designated as OHV Open or OHV Limited have the potential to impact resources as a result of ground disturbance during maintenance activities. Similarly, rehabilitation and reclamation of routes that are designated as transportation linear disturbances involve ground disturbance. Implementation activities that may affect cultural resources include construction of fences or culverts, and placement of signs and kiosks.

Finally, use of OHV routes in areas of importance identified by tribes can indirectly impact the visual characteristics of the area, as well as introduce noise and dust sources that detract from culturally important values. In general, a greater mileage of routes within identified tribal areas would be considered an adverse impact to those values, while designation of routes as transportation linear disturbances in those areas would be considered beneficial. In some cases, a limited number of routes within these areas may be needed to provide continued access for Tribal members; in such cases, designation of routes as transportation linear disturbances would be considered beneficial except to the point where they eliminate tribal access. These routes and areas of importance will be identified through the on-going tribal consultation process.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. Cultural resource impacts were considered in the development of alternative goals and objectives, in designation of individual routes, and in defining specific implementation parameters. The goals and objectives for Alternative 2 focus on enhancing sensitive resource values and areas, and managing access to de-emphasize casual multiple-use OHV and mechanized touring. In contrast, the goals and objectives for Alternative 3 focus on meeting the diverse transportation, access, and recreational needs of the public, and managing access to emphasize casual multiple-use OHV and mechanized touring.

Cultural resource impacts were considered by evaluating individual route locations with respect to previously identified cultural resources and tribal areas currently mapped in a WEMO specific cultural resources Geographic Information Systems (GIS) geodatabase. GIS mapped route locations were analyzed with respect to resource locations, areas within 50 feet to 300 feet of identified resources, or within a tribal area. All routes were analyzed, regardless of proposed designation, and included consideration of stopping and parking distances from routes. Therefore, minimization of cultural resource impacts was a factor both in development of the alternative route networks and in the specific limitations placed on routes in those networks.

The BLM has determined that off-highway travel is impacting known sites and is likely to be occurring in sites yet to be identified. Effects to historic and prehistoric resources observed during the 2013 monitoring program and in previous OHV specific inventories were determined to be associated with authorized and unauthorized travel. These effects include travel through properties located adjacent to routes; camping and the construction of fire ring features within historic and prehistoric resources; looting; “scrapping” of historic materials at sites accessible by road; and increased erosion and loss of vegetation as a result of vehicle use. The BLM anticipates that effects to historic properties resulting from the adoption and implementation of the WMRNP are likely to be similar and repetitive across the entire planning area, reflecting the impacts identified above.

NEPA and NHPA

In the Summary Judgment order, the court found that the analysis of effects on cultural resources within the planning area had not been fully determined. In the 2005 FEIS, the BLM explained that route designation would be reviewed under the Section 106 process, and a programmatic

approach to Section 106 was then being discussed with the California State Office of Historic Preservation. The Section 106 process was not concluded before the ROD for the 2006 WEMO amendment was approved. The court determined that the FEIS was adequate to the extent the effect BLM routes of travel on public land had on cultural resources had been fully determined. To the extent the effect of travel on cultural resources had not been fully determined, the FEIS was inadequate.

BLM acknowledges that the current WMRNP will adversely affect cultural resources and believes it has enough information to date to define the effects of the plan on cultural resources on a programmatic land use planning basis. Moreover, BLM is developed and is implementing a PA that will specify how individual effects, once they are identified, will be addressed. The level of identification necessary to identify individual effects is being determined in consultation with SHPO and the ACHP. The level of identification will take into account the results of cultural resource sensitivity modeling efforts described above, field information being collected by BLM cultural resource crews currently in the field and derived from existing cultural resource inventories and records, BLM cultural resource and travel management policy, and a systematic interpretation of a hierarchy of routes in the WEMO Planning Area. This hierarchy of routes may include newly designated open routes, existing rights-of-way, previously designated routes, and routes designated as transportation linear disturbances. This phased approach, developed through consultation with consulting parties, once agreed upon by these three agencies, will be presented in the PA.

By regulation, agencies are authorized to use a phased approach where alternatives under consideration consist of large land areas, (43 CFR 800.4(b)(2)). An agency official may defer final identification and evaluation of historic properties if specifically provided for in a Programmatic Agreement (PA) (among other things) executed pursuant to 43 CFR 800.14(b). *Id.* A PA may be used when effects on historic properties are similar and repetitive, regional in scope, when effects on historic properties cannot be fully determined prior to approval of an undertaking, or in other situations. *Id.*

The use of a PA under Section 106 addresses the identification and data considerations reflected in 36 CFR 800.4(b) and 40 CFR 1502.22. The use of a phased approach to identify and evaluate historic properties within the WEMO Planning Area will involve a combination of class inventories coupled with other identification efforts, both known and to be determined (as indicated above). The details of the phased approach to identification and evaluation of cultural resources for the planning area are currently being negotiated through consultation and development of the PA.

BLM policy for travel management and cultural resources indicates that historical property inventory requirements will vary depending on the quality of existing information, the extent of potential change of OHV use, the expected density and nature of historic properties, and the potential effects of OHV use designation. See BLM Instruction Memorandum (IM) 2012-067, *Clarification of Cultural Resource Considerations for Off-Highway Vehicle Designations and Travel Management*. “Designations of new routes or areas, or new localities where concentrated OHV use may occur have the potential to cause effects to historic properties. Historic properties in the APE must be identified and any potential adverse effects must be resolved prior to designation. Appropriate inventory of the APE and tribal consultation should be conducted prior to authorizing use of new locations proposed as staging areas or similar areas of concentrated OHV use. For those areas with limited cultural resource information, a phased inventory

approach, developed in consultation with the SHPO, may be appropriate in order to allow continued use of an existing route network or to retain an open area, if those areas have not previously been inventoried. For instance, a Class II inventory, or development and field testing of a cultural resources probability model, followed by Class III inventory in high potential areas and for specific development projects should be considered for larger planning areas for which limited information is currently available.” Id.

“Known sites and sensitive resource areas may be protected through rerouting, reconstruction, new construction, limitations on vehicle type and time or season of travel, or designation of routes as transportation linear disturbances. If the BLM determines that a designation has the potential to adversely affect a known historic property, it will consult with the SHPO, Indian tribes, and other interested parties on measures to avoid, minimize or mitigate the adverse effect according to the BLM PA and applicable State protocol or 36 CFR Part 800 regulations.” Id.

Likewise, BLM IM 2012-067 provides guidance for designation of routes as transportation linear disturbances. “Proposed designations that: (1) impose new limitations on an existing route; (2) close an open route or area; or (3) keep an area closed will not typically have an effect on historic resources in the APE, but have the potential to cause effects if the decision results in a shift, concentration, or expansion of travel onto other existing routes or into areas that are likely to have historic properties. Where there is a reasonable expectation that a proposed designation will shift, concentrate or expand travel into areas where historic properties are likely to be adversely affected, Class II or Class III inventory focused on areas where adverse effects are likely to occur is recommended prior to designation.” Id.

Section 106 does not require a complete Class III inventory of historic properties in any given resource area. Section 106 requires an agency make a reasonable and good faith effort to carry out appropriate identification efforts. These efforts may include background research, consultation, oral history interviews, sample field investigation and field survey, the taking into consideration past planning, research and studies, the nature and magnitude of the undertaking, the nature and extent of the potential effect, and the likely nature and location of historic properties within the area of potential effect. Id. The reasonable and good faith effort is determined through consultation with the ACHP and SHPO.

This Section 106 approach resolves the identification and data deficiencies concerns for 36 CFR 800.4(b) and 43 CFR 8342.1 by using a phased approach to identification of historic properties that involves more than a Class I Inventory but less than a Class III Inventory. The details of the phased approach of identification of cultural resources for the WEMO Planning Area are being negotiated through consultation and development of the PA under 36 CFR 800.4(b)(2). This process is fully compliant with the requirements of NHPA, NEPA and is consistent with more recent BLM policy guidance for TMPs. As indicated in *NEPA and NHPA, A Handbook for Integrating NEPA and Section 106, CEQ and ACHP, March 2013*, the Council on Environmental Quality (CEQ) and the ACHP encourage coordination of the requirements of NEPA and the NHPA. Both laws authorize the use of alternative procedures, include information gathering, the evaluation of potential effects of the proposed action on historic properties, consideration of measures that may avoid or minimize the potential for adverse effects, and require the process to be completed prior to a Federal decision.

Important distinctions exist however between the NEPA and NHPA Section 106 reviews in terms of the types, scope, and geographical area of environmental review procedures, the nature

of public engagement and tribal consultation, level and specificity of information requirements, procedures for developing alternatives, documentation, and timing.

- Both NEPA and Section 106 require agencies to identify cultural or historic properties; Section 106 specifically requires an agency make a reasonable and good faith effort to identify cultural or historic properties. For this planning project, this effort includes the additional field surveys, ongoing modeling of cultural areas, and a PA, taken into consideration along with existing information.
- The NEPA scope of the affected environment includes cultural and tribal values of historic properties and sites.
- NEPA informational needs vary and are reflective of the type and nature of decisions to be made. The broad planning decisions to be made in this document are evaluated programmatically; Section 106 informational needs are tailored to the scope of the action, and as such, would apply to the broad areas in this planning project (e.g., ACECs, riparian areas, grazing availability, and areas with concentrations of minority populations). Plan level impact will be addressed, but not necessarily resolved prior to approval of the ROD for the plan amendment decision.
- The project activity-level decisions (specific route designations and minimization measures based on Travel Management Areas through Travel Management Plans) are considered in the context of information for the particular area affected by each route and its stopping, parking, and camping zone. Coordination of the planning and implementation processes allows for consideration of information gathered through each process into the range of alternatives, and accommodates potential changes to those alternatives as the processes proceed. Project level impact will not be addressed until project level decisions are reached.
- The NEPA process requires analysis of all reasonable alternatives and identification of a preferred alternative at the Draft EIS stage, with limited exceptions. The Section 106 process does not require identification and evaluation of historic properties for all NEPA alternatives, rather the Section 106 process allows for identification and evaluation of historic properties as the alternatives are refined.
- Section 106 may require additional identification of historic resources as part of an effort to develop and evaluate alternatives to the proposed undertaking to avoid or mitigate adverse effects. For this planning effort, the BLM has established a schedule and specifications for a model to include surveys to identify potential historic properties and identify specific geographic areas where such surveys should occur.
- A Section 106 PA is a flexible tool that fits within the adaptive management dynamic of travel management and establishes a process for concluding future consultation and considering effects to historic properties.

The BLM will resolve adverse effects to historic properties through measures that are memorialized in the signed Section 106 PA and the NEPA ROD. The NEPA document includes the monitoring, compliance, and tracking mechanisms for these measures.

The use of a PA fully comports with the information and evaluation requirements of the NHPA and NEPA and is consistent with more recent BLM policy guidance for travel management

planning. The BLM will complete the PA prior to the Record of Decision for the land use plan amendment; however, complete identification of historic properties, assessment of effects, and resolution of effects will not be completed prior to the WMRNP Record of Decision. Route and area specific effects will be addressed by the BLM in accordance with the process identified in the PA.

Impacts Common to All Alternatives – Livestock Grazing

The decision to authorize grazing and the associated issuance of a grazing permit within a specific allotment do not have the potential to impact cultural resources. However, the implementation of a grazing permit, including the release of livestock into an allotment and the construction of range improvement features to facilitate grazing, may indirectly impact cultural resources. Impacts to cultural resources from livestock grazing are analyzed on a case-by-case, permit-by-permit basis. BLM currently utilizes the Supplemental Procedures for Livestock Grazing Permit/Lease Renewals: A Cultural Resources Amendment to the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer to address the NHPA Section 106 compliance for processing grazing permit renewals for existing livestock allotments.

Impacts from livestock grazing vary depending on the intensity of use of a specific location. The behavioral patterns of livestock indicate tendencies to trail along linear features, such as fencelines, to rub on permanent features, such as rock outcrops, and to congregate near necessary resources, such as watering locations and supplemental mineral sites. Previous research conducted by BLM archaeologists (Halford 1999) focusing on impacts to cultural resources identified patterns expected from grazing activities. These may include disturbance to the horizontal distribution of artifacts on the ground surface and vertical migration of materials below the ground surface. In both instances, the specific patterning and arrangement of cultural materials, a critical component of identifying the patterns of behavior in prehistoric and historic humans, may be obscured, erroneously rearranged, or removed all together. The vertical migration of materials may move artifacts across stratigraphic units and cause the mixing of deposits; thus the stratigraphic integrity of separate occupational periods may be compromised. Trodden, artifacts can undergo several types of damage, including breakage, microchipping and abrasion (Nielson 1991:483-484). Cumulative grazing activity where cultural resources are located can cause impacts to spatial, chronological and functional information, creating the potential for erroneous temporal, spatial and functional interpretations. This may ultimately result in diminished integrity of a site, which may adversely affect its potential to meet National Register criteria.

To address impacts to cultural resources from grazing decisions, BLM uses the Supplemental Procedures for Livestock Grazing Permit/Lease Renewals: A Cultural Resources Amendment to the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer, which institutes a cultural resource site monitoring protocol and standard protective measures to be implemented in the event a cultural resource is being impacted by grazing activities. These standard protective measures include:

- Fencing or enclosure of livestock from the cultural resource sufficient to ensure long-term protection, according to the following specifications:

- the area within the enclosure must be inventoried to locate and record all cultural resources; and
 - the enclosure (i.e. fence) must not divide a cultural resource so that a portion is outside of the fence; and
 - the cultural resource specialist will determine the appropriate buffer to be provided between the cultural resource and its enclosing fence.
- Relocation of livestock management facilities / improvements at a distance from cultural resources sufficient to ensure their protection from concentrated grazing use.
 - Removal of natural attractants of livestock to a cultural resource when such removal, in the judgment of the cultural resource specialist, will create no disturbance to the cultural resource (e.g. removing vegetation that is providing shade).
 - Removal of the area(s) containing cultural resources from the allotment.
 - Livestock herding away from cultural resource sites.
 - Use salting and/or dust bags or dippers placement as a tool to move concentrations of cattle away from cultural sites.
 - Locating sheep bedding grounds away from known cultural resource sites.
 - Other protective measures established in consultation with and accepted by SHPO.

4.9.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to cultural resources from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Competitive event routes that have not been subject to cultural resource inventories require Section 106 review prior to the authorization of use. Cultural resource inventories have not been completed for the proposed “C” routes north of the Navy Road. Resource values recorded in the immediate vicinity of these routes include the historic Trona Railroad Camp, lithic quarries and habitation complexes associated with the prehistoric use of Searles Lake. As yet unidentified cultural resources may be within or adjacent to the routes and may be impacted by the increased use of the routes by vehicles and spectators as described in the impacts common to all alternatives. Impacts may still occur to cultural resources as a result of OHV use in these areas on remaining available routes, despite adopted measures, including fencing, oversight, and measures to increase public information prior to use of routes in the Rand-Fremont area.

Under Alternative 2, the seasonal limitations on “C” routes would have no direct impacts to cultural resources. Competitive event routes that have not been subject to cultural resource inventories will require Section 106 review prior to the authorization of use. Cultural resource inventories have not been completed for the routes north of the Navy Road. Resource values recorded in the immediate vicinity of these routes include the NRHP listed historic Trona Railroad Camp, lithic quarries and habitation complexes associated with the prehistoric use of

Searles Lake. Cultural resources may be within or adjacent to the routes and may be impacted by the increased use of the routes by vehicles and spectators.

Under Alternatives 3, 4, and 5, competitive event routes that have not been subject to cultural resource inventories will require Section 106 review prior to the authorization of use. Cultural resource inventories have not been completed for the specific routes north of the Navy Road and South of the Spangler Open Area, or for routes which connect the city of Ridgecrest with the Spangler Open Area. Resource values recorded in the immediate vicinity of these routes include historic mining sites, prehistoric lithic quarries, lithic scatters, rock shelters, and habitation complexes. The routes south of the Spangler Open Area are located near the Bedrock Springs Area of Critical Environmental Concern, which has been designated for significant cultural resource values. These resources have been determined eligible for listing on the National Register of Historic Places. As yet unidentified cultural resources may be within or adjacent to the routes and may be impacted by the increased use of the routes by vehicles and spectators as described in the impacts common to all alternatives. Mitigation measures are being included to address the identification and evaluation of these routes in the context of the Programmatic Agreement.

The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area under Alternatives 4 and 5 would be made with appropriate mitigation measures to protect cultural resources.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds may be associated with known or unknown cultural resources which may be impacted by OHV use of vehicles. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could impact cultural resources.

Under the No Action Alternative, no change would be made to the list of dry lakes for which designations are made, or to any of the current designations. Therefore, there would be no change in current impacts to cultural resources.

Under Alternative 2, the closure of Koehn lakebed could have a minor direct, beneficial effect on cultural resources associated with the lakebed. The use of this lakebed is not substantial, and the users of Koehn lakebed are not expected to substantially increase use of other routes and areas within the planning area for recreation, and Alternative 2 is not expected to have an indirect, adverse impact to cultural resources by increasing the recreational use of routes in other areas. Under Alternative 2, Coyote dry lake and Cuddeback dry lake would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and there would be no change in impacts to cultural resources. Therefore, this alternative is not anticipated to have an adverse impact on cultural resources.

Under Alternatives 3, 4, and 5, Koehn lakebed would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, which could have a minor direct, beneficial effect on cultural resources associated with the lakebed. The use of this lakebed is not substantial, and the users of Koehn lakebed are not expected to substantially increase use of other routes and areas within the planning area for recreation. Therefore, Alternatives 3, 4, and 5 are not expected to have an indirect, adverse

impact to cultural resources by increasing the recreational use of routes in other areas. Alternatives 3, 4, and 5 would also designate Cuddeback and Coyote lakebeds as OHV Open use. Therefore, this alternative could have an adverse impact on cultural resources on these lakebeds.

Under all alternatives, Chisholm Trail dry lake would remain closed to all types of use, so there would be no change in impacts to cultural resources.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. Maintaining the current permit program as described in WEMO 2006 will have no change in the anticipated impacts to cultural resources from currently authorized OHV travel routes.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV access to the Rand Mountains would be eliminated. Removing the permit requirement as described in WEMO 2006 will have no change in the anticipated impacts to cultural resources from the currently authorized OHV travel routes. Change in the use designation of a route as a result of the removal of the permit will require additional Section 106 cultural resource review.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of reducing the amount of new disturbance that would occur, thus reducing the potential for OHV use to directly impact unknown cultural resources. The effect of these actions is a net beneficial impact to cultural resources.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce the potential for direct impacts to cultural resources, and would thus be more beneficial than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, livestock grazing would continue under the terms and conditions contained in the Final Grazing Decisions issued for active grazing allotments within the West Mojave Planning Area. There are a total of 3,665 inventoried cultural resources located within the 19 active grazing allotments within the planning area.

Under Alternative 2, livestock grazing levels would continue to be managed to the level currently allowable in WEMO for all allotments outside of DT ACECs. Grazing would be discontinued on 107,779 acres of the Ord Mountain Allotment that are within the Ord-Rodman DT ACEC and CHU. Ephemeral sheep grazing would be discontinued on 6,726 acres of the Cantil Common Allotment and 3,323 acres of the Shadow Mountain Allotment within the

Fremont-Kramer DT ACEC. Of the 3,665 inventoried cultural resources located within the 19 active grazing allotments within the planning area, approximately 1,100 of these resources are located on the three allotments that would be affected under this alternative.

4.9.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that OHV use can have direct adverse impacts to cultural resources, as well as indirect impacts to visual, noise, and other values important in tribal areas. Direct impacts to physical resources would likely only occur due to actual contact with OHVs, or by ground disturbance associated with vehicle use, route maintenance, or route reclamation. Therefore, the level of direct impacts tends to be associated with proximity to the resource. The mileage of routes in close proximity to identified cultural resources under all alternatives is presented in Table 4.9-1, and the number of currently known sites which may be affected by routes under each alternative is presented in Table 4.9-2. Indirect impacts in tribal areas are less closely associated with distance between the route and locations of physical resources, but are proportional to the density of OHV Open and OHV Limited routes within each tribal area.

Table 4.9-1. Miles of Routes in Proximity to Previously Recorded Cultural Resources – All Alternatives

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)
No Action Alternative		
Within a Known Site	24.1	35.5
Within 0-50 Feet of a Known Site	20.8	19.5
Within 50-100 Feet of a Known Site	24.1	23.9
Within 100-300 Feet of a Known Site	82.0	98.6
Alternative 2		
Within a Known Site	19.2	40.4
Within 0-50 Feet of a Known Site	16.3	24.0
Within 50-100 Feet of a Known Site	20.2	27.9
Within 100-300 Feet of a Known Site	69.4	111.2
Alternative 3		
Within a Known Site	46.6	12.9
Within 0-50 Feet of a Known Site	31.7	8.7
Within 50-100 Feet of a Known Site	38.0	10.1
Within 100-300 Feet of a Known Site	137.9	42.8
Alternative 4		
Within a Known Site	27.3	32.2
Within 0-50 Feet of a Known Site	21.9	18.5
Within 50-100 Feet of a Known Site	25.2	22.9
Within 100-300 Feet of a Known Site	88.9	91.8
Alternative 5		
Within a Known Site	28.3	31.3

Table 4.9-1. Miles of Routes in Proximity to Previously Recorded Cultural Resources – All Alternatives

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)
Within 0-50 Feet of a Known Site	21.7	18.7
Within 50-100 Feet of a Known Site	25.7	22.3
Within 100-300 Feet of a Known Site	91.2	89.4

Alternative 3 has the greatest potential to impact previously recorded cultural resources with 103 miles more OHV Open and OHV Limited routes for all distances to a known site, as compared to the No Action Alternative. Alternative 2 has the least potential to impact previously recorded cultural resources with 25.9 fewer miles of OHV Open and OHV Limited routes for all distances to a known site, as compared to the No Action Alternative. Alternative 5 has an intermediate impact to previously recorded cultural resources with 15.9 miles more OHV Open and OHV Limited routes for all distances to a known site, and 15.8 fewer miles of transportation linear disturbances as compared to the No Action Alternative.

Table 4.9-2. Number of Previously Recorded Sites in Proximity to Routes – All Alternatives

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)
No Action Alternative		
Known Sites Intersected by a Route	187	241
Known Sites Within 0-50 Feet of a Route	167	233
Known Sites Within 50-100 Feet of a Route	100	179
Known Sites Within 100-300 Feet of a Route	186	329
Alternative 2		
Known Sites Intersected by a Route	160	259
Known Sites Within 0-50 Feet of a Route	139	253
Known Sites Within 50-100 Feet of a Route	82	193
Known Sites Within 100-300 Feet of a Route	139	362
Alternative 3		
Known Sites Intersected by a Route	281	110
Known Sites Within 0-50 Feet of a Route	274	107
Known Sites Within 50-100 Feet of a Route	197	72
Known Sites Within 100-300 Feet of a Route	329	161
Alternative 4		
Known Sites Intersected by a Route	198	231
Known Sites Within 0-50 Feet of a Route	182	218
Known Sites Within 50-100 Feet of a Route	108	173
Known Sites Within 100-300 Feet of a Route	197	324

Table 4.9-2. Number of Previously Recorded Sites in Proximity to Routes – All Alternatives

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)
Alternative 5		
Known Sites Intersected by a Route	200	234
Known Sites Within 0-50 Feet of a Route	190	209
Known Sites Within 50-100 Feet of a Route	115	167
Known Sites Within 100-300 Feet of a Route	205	320

Alternative 2 has the least potential for impacts to known sites by reducing the number of sites in proximity to OHV Open and OHV Limited routes from 640 in the No Action Alternative to 520 in Alternative 2, and has the greatest number of known sites in proximity to transportation linear disturbances with 1,067 miles. Alternative 3 increases the total number of sites potentially impacted from 640 in the No Action Alternative to 752, and has the least number of known sites in proximity to transportation linear disturbances with 1067. Alternative 5 has an intermediate potential for impact with an increase in the total number of sites potentially impacted from 640 in the No Action Alternative to 710, and has the second greatest number of known sites in proximity to transportation linear disturbances with 930 miles.

4.9.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, specific mitigation measures will be applied and implemented based on the Cultural Resources Programmatic Agreement for WEMO, and the associated Management Plans developed in consultation with OHP, ACHP, and tribal and agency partners. Measures identified by BLM, which may be included within the Management Plans, include but are not limited to:

- Modify access to a less impacting designation;
- Install access type restrictor;
- Re-align route to avoid environmentally sensitive area;
- Restrict stopping/parking/camping;
- Install barriers and maintain or upgrade existing barriers;
- Prohibit Special Recreation Permit use;
- Remove attractants;
- Construct and/or install educational information such as signs or kiosks;
- Install step-overs;
- Narrow route for cultural concerns;
- Fencing or enclosure of a cultural resource;
- Monitor the route for signs of increasing impacts to a sensitive area;

- Determine that no additional minimization and mitigation measure is needed based on feature or site evaluation pursuant to 36 CFR 60; and
- Determine that no additional minimization and mitigation measure is needed based on field identification (i.e., ground truthing of GIS data indicates no resource is present, no resources are impacted or existing minimization and mitigation is adequate).

Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to cultural resources. Under the No Action Alternative, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs would reduce the potential for damage to unidentified cultural resources adjacent to routes, as compared to pre-2006 conditions before these limitations were enacted.

Under Alternatives 2, 3, 4, and 5, limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and further limiting stopping and parking limits would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for direct or indirect effects to cultural resources. Specific mitigation measures will be applied and implemented based on the Cultural Resources Programmatic Agreement for WEMO, and the associated Treatment Plans developed in consultation with OHP, ACHP, agency and tribal partners. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific cultural resource impacts are considered before authorizing new OHV Open and OHV Limited routes.

4.9.6 Residual Impacts After Implementation of Mitigation Measures

Residual effects to cultural resources could continue after application of mitigation measures. Although impacts would be reduced from those that would have existed without mitigation measures, OHVs and livestock may still enter undisturbed areas and adversely impact unidentified resources.

4.10 Visual Resources

4.10.1 Methodology

The 2005 WEMO EIS included a general discussion of the effects of OHV use on visual resources. The Court's Summary Judgment and Remedy order did not specifically reach conclusions, or provide direction, regarding the sufficiency of this analysis.

4.10.2 Impacts Common to All Alternatives

In general, OHV Open and OHV Limited routes present a contrast, in terms of color, form, texture and line with the surrounding landscape, and therefore may represent an adverse impact to visual resource values. Similarly, the presence of OHVs on those routes, and fugitive dust generated by moving vehicles, can attract the attention of a casual viewer, and may therefore be an adverse impact. Designation of routes as transportation linear disturbances and subsequent reclamation would eliminate the presence of vehicles and fugitive dust in the short-term. In the longer term, designation of routes as transportation linear disturbances and reclamation would

reduce the impacts of the routes themselves as they begin to re-vegetate and disappear due to decreased levels of use. However, this does not completely protect routes from impacts to visual resources from illegal use of OHV Closed routes. In general, management prescriptions such as designation of routes as transportation linear disturbances in areas with erodible soils, and limiting the stopping and parking distances from routes, are beneficial to visual resources by limiting the amount of vegetation removal and soil disturbance, both of which create visual contrast.

OHV access and use of authorized existing disturbed routes may slightly increase impacts to visual resources over time, despite the presence of existing disturbance. Therefore, it cannot be concluded that designating routes as OHV Open, OHV Limited or OHV Closed will result in a net reduction of adverse impacts to visual resources. The BLM considered VRM objectives when designating routes as OHV Open or Limited, which were designated as OHV Closed in the No Action Alternative in an effort to enhance VRI values. Moreover, designation of too many routes as OHV Closed would go against RMP objectives established in the CDCA Plan to provide OHV Open and OHV Limited access. OHV access is required for viewers to enjoy visual resources, which are often remote and challenging for the public to travel to. Further, the type of recreation use does not fully determine the utilization of specific VRM class objectives, as they do not explicitly dictate the type of travel allowed.

The visual resources impact analysis evaluates the mileage and acreage of routes in VRM classes and the acreage of routes in each VRM Class within each VRI Class. In VRI Class III and IV areas, routes may have a larger magnitude of impact on the casual observers and visual resources, because the VRM objectives allow moderate to major change in the natural landscape character. Visual impacts on the casual observer and visual resources as a whole would be less in VRI Class I and II, because routes should not be visually dominant, or noticeable to the casual observer. While the visual impact on the user would be minimal, routes may still impose character change to the inventoried scenic quality and may be considered adverse, but would be limited in magnitude. Impacts to VRI Class III and IV areas are more readily minimized and mitigated through the route designation process than impacts in VRI Class I and II areas, because the appearance of routes and OHVs is more consistent with the management objectives of Class III and IV areas. Thus, some VRM management objectives can be met through route closure and/or rehabilitation to preserve, retain and/or maintain landscapes. In VRI Class I (OHV Closed routes only) and II (less than 1 percent of WEMO route network) areas, where specific legislative decisions have been made to maintain previous landscapes, the route designation process has less ability to minimize and mitigate impacts. Therefore, other forms of land use planning decisions must be utilized to adhere to the respective VRM class objectives for an impacted VRI class. VRM Class I and II objectives which closely correspond with VRI class areas are more restrictive, and may include the complete avoidance of attracting the attention of casual viewers, preserving existing character and reducing the magnitude of the impact by designating fewer OHV Open or OHV Limited routes in VRI Class II or in areas of high sensitivity. Furthermore, much of the impact from the route network is from the presence of the routes, rather than their use.

The impact of the presence of routes does not substantially vary among alternatives since natural rehabilitation of routes can take long periods of time. The rate of natural rehabilitation would be a limiting factor in the planning horizon, which does not vary among alternatives. However, rehabilitation that is human-driven has the capacity to increase visual values in the WEMO

Planning area faster than natural rehabilitation. Although OHV access is considered to be an adverse impact to visual resources, it is also necessary, in many areas, to provide access for viewers to enjoy the visual resources in the region.

A public lands user that is driving an OHV at high speed may be less likely to notice impacts to texture, color line and form as opposed to a non-mechanized user traveling at low speeds with occasional pauses to enjoy areas with high scenic values. In addition to considering scenic values, the BLM incorporated sensitivity levels into the route designation process through assessing the OHV route network for the type of use, amount of use, public interests, adjacent land uses, special areas and any other factors to be considered (See resource triggers in Chapter 2.2). Also, distances to visual impacts were considered and overall impacts may be reduced through limiting stopping, parking and camping to previously disturbed areas and within 100 feet from the centerline of the OHV Open route, as opposed to 300 feet previously authorized in the CDCA Plan. Additional resource triggers for the route designation process that have the potential to increase visual values are: VRM Class II objectives, air, soil, water (riparian areas), special habitat, residences, ACECs, CDNCLs, and other sensitive areas. Reducing impacts to these resources also results in a general direct reduction of potential impacts to VRI Classes II, III and IV.

VRM classes help to direct management objectives so that the level of OHV access and use are considered with respect to the three VRI values, such as scenic quality, increase sensitivity levels, and consider distance between impacts and the viewer. However, since VRI Classes approved in the 2016 DRECP LUPA were based on existing conditions, and that the WMRNP does not authorize any new ground disturbance (i.e. no change to existing conditions), the WMRNP plan amendments and route network alternatives would not add to the existing authorized level of disturbance to visual resources. Instead, because all action alternatives designate routes as transportation linear disturbances and eventually result in revegetation, any of the action alternatives would be considered to be beneficial to visual resources.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. In that analysis, visual resource impacts were not specifically considered as a criterion in determining which routes would remain open and which would be designated as transportation linear disturbances under the various alternatives.

4.10.3 Differences in Impacts Among Plan Amendment Alternatives

The grazing alternatives in PA VII would likely have minimal effect on visual resources. It is likely that grazing would cease on the Ord Mountain Allotment under Alternative 2, resulting in the removal of cattle and a reduction in OHV travel needed to support grazing operations. However, these changes are expected to be minimal, and would not affect visual resources for most viewers. Therefore, there is no further discussion of PA VII in this section. Specific impacts to visual resources from PA III through PA VI are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Because these activities do not affect visual resources, the No Action Alternative would have no direct or indirect impact on visual resources.

Under Alternatives 2, 3, 4, and 5, the visual resource management class northeast of the Spangler Hills Open Area is predominately VRM Class III and IV. There are two small pockets of Class II that the “C” routes pass through to the north of the Navy Road. These two small areas measure approximately 11 and 142 acres, respectively. The seasonal limitations on “C” routes under Alternative 2 may reduce their use for OHV events, and thus have localized beneficial impacts on visual resources near those routes. Additional parameters can also be built into SRPs that could reduce OHV numbers, method of movement, fugitive dust and trash pickups.

Under Alternatives 4 and 5, the decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area would be made with appropriate mitigation measures to protect visual resources.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the presence of more routes and vehicles is considered to be an adverse impact to visual resource values, but the presence of these routes is also needed to provide access to the observers. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could affect visual resource values, as well as access for observers, on these lakebeds.

Under Alternative 2, the OHV Closed use designation of Koehn lakebed associated with this decision would have a beneficial impact in reducing motorized use of the lakebed, and would reduce adverse impacts to visual vistas available from the lakebed. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes would be low, and Alternative 2 is not expected to have an indirect, adverse impact to visual resources by increasing the recreational use of routes in other areas. Under Alternative 2, Coyote dry lake and Cuddeback dry lake would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and there would be no change in impacts to visual resources at those locations.

Under Alternatives 3, 4, and 5, the designation of Koehn dry lake as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit” would have a beneficial impact in reducing motorized use of the lakebed, and would reduce adverse impacts to visual vistas available from the lakebed. Under Alternatives 3, 4, and 5, Coyote dry lake and Cuddeback dry lake would be OHV Open use. This decision would have an adverse impact in increasing OHV use of vehicles on the lakebeds, but could also have a beneficial impact in increasing the ability of the public to access and use the visual vista available from the lakebeds.

Under all alternatives, Chisholm Trail dry lake would remain closed to all types of use, so there would be no change in impacts to visual resources.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. Because access in this area does not currently impact visual resources, these alternatives would have no direct or indirect impact on visual resources. Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Eliminating the permit requirement would not result in designation of additional routes or an increase in soil disturbance. These alternatives may result in an increase in recreational use of the existing routes, but this increase is expected to be minor. Therefore, these alternatives are not expected to have any effect on visual resources.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of allowing previously disturbed areas to become re-vegetated over time, and also reduce the amount of new disturbance that would occur, thus reducing direct impacts to visual resources. The effect of these actions is a net beneficial impact to visual resources.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce the potential for direct impacts to visual resources, and would thus be more beneficial than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

4.10.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that the size of the available transportation network, and the management restrictions placed on that network, can have both adverse and beneficial effects on visual resources. There are a variety of landscape features to consider when determining impacts to visual resources within the WEMO Plan Area. Although the presence of routes is considered to be a modification to visual resource values, the presence of these routes is also needed to provide access and use to the observers. In addition, the type of route subdesignation can result in a reduction of adverse impacts and enhancement to the visual harmony of visual resources, such as a route limited to non-motorized use. Furthermore, not all routes receive the same level of use, with some routes only being two-track as opposed to four-track and may receive only a few uses per year. These areas are more likely to retain their natural character. In the short term, because most routes remain on the ground, there is not a measurable difference in impacts between alternatives. In the longer term, some transportation linear disturbances would be actively rehabilitated, and generally would be disguised to line of sight from open routes. The mileage of routes within each VRM class in the planning area under the each alternative is presented in Table 4.10-1. The acreage of routes in each VRM class within each VRI class is presented in Table 4.10-2. VRI class scenic quality values, sensitivity rating levels, and distance zones are exhibited in Tables 4.10-3, 4.10-4 and 4.10-5, respectively. These

data allowed the BLM to make visual resource management decisions for route designations in the action alternatives.

Table 4.10-1. Miles of Routes in Visual Resource Classes – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
No Action Alternative				
VRM Class I	47.3	0	4.9	397.0
VRM Class II	926.1	0.5	12.7	1641.2
VRM Class III	2903.6	0.1	4.7	4506.5
VRM Class IV	1835.9	0	4.2	2993.8
Alternative 2				
VRM Class I	58.3	<0.1	10.3	380.7
VRM Class II	772.4	5.1	16.0	1786.9
VRM Class III	2597.1	24.9	5.8	4786.7
VRM Class IV	1566.3	1.7	5.2	3259.9
Alternative 3				
VRM Class I	58.1	<0.1	16.9	374.2
VRM Class II	1813.4	8.4	62.3	696.3
VRM Class III	4996.7	78.4	6.3	2335.2
VRM Class IV	3449.0	2.0	7.9	1374.4
Alternative 4				
VRM Class I	52.3	4.1	8.6	384.2
VRM Class II	1052.6	25.5	80.0	1422.3
VRM Class III	3041.9	53.2	20.7	4298.9
VRM Class IV	1846.0	1.7	6.4	2979.1
Alternative 5				
VRM Class I	46.7	<0.1	15.3	387.2
VRM Class II	1026.9	32.9	93.6	1427.1
VRM Class III	3162.8	88.5	16.1	4148.1
VRM Class IV	2045.2	2.0	8.5	2777.0

Under Alternative 5, a majority of the OHV Open/Limited miles (approximately 83 percent), occur within VRI Class III and IV assigned lands. Impacts from OHV Open/Limited routes to VRI Class III and IV lands are assigned a majority of VRM Class III and IV objectives (approximately 99 percent). Therefore, within the WEMO Plan Area, VRM Class Objectives and VRI lands are very near one-to-one overlap. The No Action Alternative has around 10 percent fewer miles of OHV Open/Limited routes in areas with VRM Class III and IV assigned objectives, and about 7 percent fewer miles of OHV Open/Limited routes on lands with VRM Class I and II objectives. Furthermore, Alternative 5 has only approximately 2 percent of non-OHV and non-mechanized routes within VRM Class II, III and IV managed lands. Thus, the

majority of visual impacts to VRM class objectives within VRI Class III and IV lands are from OHV Open/Limited use routes.

The BLM designated fewer miles of OHV Open/Limited routes in VRM Class II areas, because VRI Class II lands that are managed for VRM Class II objectives only allow for slight modifications to the characteristic landscape. OHV Open/Limited routes were not designated in VRI Class I lands. VRI Class II lands that are managed under VRM Class II objectives allow for minor changes from management activities, and these changes should not significantly alter the basic elements which established the inventory class. Alternative 2 designates fewer miles of OHV Open/Limited routes in general than the No Action and other action alternatives, and has 254.4 fewer miles of OHV Open/Limited routes than Alternative 5. Alternative 3 has the highest amount of OHV Open/Limited route mileage across all impacted VRI Class I, II, and III lands, making it the most impactful to visual resources. Alternative 3 has 1,041 more miles of OHV Open/Limited routes in lands managed for VRM Class II than Alternative 2.

Table 4.10-2. Acreage of Routes in VRM Classes by VRI Class¹

VRM Class	VRI Class I	Percent of Area	VRI Class II	Percent of Area	VRI Class III	Percent of Area	VRI Class IV	Percent of Area
No Action Alternative								
VRM Class I ¹	33.9	1.1 ⁻⁵	2.8	9.0 ⁻⁷	6.1	1.9 ⁻⁶	6.2	1.9 ⁻⁶
VRM Class II	0	0	834.6	2.7 ⁻⁴	319.9	1.0 ⁻⁴	185.4	5.9 ⁻⁵
VRM Class III	0.0001	3.2 ⁻¹¹	361.2	1.2 ⁻⁴	2248.8	7.3 ⁻⁴	1516.7	4.9 ⁻⁴
VRM Class IV	3.5	1.1 ⁻⁶	18.2	5.9 ⁻⁶	152.3	4.9 ⁻⁵	2429.1	7.8 ⁻⁴
Total	37.4	1.2⁻⁵	1216.8	3.9⁻⁴	2727.1	8.8⁻⁴	4137.4	0.001
Alternative 2								
VRM Class I	34.7	1.1 ⁻⁵	2.8	9.0 ⁻⁷	6.1	1.9 ⁻⁶	6.1	1.9 ⁻⁶
VRM Class II	0	0	674.4	2.8 ⁻⁴	273.9	8.8 ⁻⁵	170.8	5.5 ⁻⁵
VRM Class III	0.0001	3.2 ⁻¹¹	368.4	1.2 ⁻⁴	1903.5	6.1 ⁻⁶	1450.4	4.7 ⁻⁴
VRM Class IV	3.5	1.1 ⁻⁶	32.4	1.0 ⁻⁵	160.9	5.2 ⁻⁵	2032.6	6.6 ⁻⁴
Total	38.2	1.2⁻⁵	1078	3.5⁻⁴	2344.4	0.002	3659.9	0.001
Alternative 3								
VRM Class I	35.5	1.1 ⁻⁵	2.9	9.6 ⁻⁷	6.3	2.0 ⁻⁶	6.9	2.2 ⁻⁶
VRM Class II	0	0	1929.9	6.2 ⁻⁴	487.9	1.6 ⁻⁴	262.1	8.5 ⁻⁵
VRM Class III	0.0002	3.2 ⁻¹¹	659.9	2.1 ⁻⁴	4197.3	0.001	2377.9	7.7 ⁻⁴
VRM Class IV	3.5	6.5 ⁻¹¹	91.2	2.9 ⁻⁶	319.7	1.0 ⁻⁴	4465.6	0.001
Total	39	2.5⁻⁵	2683.9	8.7⁻⁴	5011.2	0.002	7112.5	0.002
Alternative 4								
VRM Class I	33.8	1.1 ⁻⁵	2.8	9.0 ⁻⁷	6.1	2.0 ⁻⁶	6.2	2.0 ⁻⁶
VRM Class II	0	0	1086.9	3.5 ⁻⁴	348.4	1.1 ⁻⁴	203.8	6.6 ⁻⁵
VRM Class III	0.0008	2.6 ⁻¹⁰	397.9	1.3 ⁻⁶	2437.7	7.9 ⁻⁴	1588.1	5.1 ⁻⁴
VRM Class IV	3.5	1.1 ⁻⁶	19.3	6.1 ⁻⁶	159.9	5.2 ⁻⁵	2440.1	7.9 ⁻⁴
Total	37.3	1.2⁻⁵	1506.9	4.9⁻⁴	2952.1	9.5⁻⁴	4238.2	0.001
Alternative 5								
VRM Class I	34.3	1.1 ⁻⁵	2.7	8.7 ⁻⁷	6.1	2.0 ⁻⁶	6.2	2.0 ⁻⁶
VRM Class II	0	0	1074.2	3.5 ⁻⁴	353.2	1.1 ⁻⁴	200.9	6.5 ⁻⁵
VRM Class III	0.0002	3.2 ⁻¹¹	426.6	1.4 ⁻⁴	2527.1	8.2 ⁻⁴	1687.4	5.4 ⁻⁴
VRM Class IV	3.5	1.1 ⁻⁶	35.8	1.1 ⁻⁵	174.9	5.6 ⁻⁵	2683.7	8.7 ⁻⁴
Total	37.8	1.2⁻⁵	1539.3	4.9⁻⁴	3061.3	9.9⁻⁴	4578.2	0.001

¹ This is the acres of routes in VRM Class I – IV acres within each VRI Class I - IV

Acreage of impact to VRI Classes within VRM Classes across alternatives appears very small due to the large size of the WEMO Plan Area (3.1 million acres). For example, in Alternative 3 which has the most miles of OHV Open/Limited routes, less than one-one thousandth of the total acres in the planning area is impacted by OHV use. However, despite this seemingly small number there are still potential adverse impacts to visual resources throughout the network and across all alternatives. Observational analysis shows that routes within the characteristic landscape can be seen from long distances depending on the lighting (side/back/front), angle and topography directly in front of the observer’s position. Thus, VRI III and IV Class lands which have a greater amount of existing disturbed routes, may still result in adverse impacts to visual values. Moreover, the impacts from OHV routes are evaluated in the DRECP LUPA (2016), and are in general conformance with the VRM objectives assigned to the corresponding VRI lands.

Impacts to VRI Class II lands may be more readily minimized through natural rehabilitation or other mitigation measures to less than significant due to the small portion of route impacts to the planning area. VRI Class II lands tend to have more scenic qualities and are in areas that can only be accessed by OHV Open/OHV Limited routes. The OHV Open/Limited routes generally lead to the boundaries of these lands, but there is a limited mileage of routes designated as OHV Open or OHV Limited within them. Furthermore, only a small mileage of non-motorized and non-mechanized routes were designated within these areas. Alternative 2 has the least potential for impacts to VRI II lands with 138.8 acres impacted by OHV Open/Limited routes. Comparatively, Alternative 3 has approximately 1,467 acres more of potential impacts to VRI Class II. Furthermore, Alternative 3 has nearly 2,284 acres more impact to VRI Class III lands, and 2,975 acres more impact to VRI IV Class lands across all VRM classes as compared to the No Action Alternative. Alternative 5 has approximately 240 acres more of potential impacts to VRI II lands with VRM Class II objectives, 278 acres more to VRI III lands with VRM Class III objectives, and 254 acres more to VRI IV lands with VRM Class IV objectives as compared to the No Action Alternative, and is considered an intermediate alternative for impacts to visual resources.

Table 4.10-3. Acreage of Routes in VRM Classes by VRI Scenic Quality Ratings¹

VRM Class	Scenic Quality Ratings					
	A	Percent of Area	B	Percent of Area	C	Percent of Area
No Action Alternative						
VRM Class I	0	0.0 ⁻⁶	8.3	2.7 ⁻⁶	6.8	2.2 ⁻⁶
VRM Class II	15.1	4.9 ⁻⁶	906.0	2.9 ⁻⁶	418.8	1.6 ⁻⁴
VRM Class III	7.6	2.6 ⁻⁶	822.1	2.7 ⁻⁴	3297.1	0.001
VRM Class IV	0.003	9.7 ⁻¹⁰	151.9	4.9 ⁻⁵	2447.7	7.9 ⁻⁴
Total	22.7	7.3 ⁻⁶	1888.3	6.1 ⁻⁴	6170.4	0.002
Alternative 2						
VRM Class I	0	0	8.4	2.7 ⁻⁶	6.7	2.2 ⁻⁶
VRM Class II	10.03	3.2 ⁻⁶	738.7	2.4 ⁻⁴	370.4	2.0 ⁻⁴
VRM Class III	10.5	3.4 ⁻⁶	770.9	2.5 ⁻⁴	2940.9	9.5 ⁻⁴
VRM Class IV	0.003	9.7 ⁻¹⁰	149.5	4.8 ⁻⁵	2076.5	6.7 ⁻⁴
Total	20.5	6.6 ⁻⁶	1667.5	5.4 ⁻⁴	5394.5	0.002

Table 4.10-3. Acreage of Routes in VRM Classes by VRI Scenic Quality Ratings¹

VRM Class	Scenic Quality Ratings					
	A	Percent of Area	B	Percent of Area	C	Percent of Area
Alternative 3						
VRM Class I	0	0	8.4	2.7 ⁻⁶	7.7	2.5 ⁻⁶
VRM Class II	20.2	6.5 ⁻⁶	2033.9	6.6 ⁻⁴	625.9	2.0 ⁻⁴
VRM Class III	12.9	4.2 ⁻⁶	1379.7	4.6 ⁻⁴	5842.6	0.001
VRM Class IV	0.003	9.7 ⁻¹⁰	309.9	9.9 ⁻⁵	4566.7	0.001
Total	33.1	1.1 ⁻⁵	3731.9	0.001	11042.9	0.003
Alternative 4						
VRM Class I	0	0	8.3	2.7 ⁻⁶	6.8	2.2 ⁻⁶
VRM Class II	23.3	7.5 ⁻⁶	1167.1	3.8 ⁻⁴	448.7	1.4 ⁻⁴
VRM Class III	10.6	3.4 ⁻⁶	895.1	2.9 ⁻⁴	3518.1	0.001
VRM Class IV	0.003	9.7 ⁻¹⁰	143.2	4.6 ⁻⁵	2476.1	7.9 ⁻⁴
Total	33.9	1.1 ⁻⁵	2213.7	7.1 ⁻⁴	6449.7	0.002
Alternative 5						
VRM Class I	0	0	8.2	2.7 ⁻⁶	6.8	2.2 ⁻⁶
VRM Class II	23.9	7.5 ⁻⁶	1151.1	3.7 ⁻⁴	453.3	1.5 ⁻⁴
VRM Class III	10.5	3.4 ⁻⁶	956.2	3.1 ⁻⁴	3674.4	0.001
VRM Class IV	0.003	9.7 ⁻¹⁰	170.9	5.5 ⁻⁵	2723.6	8.9 ⁻⁴
Total	34.4	1.1 ⁻⁵	2286.4	7.4 ⁻⁴	6858.1	0.002

¹ This is the acres of routes in VRM Class I – IV acres within each VRI Class I - IV

Scenic quality measures the visual appeal of a tract of land with three A, B and C Class ratings utilizing a point system based off seven key factors and their respective scoring range.

- Landform (1 to 5)
- Vegetation (1 to 5)
- Water (0 to 5)
- Color (1 to 5)
- Adjacent Scenery (0 to 5)
- Scarcity (1 to 5)
- Cultural Modification (-4 to 2)

Vegetation, color and cultural modification are the scoring ranges that receive the most potential impacts from OHV use. Disturbed routes have the ability to reduce vegetation, lighten or darken the color and are considered undesirable cultural modifications to the characteristic landscape that can leave persistent scars in arid and semi-arid landscapes (DRECP LUPA). These potential impacts result in a loss of points for these factors, although other factors are also impacted by OHV use. Reduction of impacts to vegetation, color and cultural modifications may still not allow for an inventoried area to be changed from a Class C to B. The majority of impacted lands are Scenic Quality Class C (see Figure 3.10-3), which consists of a score of 11 or less (see BLM Manual H-8410-1). A scenic quality evaluation of each OHV Open/Limited route within the planning area was not done, because route designations under all alternatives were selected from the baseline inventory which is authorized existing disturbance under the DRECP LUPA. Furthermore, the designation of routes as OHV Open/Limited was considered during the designation process using scenic quality data provided by the DRECP LUPA.

This FSEIS analyzes impacts to scenic quality using the same methods as the DRECP LUPA, which is through data analysis and management decisions that conform to VRM objectives. Furthermore, the WMRNP does not authorize new disturbance, and generally does not take points away from already established scenic quality evaluations. Moreover, as population continues to grow and OHV use becomes more popular, visual resource inventories may need to be reassessed to determine if OHV impacts are increasing from use of the baseline route network. Alternative 3 has the greatest potential to impact Scenic Quality Class C lands with 4,184.8 acres more than Alternative 5. Therefore, if Alternative 3 were selected as the preferred alternative, it would require the BLM to consider more management objectives for modifications from OHV routes use. This planning process has the potential to add points to scenic quality criteria ratings. Further, Alternative 3 has the potential to reduce the BLM's ability to shift a Scenic Quality C area into a B, or at best an A area. Alternative 2 has the least potential to impact Scenic Quality Class C with 1,463.6 acres fewer than Alternative 5, and would require the least VRM management objectives to add points to scenic quality ratings. Alternative 5 can be considered as having intermediate impacts with 6,858.1 total impacted acres for Scenic Quality Class C, which is approximately 687.7 acres less than the No Action Alternative. Furthermore, Alternative 5 has a potential to impact 398 more acres of Scenic Quality B areas as compared to the No Action Alternative.

Table 4.10-4. Acreage of Routes in VRM Classes by VRI Sensitivity Ratings¹

VRM Class	VRI Sensitivity Rating					
	Low	Percent of Area	Medium	Percent of Area	High	Percent of Area
No Action Alternative						
VRM Class I	0.9	2.9 ⁻⁷	5.3	1.7 ⁻⁶	8.9	2.9 ⁻⁶
VRM Class II	170.6	5.5 ⁻⁵	41.1	1.3 ⁻⁵	1128.3	3.6 ⁻⁶
VRM Class III	585.4	1.9 ⁻⁴	1175.6	3.8 ⁻⁴	2365.7	7.6 ⁻⁴
VRM Class IV	1923.3	6.2 ⁻⁴	511.1	1.6 ⁻⁴	165.2	5.3 ⁻⁵
Total	2680.2	8.6 ⁻⁴	1733.1	5.6 ⁻⁴	3668.1	0.001
Alternative 2						
VRM Class I	0.9	2.9 ⁻⁷	5.3	1.7 ⁻⁶	8.9	2.9 ⁻⁶
VRM Class II	156.6	1.9 ⁻⁴	41.6	1.3 ⁻⁵	920.9	3.0 ⁻⁴
VRM Class III	534.9	1.7 ⁻⁴	1135.7	3.6 ⁻⁴	2051.8	6.6 ⁻⁴
VRM Class IV	1557.9	5.0 ⁻⁴	480.5	1.5 ⁻⁴	187.5	6.0 ⁻⁵
Total	2250.3	7.3 ⁻⁴	1663.1	5.3 ⁻⁴	3169.1	0.001
Alternative 3						
VRM Class I	1.6	5.2 ⁻⁷	5.3	1.7 ⁻⁶	9.2	2.9 ⁻⁶
VRM Class II	243.9	7.9 ⁻⁵	51.6	1.6 ⁻⁵	2384.5	7.6 ⁻⁴
VRM Class III	894.1	2.9 ⁻⁴	1818.6	5.8 ⁻⁶	4522.5	0.0014
VRM Class IV	2954.1	9.5 ⁻⁴	1502.9	4.8 ⁻⁴	419.6	1.4 ⁻⁴
Total	4093.7	0.0013	3378.4	0.0011	7335.8	0.002
Alternative 4						
VRM Class I	0.9	2.9 ⁻⁷	5.3	1.7 ⁻⁶	8.9	2.9 ⁻⁶
VRM Class II	189.8	6.1 ⁻⁵	48.0	1.6 ⁻⁵	1401.3	4.5 ⁻⁴
VRM Class III	614.8	1.9 ⁻⁴	1236.6	3.9 ⁻⁴	2572.3	8.3 ⁻⁴
VRM Class IV	1935.6	6.2 ⁻⁴	513.9	1.7 ⁻⁴	170.6	5.5 ⁻⁵
Total	2741.1	8.8 ⁻⁴	1803.8	5.8 ⁻⁴	4153.1	0.0013

Table 4.10-4. Acreage of Routes in VRM Classes by VRI Sensitivity Ratings¹

VRM Class	VRI Sensitivity Rating					
	Low	Percent of Area	Medium	Percent of Area	High	Percent of Area
Alternative 5						
VRM Class I	0.9	2.9 ⁻⁷	5.3	1.7 ⁻⁶	8.8	2.9 ⁻⁶
VRM Class II	186.9	6.0 ⁻⁵	47.5	1.5 ⁻⁵	1393.9	4.5 ⁻⁴
VRM Class III	646.3	2.1 ⁻⁴	1311.4	4.2 ⁻⁴	2683.4	8.6 ⁻⁶
VRM Class IV	1963.7	6.3 ⁻⁴	731.1	2.3 ⁻⁴	199.7	6.4 ⁻⁵
Total	2797.8	9.0 ⁻⁴	2095.3	6.8 ⁻⁴	4285.8	0.0013

¹ This is the acres of routes in VRM Class I – IV acres within each VRI Class I - IV

Sensitivity Level Rating Units (SLRU's) were updated in the DRECP LUPA and are considered when designating OHV routes as Open/Limited or Closed. All VRI Sensitivity ratings were potentially impacted the most by the OHV network designated in Alternative 3 with a total of 7,335.8 acres in areas with high sensitivity ratings, 3378.4 acres in medium sensitivity areas, and 4093.7 acres in low sensitivity areas. Comparatively, Alternative 2 has the least potential for adverse impacts with 3,169.1 acres for high, 1,663.1 acres for medium and 2,250.3 acres for low sensitivities. Alternative 5 can be considered to have an intermediate potential impact to visual resources with acres impacted falling between Alternative 2 and 3. The majority of the OHV Open/Limited route network within the WEMO Planning Area occurs within high sensitivity areas (see Figure 3.10-4). High sensitivity areas occur frequently within the 3.1 million acre planning area due to:

- Many different types of users;
- OHV use resulting in high usage in certain places such as OHV Open Use Areas;
- High public interest in the Western Mojave desert;
- Many types of adjacent land uses (authorized/residential/recreation/long-distance travel);
- A variety of special areas (Natural Areas, Wilderness Areas or Wilderness Study Areas, Wild and Scenic Rivers, Scenic Areas, Scenic Roads or Trails, and ACECs)
- Other factors such as existing land use plans, resource protection plans, research, etc.

Sensitivity Level Rating Units (SLRU's) were updated in the DRECP LUPA and the BLM considers areas with high sensitivity when designating OHV routes as Open/Limited or Closed. Areas with low and medium sensitivity tended to have fewer miles of OHV Open/Limited routes where visitation was low/moderate, in communities that had less prominent adjacent land uses and special areas, and maintenance of visual quality was only a minor/moderate public issue. Alternative 5 had approximately the same number of impacted acres to low and medium sensitivity levels as the No Action Alternative. SLRU's may have to be reassessed as the use of public lands changes over time.

Table 4.10-5. Acreage of Routes in VRM Classes by VRI Distance Zones¹

VRM Class	VRI Distance Zones					
	Foreground-Middleground (3 – 5 miles)	Percent of Area	Background (5 – 15 miles)	Percent of Area	Seldom Seen (Not seen in Foreground-middleground or background)	Percent of Area
No Action Alternative						
VRM Class I	8.8	2.8 ⁻⁶	0	0	6.3	2.0 ⁻⁶
VRM Class II	1276.8	4.1 ⁻⁴	13.9	4.5 ⁻⁶	49.2	1.6 ⁻⁵
VRM Class III	3670.7	1.1 ⁻⁴	101.9	3.3 ⁻⁵	354.2	1.1 ⁻⁴
VRM Class IV	2098.2	6.8 ⁻⁴	293.1	9.6 ⁻⁵	208.3	6.7 ⁻⁵
Total	7054.5	0.002	408.9	1.3 ⁻⁴	618	1.9 ⁻⁴
Alternative 2						
VRM Class I	8.8	2.8 ⁻⁶	0	0	6.3	2.0 ⁻⁶
VRM Class II	1072.1	3.6 ⁻⁴	8.6	2.8 ⁻⁶	38.9	1.3 ⁻⁵
VRM Class III	3320.4	0.001	88.5	2.9 ⁻⁵	313.4	1.0 ⁻⁴
VRM Class IV	1829.6	5.9 ⁻⁴	227.6	7.3 ⁻⁵	168.8	5.5 ⁻⁵
Total	6230.9	0.002	324.7	1.0 ⁻⁴	527.4	1.7 ⁻⁴
Alternative 3						
VRM Class I	9.8	3.2 ⁻⁶	0	0	6.3	2.0 ⁻⁶
VRM Class II	2588.2	8.3 ⁻⁴	22.9	7.4 ⁻⁶	68.8	2.2 ⁻⁵
VRM Class III	6551.7	0.002	132.6	4.3 ⁻⁵	550.9	1.7 ⁻⁴
VRM Class IV	4234.9	0.001	382.1	1.2 ⁻⁴	259.6	8.4 ⁻⁵
Total	13384.6	0.004	537.6	1.7 ⁻⁴	885.6	2.9 ⁻⁵
Alternative 4						
VRM Class I	8.8	2.8 ⁻⁶	0	0	6.3	2.0 ⁻⁶
VRM Class II	1562.5	5.0 ⁻⁴	17.4	5.6 ⁻⁶	59.2	1.9 ⁻⁵
VRM Class III	3946.6	0.001	102.2	3.3 ⁻⁵	374.9	1.2 ⁻⁴
VRM Class IV	2154.8	6.9 ⁻⁴	265.4	8.6 ⁻⁵	199.1	6.4 ⁻⁵
Total	7672.7	0.002	385	1.2 ⁻⁴	639.5	2.1 ⁻⁴
Alternative 5						
VRM Class I	8.7	2.8 ⁻⁶	0	0	6.3	2.0 ⁻⁶
VRM Class II	1553.2	5.0 ⁻⁴	13.5	4.4 ⁻⁶	61.6	1.9 ⁻⁵
VRM Class III	4150.3	0.001	103.5	3.3 ⁻⁵	387.2	1.2 ⁻⁴
VRM Class IV	2442.1	7.9 ⁻⁴	258.9	8.4 ⁻⁵	193.4	6.2 ⁻⁵
Total	8154.3	0.002	375.9	1.2 ⁻⁴	648.5	2.1 ⁻⁴

¹ This is the acres of routes in VRM Class I – IV acres within each VRI Class I - IV

Landscapes are subdivided into three distance zones based on relative visibility from travel routes or observation points (Manual H-8410-1). In relation to the WMRNP, these are primarily based on impacts from OHV route use on existed disturbance. Approximately 87 percent of the impacted acreage within the planning area is to foreground-middleground, 5 percent to background and 7.6 percent to seldom seen. Foreground-middleground distance zones (within 3 to 5 miles from the observer) receive the most potential impacts across all alternatives due to the WEMO planning area having many large flatter areas with mountains and ridges within a 5 mile distance. Many OHV Open/Limited routes traverse through flat areas with minimal tall vegetation or trees to obscure the observer’s viewpoint. Viewing in these landscapes allows the

observer to be able to see long distances, as shown in dark blue in Figure 3.10-5. Background and seldom seen are illustrated in decreasing shades of blue. Foreground-middleground distance zones facilitated more cross-country type OHV use, as OHV climbing can be tedious and dangerous for many users. Moreover, background and seldom seen areas are likely to receive less OHV use in general due to difficult terrain, remote locations, and legislative protections.

Alternative 3 has the highest potential to impact foreground-middleground with a total of 13,384.6 acres across all VRM classes. Comparatively, Alternative 5 has 8,154.3 acres of potential impact to foreground-middleground, which is approximately 5,230.3 acres less than Alternative 3. Alternative 5 has approximately 1,099.8 more acres of potential impacts to foreground-middleground than the No Action Alternative. Alternative 2 has the least potential impacts to foreground-middleground distances zones with 823.6 fewer acres than the No Action Alternative.

4.10.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for visual resources include but are not limited to:

- Modify access to a less impacting designation;
- Restrict stopping/parking/camping to 100 feet from the centerline of a route from 300 feet in the CDCA Plan;
- Install natural barriers and maintain or upgrade existing barriers;
- Install/utilize natural features (i.e. topography, vegetation, reduce soil disturbance, etc.) to reduce visual impact;
- Remove attractants; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

Under the No Action Alternative, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances with restoration techniques (See Appendix G), and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for new visual resource impacts, as compared to pre-2006 conditions before these limitations were enacted.

Under Alternatives 2, 3, 4, and 5, limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and further limiting stopping and parking limits would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for direct or indirect effects to visual resources. Mitigation and minimization measures that allow for revegetation also have the potential to allow enhancement of scenic quality rating units (SQRU's) (Read more about SQRU's in Appendix E.10.) Requirements for plan amendment and NEPA reviews of future major route network changes

would ensure that specific visual resource impacts are considered before authorizing new OHV Open and OHV Limited routes.

4.10.6 Residual Impacts After Implementation of Mitigation Measures

Residual effects to visual resources would continue after application of mitigation measures. Although designation of routes as transportation linear disturbances and active route rehabilitation efforts would result in gradual reduction of visual impacts, these reductions would occur over the long-term, and adverse impacts would remain in the short-term.

4.11 Special Designations and Other Inventoried Areas

4.11.1 Methodology

The 2005 WEMO EIS analyzed the impacts of the route network evaluated in that EIS with respect to existing areas with special designations, and to newly proposed special designation areas evaluated as part of the 2006 WEMO Plan. The analysis included a discussion of the effects of the proposed OHV network on vegetation, wildlife, cultural resources, and other values for which the special designation areas were established, but did not specifically evaluate the transportation network within each area. The Court's Summary Judgment and Remedy order did not specifically reach conclusions, or provide direction, regarding the sufficiency of the discussion. The Court did make a general finding that the range of route network alternatives evaluated was inadequate.

A key feature of special designation areas is that they were generally established to protect specific resource values, including wildlife, plants, UPAs, cultural resources, paleontological resources, and other resources. As a result, there is overlap between the discussion of the impacts associated with the transportation network on the specific resources, and the discussion of the impacts associated with the transportation network on the special designation area itself. In general, this chapter evaluates the scope of the route network within the specific areas, and discusses specific impacts on the area, where these are known. More detailed discussion of the impacts to the specific resources is found in the sections for those resources.

4.11.2 Impacts Common to All Alternatives

The specially designated areas are established to protect biological, cultural, scenic, and other resources, and the impact of OHV use and route designation on the management objectives of those areas is similar to that discussed for each of the specific resources. The presence and use of OHV routes and of non-mechanized and non-motorized trails are generally considered to have an adverse impact to these resources; designation of routes or trails as transportation linear disturbances, or conversion of routes to trails, is considered to be beneficial. However, the management of OHVs and designation of routes in these areas is already prescribed by legislation, policy, and the CDCA Plan, as amended; and has been previously accomplished through ACEC-specific activity plans. These designations were incorporated into the designations of the 2006 WEMO Plan. For instance, all routes in federally designated Wilderness areas were designated OHV Closed use with the designation of the areas as Wilderness by signing of the California Desert Protection Act in 1994 and the Omnibus Public Land Management Act in 2009. Therefore, none of the alternatives include the designation of

any OHV Open and OHV Limited routes within Wilderness areas. Moreover, routes were designated as OHV Open, OHV Limited and OHV Closed use in Wilderness study areas from the baseline inventory of GTLF, which existed prior to the designation of Wilderness areas in the CDPA of 1994. Wilderness study areas receive ongoing transportation management to maintain suitability for potential future Wilderness area designation. Thus, OHV Open and OHV Limited routes are not prohibited if they do not impair the values that established a specific area as a Wilderness area candidate. The BLM did not designate additional transportation linear features within WSAs and only designated from the inventory that existed at the time of the CDPA 1994. Furthermore, the BLM added a maximum of 13.6 miles of OHV Open and OHV Limited routes, primarily in Cady Mountains, which consisted of authorized routes, research and connectivity routes, all of which are in conformance with 43 CFR 1782 and BLM Manual 6330.

The designation of routes, implementation strategies, and the process for future consideration of routes within ACECs were established by the decisions in the West Mojave Plan, and these would remain the same under the No Action Alternative. Additional management parameters for ACECs and CDNCLs may be established under the other alternatives, based on the decisions of the WMRNP.

The decisions being made as part of the WMRNP would serve several purposes with respect to specially designated areas, as follows:

- The existing route designations, management prescriptions, and specific implementation strategies within the ACECs and CDNCLs would be incorporated or updated in the resulting CDCA plan amendment. Changes within ACECs and CDNCLs must conform to the goals for the adopted ACEC or CDNCL Plans.
- Changes within the Sand to Snow and Mojave Trails National Monuments must conform to the direction in each national monument's Presidential Proclamation. The Mojave Trails National Monument Proclamation has specific direction with respect to routes, including that OHV use in the monument shall be permitted only on roads existing as of February 12, 2016, and that the BLM must prepare a transportation plan that designates the roads and trails where OHV, non-motorized, and non-mechanized use will be permitted.
- Existing route designations in certain specially designated areas may be changed to conform to the overall goals and objectives selected as part of the WMRNP. For instance, under Alternative 2, the route designation process used to establish the alternative route networks generally specified designation of routes as transportation linear disturbances that intersect with Wilderness areas and in route proliferation areas within DT ACECs.
- Existing routes within WSAs may be designated as OHV Limited use on primitive trails if they were already designated OHV Open under the No Action Alternative, or the trail may be designated for non-mechanized or non-motorized use, or designated as a transportation linear disturbance. Current policy does not provide specific guidance for reconsideration of an existing disturbed route in WSA if it has been previously designated as a transportation linear disturbance. Table 4.11-1 shows the approximate OHV Open and OHV Limited mileage differences across alternatives.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. Impacts to specially designated areas were considered in the development of alternative goals and objectives, in designation of individual routes, and in defining specific implementation parameters.

Biological, cultural, and visual, and other sensitive resource impacts were considered in the development of the goals and objectives for the various alternatives. The goals and objectives for Alternative 2 focus on enhancing sensitive resource values and areas, and managing access to de-emphasize casual multiple-use OHV and mechanized touring. In contrast, the goals and objectives for Alternative 3 focus on meeting the diverse transportation, access, and recreational needs of the public, and managing access to emphasize casual multiple-use OHV and mechanized touring.

Impacts to the resources and management objectives for the specially designated areas were also considered by evaluating individual route locations with respect to identified biological, cultural, and other resources. Vegetation and wildlife impacts were considered by evaluating route locations with respect to DT ACECs (for desert tortoise), ACECs, CDNCLs, national monuments, Designated Critical Habitat, the Mohave Ground Squirrel Core Areas, nest locations (for golden eagles), wildlife corridors, and other identified habitat features. The potential for cultural resource impacts was considered by evaluating route locations with respect to resource locations, with areas that intersect or are within 50 feet, 100 feet, or 300 feet of identified resources, or within a tribal area. The potential for riparian, spring and other water impacts was considered by evaluating route locations with respect to proximity of these resources. Routes in these locations were considered for minimization and mitigation measures, including potential designation of routes as transportation linear disturbances. Many ACECs, CDNCLs, and national monuments include features that are recognized for their historic travel and use characteristics and their current recreational value given their unique assets, including scenic and geologic features and the other sensitive resource values. Some of the ACECs, CDNCLs, and national monuments include recreational assets, including campgrounds, other facilities, and maintained routes, along with OHV Open areas which were also factored into route designations.

In addition to travel in or near special designated areas, the WEMO Planning Area also contains historic and scenic trails, such as the Old Spanish Historic Trail and the Pacific Crest Trail. The Old Spanish Historic Trail within the planning area falls within developed and urbanized areas. Thus, the impacts from route designation are minimal due to the extensive disturbance that results from this type of city and community development. The Pacific Crest Trail is more likely to be impacted due to its often more remote locations. The portions of the Pacific Crest Trail that are within Ridgecrest (No portions in the Barstow, Needles or Palm Springs Field Offices) have the potential to be impacted in greater magnitude than the Old Spanish Historic Trail. However, the decision-making process has resulted in all portions of the trail falling within the WEMO Planning Area being designated as non-mechanized (more restrictive than non-motorized). The BLM has also avoided designating OHV Open and OHV Limited routes within the vicinity of the trail. There are OHV Open and OHV Limited routes leading to the trail at approximately 16 points, with approximately 10 crossover points within the Jawbone subregion and two crossover

points in the Middle Knob subregion. Jawbone is the only subregion which has potential adverse impacts from OHV use to the Pacific Crest Trail, and this was considered in the route designation process for the action alternatives. Three other subregions, Middle Knob, Victorville and Sand to Snow National Monument coincide with the Pacific Crest Trail, however, none of these subregions have any OHV Open or OHV Limited routes within several miles of the trail. These OHV Open and OHV Limited routes have both beneficial and adverse impacts to this scenic trail. The motorized routes are utilized for access and use of the historic and scenic trails, for maintenance of the trail, and research and analysis, all of which are beneficial results from retaining some OHV Open route designations. OHV travel also disturbs the natural settings and user experience of the area near or on the Pacific Crest Scenic and Old Spanish Historic Trails. Some of these impacts could potentially include reducing wildlife and plant communities, noise increases, and recreational use conflicts.

In addition, the WMRNP alternatives include consideration of stopping and parking distances from routes in order to minimize disturbance of resources in those areas. Therefore, minimization of biological and cultural resource impacts was a factor both in development of the alternative route networks, and in the specific limitations placed on routes in those networks.

Livestock grazing has historically been present in the Ord-Rodman DT ACEC for at least 50 years, and was present at the time of ACEC designation in 2006. At the time of designation, grazing use did not adversely affect the basis for which this area met relevance and importance criteria for ACEC designation, and a strategy to manage the presence of livestock for the RFF has been included in the WEMO Plan as a component of the ACEC Plan. In addition to the Ord-Rodman DT ACECs, there are several other ACECs, both cultural and biological co-located within West Mojave grazing allotments. In most cases, relevant and important resources have been protected from the impacts of grazing in key locations (e.g., fencing, exclosures, cattle guards, etc.) consistent with the ACEC Management Plans for each area.

The direct impacts to designated Wilderness areas within West Mojave grazing allotments from grazing would be the same as what occurred prior to the passage of the CDPA. Based on low livestock numbers and limited seasonal use due to the lack of water the effects of grazing are not considered substantial enough to adversely affect the Wilderness character of the designated lands.

The reduction in the utilization thresholds on perennial forage to 25 percent during the growing season would be beneficial to the naturalness of the affected Wilderness areas by protecting the natural composition of vegetation communities. Due to the lack of developed or perennial water sources these Wilderness areas are primarily grazed in the winter/spring and typically with light stocking rates. There are currently very few range improvements in designated Wilderness; however, the development of future range improvements or the hauling of water in close proximity to Wilderness boundaries would increase the number and duration of livestock grazing in Wilderness areas. Since range improvements are driven by available water sources, it is reasonably foreseeable that at least one Wilderness area may be impacted due to the location of suitable perennial water adjacent to its boundary. This may result in a nominal increased impact to naturalness and the opportunity for solitude when cattle are present. Impacts to Wilderness from the development of a new range improvement would be documented and analyzed in the project specific EA that would be prepared prior to the development of any proposed project.

In the Ord Mountain Allotment, the stipulation that requires a threshold of 230 lbs/acre ephemeral forage production or greater to authorize grazing in portions of the DT ACEC would also be beneficial to the naturalness of the portions of the affected designated Wilderness that overlap DT ACECs. The threshold would help protect native vegetation and consequently native wildlife by helping to prevent excessive use in dry years. During years when the threshold is not met, cattle would be substantially removed from the entire Newberry Mountains Wilderness areas from March 15th to June 15th. Wilderness visitors would have greater opportunity to experience an area without evidence of man during this time period.

For allotments that have been relinquished, the Wilderness areas would benefit due to the increases in naturalness discussed above. The naturalness of the areas would no longer be impacted by the presence of a non-native species (cattle). The opportunity to experience an area without evidence of man would not be impacted by the presence of cattle. The Wilderness character and the opportunity for solitude would not be affected by the sights and sounds associated with range improvement maintenance including occasional motorized equipment use in Wilderness. In addition, there would not be any future potential to graze cattle in the area and range improvements could be removed to improve the areas' naturalness and provide a greater opportunity to experience an area without evidence of man. These beneficial impacts are not considered substantial, because the impacts of grazing did not substantially adversely affect the Wilderness qualities at the time of area designations.

4.11.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to special designation and other inventoried areas from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Because the proposed "C" routes northeast of the Spangler Hills Open Area are not associated with any special designations, the seasonal restrictions under Alternative 2 would not result in any impacts to special designation areas.

Under Alternative 3, the designation of two competitive event corridors that are adjacent to or overlap the Ord-Rodman DT ACEC could result in additional impacts to the DT ACEC based on increased levels of use in the DT ACEC. These impacts include associated increased levels of dust and erosion and increased potential for DT strikes. Competitive events in the area would include permit-specific measures associated with the SRP, as well as measures identified by the USFWS.

The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area under Alternatives 4 and 5 would be made with appropriate mitigation measures to protect special designation areas.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds are not associated with special designation areas. As a result, OHV use of vehicles on the lakebeds is not expected to impact special designation areas under any alternative, and this decision would not have any effect on special designation areas. Because

Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes due to its closure under Alternative 2, and to its designation as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit” under Alternatives 3, 4, and 5, would be low. As a result, Alternatives 2, 3, 4, and 5 are not expected to have an indirect, adverse impact on special designation areas by increasing the recreational use of routes in other areas.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

The West Rand ACEC and part of the Fremont-Kramer DT ACEC fall within the boundaries of the Rand Mountain-Fremont Valley Management Area.

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. But requiring or not requiring all vehicle operators to complete an educational orientation program before they can purchase a permit and operate a vehicle within the area does not change the proposed designated route system. Therefore this action would not have any direct impact on these designation boundaries.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Not requiring a visitor to complete an educational orientation program before visiting an area may result in an indirect impact if the visitor is unaware of the special resources within the particular area. These impacts maybe overcome through other educational mediums and materials such as kiosks and brochures.

PA VI: Modify Stopping and Parking Limitations

Alternative 2 would limit stopping and parking to previously disturbed areas within 50 feet of the route centerline, both inside and outside of DT ACECs. This would be a reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet. Camping would be allowed adjacent to designated routes in previously disturbed areas, not to exceed 50 feet from the centerline, throughout the WEMO Planning Area. This reduction from the limits in the No Action Alternative would result in allowing previously disturbed areas to become re-vegetated over time, thus gradually reducing vegetation, wildlife, and other impacts in those areas. This decision would also reduce the potential for OHV use to impact resources in those areas. The effect of these actions would be a net beneficial impact on Special Designation areas.

Alternative 3 would limit camping to previously disturbed areas within 50 feet of the route centerline inside DT ACECs, while stopping and parking would be limited to within 50 feet of the centerline within DT ACECs. Stopping, parking, and camping would be limited to 100 feet from the route centerline outside of DT ACECs. This would be a reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet. This would be a reduction from the limits in the No Action Alternative, but would still allow a larger area of disturbance than Alternative 2 (100 feet in Alternative 3 versus 50 feet in Alternative 2). This reduction would result in allowing previously disturbed areas to become re-vegetated over time, thus gradually reducing vegetation, wildlife, and other impacts in those areas. This decision would also reduce the potential for OHV use to impact resources in those areas. The effect of these actions would be a net beneficial impact on Special Designation areas.

Alternatives 4 and 5 would limit camping to previously disturbed areas within 50 feet of the route centerline inside DT ACECs, while stopping and parking would be limited to within 50 feet of the centerline within DT ACECs. Stopping, parking, and camping would be limited to 100 feet from the route centerline outside of DT ACECs. This would be a reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet. This reduction would result in allowing previously disturbed areas to become re-vegetated over time, thus gradually reducing vegetation, wildlife, and other impacts in those areas. This decision would also reduce the potential for OHV use to impact resources in those areas. The effect of these actions would be a net beneficial impact on Special Designation areas.

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Livestock grazing has historically been present in the Ord-Rodman DT ACECs for at least 50 years, and was present at the time of ACEC designation in 2006. At the time of designation, grazing use did not adversely affect the basis for which this area met relevance and importance criteria for ACEC designation, and a strategy to manage the presence of livestock for the RFF has been included in the WEMO Plan as a component of the ACEC Plan. In addition to the Ord-Rodman DT ACECs there are several other ACECs, both cultural and biological co-located within West Mojave grazing allotments. In most cases, relevant and important resources have been protected from the impacts of grazing in key locations (e.g., fencing, exclosures, cattle guards, etc.) consistent with the ACEC Management Plans for each area.

Under the No Action Alternative and Alternatives 3, 4, and 5, the direct impacts to designated Wilderness areas within West Mojave grazing allotments from grazing would be the same as what occurred prior to the passage of the CDPA. Based on low livestock numbers and limited seasonal use due to the lack of water the effects of grazing are not considered substantial enough to adversely affect the Wilderness character of the designated lands.

The reduction in the utilization thresholds on perennial forage to 25 percent during the growing season would be beneficial to the naturalness of the affected Wilderness areas by protecting the natural composition of vegetation communities. Due to the lack of developed or perennial water sources these Wilderness areas are primarily grazed in the winter/spring and typically with light stocking rates. There are currently very few range improvements in designated Wilderness; however, the development of future range improvements or the hauling of water in close proximity to Wilderness boundaries would increase the number and duration of livestock grazing in Wilderness areas. Since range improvements are driven by available water sources, it is reasonably foreseeable that at least one Wilderness area may be impacted due to the location of suitable perennial water adjacent to its boundary. This may result in a nominal increased impact to naturalness and the opportunity for solitude when cattle are present. Impacts to Wilderness from the development of a new range improvement would be documented and analyzed in the project specific EA that would be prepared prior to the development of any proposed project.

In the Ord Mountain Allotment the stipulation that requires a threshold of 230 lbs/acre ephemeral forage production or greater to authorize grazing in portions of the DT ACEC would also be beneficial to the naturalness of the portions of the affected designated Wilderness that overlap DT ACECs. The threshold would help protect native vegetation and consequently native wildlife by helping to prevent excessive use in dry years. During years when the threshold is not met, cattle would be substantially removed from the entire Newberry Mountains Wilderness

areas from March 15th to June 15th. Wilderness visitors would have greater opportunity to experience an area without evidence of man during this time period.

For allotments that have been relinquished, the Wilderness areas would benefit due to the increases in naturalness discussed above. The naturalness of the areas would no longer be impacted by the presence of a non-native species (cattle). The opportunity to experience an area without evidence of man would not be impacted by the presence of cattle. The Wilderness character and the opportunity for solitude would not be affected by the sights and sounds associated with range improvement maintenance including occasional motorized equipment use in Wilderness. In addition, there would not be any future potential to graze cattle in the area and range improvements could be removed to improve the areas' naturalness and provide a greater opportunity to experience an area without evidence of man. These beneficial impacts are not considered substantial, because the impacts of grazing did not substantially adversely affect the Wilderness qualities at the time of area designations.

Under Alternative 2, livestock grazing would be discontinued in most of the Ord Mountain Allotment which would include the Newberry Mountains and Rodman Mountain Wilderness Areas. Because livestock grazing would no longer occur, the Wilderness area would benefit due to the increases in naturalness. Wilderness visitors would have greater opportunity to experience an area without evidence of man during this time period. The Wilderness character and the opportunity for solitude would not be affected by the sights and sounds associated with range improvement maintenance including occasional motorized equipment use in Wilderness. In addition, there would not be any future potential to graze cattle in the area and range improvements could be removed to improve the areas' naturalness and provide a greater opportunity to experience an area without evidence of man. These beneficial impacts are not considered substantial, because the impacts of grazing did not substantially adversely affect the Wilderness qualities at the time of area designations.

4.11.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that OHVs can have adverse impacts on biological, cultural, and scenic resources for which the special designation areas were established. The impacts to the specific resources would be the same as discussed in the subsections for those resources. By impacting the resources themselves, OHV use would potentially conflict with the management objectives established for these areas, including objectives established in activity plans, guidance, or legislation. The level of impact would generally be proportional to the mileage of OHV Open and OHV Limited routes within each area. Impacts associated with the designation of routes as transportation linear disturbances within special designation areas would generally be beneficial with respect to the biological, cultural, paleontological, and visual values for which those areas were established. Similarly, the designation of routes as transportation linear disturbances near and leading to ACECs, CDNCLs, Wilderness areas, Wilderness study areas, lands managed for wilderness characteristics, and national monuments would reduce the potential for incursions of OHVs into those areas, and would thus be a beneficial impact to the values for which those areas were established. However, the designation of routes as transportation linear disturbances within, near, or leading to special designation areas and other inventoried areas could also result in limiting public access to recreation in those areas, including the values (visual resources, wildlife, etc.) which attract

recreational users. The designation of routes as transportation linear disturbances may result in an adverse impact to the experience for those users, if no other means of access are provided.

The acreage and mileage of routes associated with the different types of Special Designation areas and lands managed for wilderness characteristics under each alternative is presented in Table 4.11-1. The acreage and mileage of routes within specific ACECs and CDNCLs for the No Action Alternative and Alternatives 2, 3, 4, and 5 is presented in Tables 4.11-2, 4.11-3, 4.11-4, 4.11-5, and 4.11-6, respectively.

**Table 4.11-1. Acreage and Mileage of Routes in Special Designation and other Inventoried Areas¹
 – All Alternatives**

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
No Action Alternative			
Areas of Critical Environmental Concern	4666.3	6784.0	121648.0
California Desert National Conservation Lands	1836.4	2349.1	23665.4
DT ACECs	2048.9	2631.0	25184.5
Wilderness Areas	11.60	405.3	0
Wilderness Study Areas	70.8	112.9	4864.1
Lands Managed for Wilderness Characteristics	149.0	99.6	3403.6
National Monuments	362.9	266.3	11466.6
Alternative 2			
Areas of Critical Environmental Concern	3933.0	7516.7	45912.4
California Desert National Conservation Lands	1636.0	2549.1	19170.0
DT ACECs	1713.2	2966.3	20051.2
Wilderness Areas	0	405.3	0
Wilderness Study Areas	44.0	139.7	536.6
Lands Managed for Wilderness Characteristics	138.1	110.5	1541.7
National Monuments	351.4	277.8	4158.5
Alternative 3			
Areas of Critical Environmental Concern	7447.8	4001.9	109179.6
California Desert National Conservation Lands	2880.3	1304.9	33554.5
DT ACECs	2813.9	1865.6	32466.5
Wilderness Areas	0	405.3	0
Wilderness Study Areas	70.6	113.5	1639.7

**Table 4.11-1. Acreage and Mileage of Routes in Special Designation and other Inventoried Areas¹
 – All Alternatives**

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
Lands Managed for Wilderness Characteristics	207.8	40.8	2734.5
National Monuments	478.5	150.7	7260.0
Alternative 4			
Areas of Critical Environmental Concern	4975.0	6474.9	73756.6
California Desert National Conservation Lands	1958.0	2227.2	23232.7
DT ACECs	2077.9	2601.6	24411.7
Wilderness Areas	0	405.3	0
Wilderness Study Areas	78.9	104.8	1831.7
Lands Managed for Wilderness Characteristics	138.9	109.7	1858.3
National Monuments	401.2	228.0	6521.0
Alternative 5			
Areas of Critical Environmental Concern	5059.6	6390.6	75131.2
California Desert National Conservation Lands	2009.2	2176.2	23792.5
DT ACECs	2071.1	2608.3	24310.9
Wilderness Areas	0	405.3	0
Wilderness Study Areas	84.4	99.4	1969.7
Lands Managed for Wilderness Characteristics	135.6	113.0	1818.3
National Monuments	412.5	216.9	6730.2

1 – Because many special designation areas overlap with others, an individual route may be included within the mileages and acreages in this table multiple times. Therefore, the total mileage of open routes and the total acreage of stopping, parking, and camping areas within the WEMO Planning Area cannot be derived from this table.

2 – SPC acreage calculated using standard widths outside DT ACECs and inside non-specified ACECs, but the specified distances for ACECs where limits are specified.

Table 4.11-2. No Action Alternative – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
ACECs			
Afton Canyon	13.1	29.0	324.4
Amboy Crater	1.1	0.5	12.9

Table 4.11-2. No Action Alternative – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
Ayres Rock	4.1	1.7	66.8
Barstow Woolly Sunflower	48.5	56.7	2947.6
Bedrock Spring	1.8	5.2	57.1
Bendires Thrasher Conservation Area	20.1	26.5	1380.5
Big Morongo Canyon	21.2	19.0	277.9
Big Rock Creek Wash	0.6	0.0	0.0
Black Mountain	85.7	54.1	1845.2
Brisbane Valley Monkeyflower	29.3	63.6	1951.9
Bristol	156.3	65.3	3708.6
Cady Mountains WSA	50.0	82.9	3427.3
Calico Early Man Site	5.1	2.7	40.8
Carbonate Endemic Plants Research Natural Area	18.8	9.8	283.3
Coolgardie Mesa	24.4	70.3	459.1
Cronese Basin	10.5	12.2	698.2
Daggett Ridge Monkeyflower	52.5	52.4	674.8
Desert Tortoise Research Natural Area	3.0	128.9	145.4
Eagles Flyway	33.1	5.0	404.4
El Paso to Golden	247.0	318.3	15798.9
Fossil Falls	4.9	3.4	61.1
Fremont-Kramer	812.7	1188.5	10156.5
Granite Mountain Corridor	75.1	125.3	4359.2
Great Falls Basin	4.6	11.6	180.7
Harper Dry Lake	0.0	1.7	0.0
Jawbone/Butterbredt	274.7	1268.3	8700.9
Juniper Flats	10.6	12.5	134.9
Last Chance Canyon	23.5	55.2	383.3
Manix	9.8	4.1	125.6
Mesquite Hills/Crucero	0.2	1.0	2.1
Middle Knob	24.5	39.2	299.8
Mojave Fishhook Cactus	1.1	2.5	106.4
Mojave Fringe-Toed Lizard Conservation Area	18.4	31.9	511.2
Mojave Ground Squirrel	524.3	673.9	26295.6
Northern Lucerne Wildlife Linkage	64.4	225.1	4132.8
Olancha Greasewood	22.6	48.1	291.6
Old Woman Springs Wildlife Linkage	179.3	196.2	3019.2
Ord-Rodman	310.6	518.2	3865.8
Owens Lake	0.0	0.0	6.6

Table 4.11-2. No Action Alternative – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
Panamints and Argus	87.9	80.2	1064.9
Parish's Phacelia Conservation Area	0.8	2.8	8.9
Pinto Mountains	136.8	74.7	1714.7
Pipes Canyon	12.9	31.9	499.0
Pisgah Crater	113.8	45.6	1916.0
Rainbow Basin/Owl Canyon	5.6	15.3	65.8
Red Mountain Spring	1.2	3.7	14.9
Rodman Mountains Cultural Area	3.2	12.7	37.8
Rose Springs	4.8	3.0	60.3
Sand Canyon	3.3	5.0	39.2
Santos Manuel	59.3	57.9	3669.4
Short Canyon	1.2	1.1	28.7
Sierra Canyons	138.7	58.6	1687.6
Soda Mountains Expansion	49.4	14.3	3005.4
Soda Mountains WSA	5.3	1.6	500.3
Soggy Dry Lake Creosote Rings	0.0	4.4	23.0
Steam Well	0.0	0.0	0.0
Superior-Cronese	785.7	721.4	9302.0
Trona Pinnacles	12.2	15.3	155.1
Upper Johnson Valley Yucca Rings	0.0	0.0	0.0
Western Rand Mountains	57.4	222.5	715.8
West Paradise	0.0	0.7	0.0
Whitewater Canyon	0.0	1.1	0.0
DT ACECs			
Fremont-Kramer	812.7	1188.5	10156.5
Ord-Rodman	310.6	518.2	3865.8
Pinto Mountains	136.8	74.7	1714.7
Superior-Cronese	785.7	721.4	9302.0
Desert Tortoise Research Natural Area	3.0	128.9	145.4
CDNCLs			
Basin and Range	338.9	301.9	4423.7
Coachella Valley	< 0.1	< 0.1	3.4
Mojave and Silurian Valley	192.9	201.5	2569.3
Pinto, Lucerne Valley and Eastern Slopes	617.9	729.1	7713.7
South Mojave-Amboy	252.2	112.4	3328.2
Western Desert and Eastern Slopes	434.4	1004.1	5627.0

Table 4.11-2. No Action Alternative – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
National Monuments			
Mojave Trails National Monument	320.7	222.9	10490.4
Sand to Snow National Monument	42.2	43.4	976.1

1 – Because many special designation areas overlap with others, an individual route may be included within the mileages and acreages in this table multiple times. Therefore, the total mileage of open routes and the total acreage of stopping, parking, and camping areas within the WEMO Planning Area cannot be derived from this table.

2 – SPC acreage calculated using standard widths outside DT ACECs and inside non-specified ACECs, but the specified distances for ACECs where specified.

Table 4.11-3. Alternative 2 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
ACECs			
Afton Canyon	10.0	32.2	117.8
Amboy Crater	1.6	0.0	18.5
Ayres Rock	4.5	1.4	27.4
Barstow Woolly Sunflower	21.6	83.6	245.1
Bedrock Spring	1.8	5.2	21.6
Bendires Thrasher Conservation Area	17.3	29.3	207.6
Big Morongo Canyon	30.6	9.6	344.2
Big Rock Creek Wash	0.0	0.6	0.0
Black Mountain	61.7	78.1	706.5
Brisbane Valley Monkeyflower	27.3	65.6	322.1
Bristol	144.4	77.2	1694.6
Cady Mountains WSA	37.9	95.0	448.3
Calico Early Man Site	5.1	2.7	39.8
Carbonate Endemic Plants Research Natural Area	18.4	10.1	232.9
Coolgardie Mesa	16.1	78.5	190.3
Cronese Basin	2.6	20.2	30.5
Daggett Ridge Monkeyflower	41.5	63.3	482.0
Desert Tortoise Research Natural Area	3.9	127.5	46.1
Eagles Flyway	11.2	27.0	112.1
El Paso to Golden	214.6	350.7	2544.2
Fossil Falls	5.2	3.1	62.0
Fremont-Kramer	648.5	1352.2	7612.7
Granite Mountain Corridor	69.1	131.3	817.5

Table 4.11-3. Alternative 2 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping² (Acreage)
Great Falls Basin	4.3	11.9	61.2
Harper Dry Lake	0.4	1.3	4.8
Jawbone/Butterbreedt	242.3	1300.4	2862.4
Juniper Flats	11.5	11.7	136.3
Last Chance Canyon	14.2	64.4	170.4
Manix	10.9	3.1	129.8
Mesquite Hills/Crucero	0.4	0.8	4.3
Middle Knob	28.8	35.0	341.1
Mojave Fishhook Cactus	1.1	2.5	13.2
Mojave Fringe-Toed Lizard Conservation Area	19.8	30.5	240.3
Mojave Ground Squirrel	375.2	822.8	4349.6
Northern Lucerne Wildlife Linkage	39.6	249.9	450.2
Olancha Greasewood	26.8	44.0	323.4
Old Woman Springs Wildlife Linkage	195.2	180.2	2285.5
Ord-Rodman	258.7	570.1	3034.8
Owens Lake	0.0	0.0	0.3
Panamints and Argus	48.6	119.5	576.2
Parish's Phacelia Conservation Area	0.6	3.0	7.1
Pinto Mountains	144.3	67.0	1718.6
Pipes Canyon	19.9	24.7	222.9
Pisgah Crater	109.9	49.6	1274.4
Rainbow Basin/Owl Canyon	5.1	15.8	59.8
Red Mountain Spring	0.0	5.0	0.2
Rodman Mountains Cultural Area	2.5	13.4	29.6
Rose Springs	4.8	3.0	43.4
Sand Canyon	3.3	5.0	39.2
Santos Manuel	56.3	61.0	625.7
Short Canyon	0.4	1.9	4.8
Sierra Canyons	121.7	75.6	1348.7
Soda Mountains Expansion	50.7	13.1	602.9
Soda Mountains WSA	2.2	4.7	27.6
Soggy Dry Lake Creosote Rings	0.0	4.4	2.3
Steam Well	0.0	0.0	0.0
Superior-Cronese	657.7	849.4	7639.1
Trona Pinnacles	7.0	20.4	83.8
Upper Johnson Valley Yucca Rings	0.0	0.0	0.0
Western Rand Mountains	73.0	206.9	860.7

Table 4.11-3. Alternative 2 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
West Paradise	0.0	0.7	0.0
Whitewater Canyon	1.1	0.0	13.9
DT ACECs			
Fremont-Kramer	812.7	1188.5	10156.5
Ord-Rodman	310.6	518.2	3865.8
Pinto Mountains	136.8	74.7	1714.7
Superior-Cronese	785.7	721.4	9302.0
Desert Tortoise Research Natural Area	3.0	128.9	145.4
CDNCLs			
Basin and Range	338.9	301.9	4423.7
Coachella Valley	< 0.1	< 0.1	3.4
Mojave and Silurian Valley	192.9	201.5	2569.3
Pinto, Lucerne Valley and Eastern Slopes	617.9	729.1	7713.7
South Mojave-Amboy	252.2	112.4	3328.2
Western Desert and Eastern Slopes	434.4	1004.1	5627.0
National Monuments			
Mojave Trails National Monument	320.7	222.9	10490.4
Sand to Snow National Monument	42.2	43.4	976.1

1 – Because many special designation areas overlap with others, an individual route may be included within the mileages and acreages in this table multiple times. Therefore, the total mileage of open routes and the total acreage of stopping, parking, and camping areas within the WEMO Planning Area cannot be derived from this table.

2 – SPC acreage calculated using standard widths outside DT ACECs and inside non-specified ACECs, but the specified distances for ACECs where specified.

Table 4.11-4. Alternative 3 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
ACECs			
Afton Canyon	17.9	24.2	211.6
Amboy Crater	1.6	0.0	18.5
Ayres Rock	4.5	1.3	40.1
Barstow Woolly Sunflower	7.6	97.6	166.4
Bedrock Spring	3.7	3.3	51.4
Bendires Thrasher Conservation Area	17.0	29.5	403.2
Big Morongo Canyon	29.8	10.4	335.6
Big Rock Creek Wash	0.6	0.0	13.0

Table 4.11-4. Alternative 3 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
Black Mountain	82.5	57.3	1085.5
Brisbane Valley Monkeyflower	28.4	64.5	657.7
Bristol	211.6	10.0	2937.1
Cady Mountains WSA	54.1	78.8	1242.5
Calico Early Man Site	5.2	2.6	41.1
Carbonate Endemic Plants Research Natural Area	18.4	10.1	237.9
Coolgardie Mesa	24.0	70.6	312.4
Cronese Basin	9.5	13.2	225.5
Daggett Ridge Monkeyflower	61.9	42.9	721.6
Desert Tortoise Research Natural Area	4.1	127.4	67.1
Eagles Flyway	29.9	8.2	330.1
El Paso to Golden	531.7	33.6	11393.9
Fossil Falls	8.3	0.0	95.9
Fremont-Kramer	1133.0	867.7	13086.5
Granite Mountain Corridor	129.0	71.4	2590.6
Great Falls Basin	7.3	8.9	114.9
Harper Dry Lake	0.4	1.3	9.2
Jawbone/Butterbreddt	859.3	683.4	14252.0
Juniper Flats	11.6	11.5	137.8
Last Chance Canyon	44.1	34.6	509.6
Manix	14.0	0.0	161.3
Mesquite Hills/Crucero	1.1	0.1	11.9
Middle Knob	57.4	6.4	668.9
Mojave Fishhook Cactus	1.2	2.4	28.3
Mojave Fringe-Toed Lizard Conservation Area	42.9	7.4	713.2
Mojave Ground Squirrel	957.3	240.6	18052.4
Northern Lucerne Wildlife Linkage	67.7	221.8	1414.9
Olancha Greasewood	67.0	3.8	792.9
Old Woman Springs Wildlife Linkage	368.4	7.1	4804.1
Ord-Rodman	427.6	401.4	4994.8
Owens Lake	0.0	0.0	1.7
Panamints and Argus	163.7	4.4	1893.1
Parish's Phacelia Conservation Area	0.6	3.0	7.1
Pinto Mountains	204.9	6.4	2401.5
Pipes Canyon	43.3	1.4	700.6
Pisgah Crater	153.1	6.4	1922.0
Rainbow Basin/Owl Canyon	5.2	15.7	60.8

Table 4.11-4. Alternative 3 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
Red Mountain Spring	1.2	3.7	14.9
Rodman Mountains Cultural Area	3.2	12.7	37.9
Rose Springs	7.4	0.4	74.1
Sand Canyon	3.7	4.7	42.2
Santos Manuel	112.4	4.9	2305.7
Short Canyon	0.9	1.3	11.8
Sierra Canyons	187.4	10.0	2085.5
Soda Mountains Expansion	55.4	8.4	1272.3
Soda Mountains WSA	5.4	1.5	142.5
Soggy Dry Lake Creosote Rings	4.4	0.0	47.1
Steam Well	0.0	0.0	0.0
Superior-Cronese	1044.4	462.7	11916.5
Trona Pinnacles	22.3	5.1	258.8
Upper Johnson Valley Yucca Rings	0.0	0.0	0.0
Western Rand Mountains	86.7	193.2	1023.6
West Paradise	0.0	0.7	0.0
Whitewater Canyon	1.1	0.0	27.8
DT ACECs			
Fremont-Kramer	1133.0	867.7	13086.5
Ord-Rodman	427.6	401.4	4994.8
Pinto Mountains	204.9	6.4	2401.5
Superior-Cronese	1044.4	462.7	11916.5
Desert Tortoise Research Natural Area	4.1	127.4	67.1
CDNCLs			
Basin and Range	602.9	37.9	7052.7
Coachella Valley	< 0.1	0.0	0.9
Mojave and Silurian Valley	224.7	169.7	2632.8
Pinto, Lucerne Valley and Eastern Slopes	919.1	427.9	10696.8
South Mojave-Amboy	347.9	16.7	4098.4
Western Desert and Eastern Slopes	785.9	652.7	9072.9
National Monuments			
Mojave Trails National Monument	407.4	136.3	6355.0
Sand to Snow National Monument	71.1	14.4	905.0

1 – Because many special designation areas overlap with others, an individual route may be included within the mileages and acreages in this table multiple times. Therefore, the total mileage of open routes and the total acreage of stopping, parking, and camping areas within the WEMO Planning Area cannot be derived from this table.

2 – SPC acreage calculated using standard widths outside DT ACECs and inside non-specified ACECs, but the specified distances for ACECs where specified.

Table 4.11-5. Alternative 4 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
ACECs			
Afton Canyon	19.6	22.5	268.6
Amboy Crater	1.6	0.0	18.5
Ayres Rock	4.1	1.7	33.5
Barstow Woolly Sunflower	48.4	56.8	1063.8
Bedrock Spring	1.8	5.2	27.7
Bendires Thrasher Conservation Area	19.8	26.8	468.9
Big Morongo Canyon	22.2	18.0	255.9
Big Rock Creek Wash	0.0	0.6	0.0
Black Mountain	82.4	57.4	1083.5
Brisbane Valley Monkeyflower	28.6	64.3	670.3
Bristol	151.0	70.6	2177.1
Cady Mountains WSA	68.9	64.0	1598.8
Calico Early Man Site	5.1	2.7	40.0
Carbonate Endemic Plants Research Natural Area	11.2	17.3	156.3
Coolgardie Mesa	25.5	69.2	329.6
Cronese Basin	3.4	19.4	73.9
Daggett Ridge Monkeyflower	52.4	52.5	629.3
Desert Tortoise Research Natural Area	4.7	126.7	78.1
Eagles Flyway	33.1	5.0	366.7
El Paso to Golden	284.2	281.1	6502.9
Fossil Falls	4.3	4.0	51.9
Fremont-Kramer	828.9	1171.8	9774.1
Granite Mountain Corridor	94.7	105.8	2046.4
Great Falls Basin	4.4	11.9	74.2
Harper Dry Lake	0.4	1.3	9.2
Jawbone/Butterbreedt	409.4	1133.6	6622.3
Juniper Flats	14.6	8.6	172.4
Last Chance Canyon	24.9	53.8	305.6
Manix	8.1	5.9	95.1
Mesquite Hills/Crucero	0.4	0.8	4.3
Middle Knob	35.3	28.5	417.4
Mojave Fishhook Cactus	1.1	2.5	29.5
Mojave Fringe-Toed Lizard Conservation Area	21.9	28.4	351.9
Mojave Ground Squirrel	564.6	633.3	11227.8
Northern Lucerne Wildlife Linkage	55.4	234.1	1261.9
Olancha Greasewood	41.6	29.1	498.6

Table 4.11-5. Alternative 4 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
Old Woman Springs Wildlife Linkage	170.3	205.2	2163.7
Ord-Rodman	304.9	524.0	3620.1
Owens Lake	0.0	0.0	0.9
Panamints and Argus	107.4	60.7	1269.3
Parish's Phacelia Conservation Area	3.1	0.5	36.5
Pinto Mountains	137.4	73.9	1647.1
Pipes Canyon	17.4	27.1	277.0
Pisgah Crater	118.4	41.0	1535.2
Rainbow Basin/Owl Canyon	5.1	15.8	59.9
Red Mountain Spring	1.4	3.6	16.6
Rodman Mountains Cultural Area	2.5	13.4	29.6
Rose Springs	4.8	3.0	43.5
Sand Canyon	3.3	5.0	39.6
Santos Manuel	59.9	57.9	1294.1
Short Canyon	1.0	1.3	13.1
Sierra Canyons	130.0	67.3	1467.7
Soda Mountains Expansion	49.9	13.8	1163.3
Soda Mountains WSA	2.8	4.1	77.7
Soggy Dry Lake Creosote Rings	0.0	4.4	6.5
Steam Well	0.0	0.0	0.0
Superior-Cronese	802.0	705.2	9292.4
Trona Pinnacles	13.2	14.3	156.4
Upper Johnson Valley Yucca Rings	0.0	0.0	0.0
Western Rand Mountains	61.9	218.0	734.7
West Paradise	0.0	0.7	0.0
Whitewater Canyon	1.1	0.0	27.8
DT ACECs			
Fremont-Kramer	828.9	1171.8	9774.1
Ord-Rodman	304.9	524.0	3620.1
Pinto Mountains	137.4	73.9	1647.1
Superior-Cronese	802.0	705.2	9292.4
Desert Tortoise Research Natural Area	4.7	126.7	78.1
CDNCLs			
Basin and Range	384.8	256.0	4593.5
Coachella Valley	< 0.1	< 0.1	0.5
Mojave and Silurian Valley	205.0	189.4	2431.4
Pinto, Lucerne Valley and Eastern Slopes	604.2	742.7	7179.5

Table 4.11-5. Alternative 4 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
South Mojave-Amboy	250.9	113.7	2997.8
Western Desert and Eastern Slopes	513.2	925.4	6030.2
National Monuments			
Mojave Trails National Monument	352.4	191.2	5870.0
Sand to Snow National Monument	48.8	36.8	651.0

1 – Because many special designation areas overlap with others, an individual route may be included within the mileages and acreages in this table multiple times. Therefore, the total mileage of open routes and the total acreage of stopping, parking, and camping areas within the WEMO Planning Area cannot be derived from this table.

2 – SPC acreage calculated using standard widths outside DT ACECs and inside non-specified ACECs, but the specified distances for ACECs where specified.

Table 4.11-6. Alternative 5 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
ACECs			
Afton Canyon	20.0	22.2	272.4
Amboy Crater	1.6	0.0	18.5
Ayres Rock	4.5	1.3	39.7
Barstow Woolly Sunflower	48.9	56.3	1057.8
Bedrock Spring	1.8	5.2	27.7
Bendires Thrasher Conservation Area	19.8	26.8	468.9
Big Morongo Canyon	26.0	14.2	298.4
Big Rock Creek Wash	0.2	0.4	4.8
Black Mountain	81.1	58.6	1072.4
Brisbane Valley Monkeyflower	28.7	64.2	672.9
Bristol	153.0	68.7	2185.0
Cady Mountains WSA	74.6	58.3	1744.1
Calico Early Man Site	5.1	2.7	40.0
Carbonate Endemic Plants Research Natural Area	12.0	16.5	164.6
Coolgardie Mesa	25.5	69.2	329.6
Cronese Basin	3.1	19.7	67.5
Daggett Ridge Monkeyflower	57.0	47.8	673.0
Desert Tortoise Research Natural Area	4.8	126.7	80.3
Eagles Flyway	33.1	5.0	366.8
El Paso to Golden	283.4	281.9	6479.8
Fossil Falls	5.0	3.3	60.1

Table 4.11-6. Alternative 5 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping² (Acreage)
Fremont-Kramer	812.8	1187.8	9591.3
Granite Mountain Corridor	96.2	104.3	2058.6
Great Falls Basin	4.1	12.1	72.1
Harper Dry Lake	0.4	1.3	9.2
Jawbone/Butterbreddt	391.7	1151.0	6389.2
Juniper Flats	15.4	7.8	181.2
Last Chance Canyon	23.5	55.2	292.3
Manix	8.3	5.6	97.6
Mesquite Hills/Crucero	0.4	0.8	4.3
Middle Knob	35.2	28.6	416.5
Mojave Fishhook Cactus	1.2	2.4	30.0
Mojave Fringe-Toed Lizard Conservation Area	20.5	29.8	304.7
Mojave Ground Squirrel	589.0	609.0	11687.0
Northern Lucerne Wildlife Linkage	57.0	232.3	1307.7
Olancha Greasewood	38.1	32.6	457.6
Old Woman Springs Wildlife Linkage	191.1	184.4	2476.9
Ord-Rodman	337.1	491.9	3976.1
Owens Lake	0.0	0.0	0.5
Panamints and Argus	102.1	66.0	1209.3
Parish's Phacelia Conservation Area	3.1	0.5	36.5
Pinto Mountains	135.6	75.7	1625.1
Pipes Canyon	20.3	24.3	331.2
Pisgah Crater	125.5	33.9	1597.8
Rainbow Basin/Owl Canyon	9.0	11.9	107.3
Red Mountain Spring	3.0	1.9	36.0
Rodman Mountains Cultural Area	2.5	13.4	29.6
Rose Springs	4.8	3.0	43.7
Sand Canyon	3.5	4.9	40.8
Santos Manuel	86.4	30.8	1773.3
Short Canyon	1.0	1.3	13.1
Sierra Canyons	138.9	58.4	1570.6
Soda Mountains Expansion	50.1	14.0	1164.4
Soda Mountains WSA	2.7	4.2	76.6
Soggy Dry Lake Creosote Rings	0.0	4.4	6.5
Steam Well	0.0	0.0	0.0
Superior-Cronese	780.8	726.2	9038.1
Trona Pinnacles	13.6	13.8	161.2

Table 4.11-6. Alternative 5 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs¹

Area	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping ² (Acreage)
Upper Johnson Valley Yucca Rings	0.0	0.0	0.0
Western Rand Mountains	64.4	215.5	765.1
West Paradise	0.0	0.7	0.0
Whitewater Canyon	1.1	0.0	27.8
DT ACECs			
Fremont-Kramer	812.8	1187.8	9591.3
Ord-Rodman	337.1	491.9	3976.1
Pinto Mountains	135.6	75.7	1626.4
Superior-Cronese	780.8	726.2	9038.1
Desert Tortoise Research Natural Area	4.8	126.7	80.3
CDNCLs			
Basin and Range	389.0	251.8	4644.7
Coachella Valley	< 0.1	< 0.1	0.5
Mojave and Silurian Valley	213.8	180.6	2512.5
Pinto, Lucerne Valley and Eastern Slopes	642.5	704.5	7603.7
South Mojave-Amboy	259.8	105.0	3097.8
Western Desert and Eastern Slopes	504.3	934.9	5933.4
National Monuments			
Mojave Trails National Monument	359.0	184.8	6011.4
Sand to Snow National Monument	53.5	32.0	718.7

1 – Because many special designation areas overlap with others, an individual route may be included within the mileages and acreages in this table multiple times. Therefore, the total mileage of open routes and the total acreage of stopping, parking, and camping areas within the WEMO Planning Area cannot be derived from this table.

2 – SPC acreage calculated using standard widths outside DT ACECs and inside non-specified ACECs, but the specified distances for ACECs where specified.

The decrease in the mileage of OHV Open and OHV Limited routes between Alternative 2 and the No Action Alternative for most ACECs and CDNCLs represents the overall goals and objectives of the Alternative to minimize the route network for resource protection. In Rose Spring ACEC, the increase in route mileage reflects a complete mapping of the currently approved rights-of-way for the Los Angeles Aqueduct and the transmission lines emanating from the power station at Haiwee Reservoirs. The designation of these routes allows for connectivity on existing maintained and well-used routes. The increase in the mileage of OHV Open and OHV Limited routes in Fossil Falls ACEC reflects a more accurate mapping of the existing access routes for two major transmission lines that traverse the ACEC. The routes also correspond to the BLM managed interpretive trail and campground.

The increase in the mileage of OHV Open and OHV Limited routes between Alternative 3 and the No Action Alternative for most ACECs and CDNCLs represents the overall goals and objectives of the Alternative to provide a more access-based route network. For example, in

Bedrock Spring, Christmas Canyon, Rose Spring, and Trona Pinnacles, routes that provide connectivity through the ACECs were identified and designated as OHV Open or OHV Limited routes. The Jawbone ACEC OHV routes as identified in Alternative 3 reflect a thorough mapping of all routes within the ACEC. This includes major rights-of way associated with the First and Second Los Angeles Aqueducts, several major transmission lines, access routes to private lands, access routes to renewable energy developments, and the previously designated 1985-1987 routes that did not accurately appear in the original WEMO plan. The revised network, per this alternative, was reviewed against the goals and objectives of the ACEC Plan, and is consistent with those goals. These goals include protection and enhancement of wildlife habitat and Native American values, while allowing appropriate land uses. Since the ACEC includes two OHV Open Areas, additional mitigation and minimization measures have been adopted and implemented in this ACEC to minimize impacts. The Last Chance Canyon ACEC and West Rands ACEC likewise reflect the total available routes within the ACEC that allow for maximum access and that were previously mapped inaccurately. The routes also provide connectivity through the ACECs and TMAs where they exist.

Alternatives 4 (Draft Proposed Action) and 5 (Final Proposed Action) take ACECs into further consideration along with new data and field observations. These two alternatives are similar in their approach towards ACEC management, in that each seeks to allow users to reach points of interest and to reduce route redundancy. MFTL ACECs received additional analysis due to a requirement within the Court Remedy Order to monitor and gather more information about MFTL habitat. The proposed route network has no potential adverse effects for six of the seven ACEC parcels in the Mojave River channel since the route network has no intrusion into fringed-toed lizard habitat. The historic Mojave Road which traverses along the length of the Mojave River channel from the Manix ACEC to Afton Canyon also traverses through three MFTL ACECs. However, travel along this route is largely confined by topography (river channel walls, boulders, etc.) with few route incursions. The route sometimes wanders within the channel but largely avoids fringed-toed lizard habitat resulting in minimal adverse effects to this species.

The proposed route network may have potential direct effects at two MFTL ACECs where the route network traverses habitat. One of these ACECs is the Razor ACEC and is located adjacent to the Razor Open Area and BNSF Railroad. The other ACEC is located adjacent to the Sheephole Mountains and east of the town of Twentynine Palms.

The proposed route network traverses suitable MFTL habitat outside ACECs. Many of these areas have not been surveyed and acreages of suitable habitat have not been mapped to date. MFTL presence exists (CNDDDB Data) for the Alvord Mountains and Pisgah creator area where the proposed route network may have direct effects. The Pisgah ACEC was established in part for the protection of the MFTL. However, this lizard species may occur outside the boundaries of the ACEC where they may be affected by the proposed route network. OHVs may have adverse effects to MFTL along the west slopes of the Cady Mountains where habitat may be suitable but presence/absence data does not exist. Five MFTL were collected in the Harper Dry lake vicinity in 1949. However, there are no recent sightings.

The Ridgecrest Field Office has one ACEC (Big Rock Creek Wash) with MFTL habitat. Similar surveys were conducted by the Ridgecrest Field Office under optimal conditions within and adjacent to ACECs known to contain suitable conditions for MFTL habitat. Three of four areas (Edwards North, Cuddeback Dry Lakebed, and Big Rock Creek Wash) observed no sightings or suitable habitat. The fourth area, Piute Butte, contained suitable habitat conditions, but no

observations or signs of living habitat were observed. These surveys were reported in the March 31, 2013 WEMO Quarterly Report. In conclusion, adverse effects could be quantified or assumed for any of these four areas.

The Mojave Trails and Sand to Snow National Monuments also received specific resource considerations in accordance the objects listed their respective proclamations. Each of these monuments call for protections of these objects, with the two main areas being science and history. In order to fully appreciate these proclaimed objects visitors must be able to gain reasonable access whilst also considering resource conflicts with biological and cultural resources. The BLM has considered all proclaimed objects during the decision-making process of adding an additional 38 miles in Mojave Trails and 11.3 miles in Sand to Snow, respectively of OHV Open and OHV Limited routes. A portion of these routes are subdesignated as authorized/permited for specific limited uses, such as paleontological and geological research, two of the objects that are protected by proclamation. In order to gain knowledge and awareness and better protect these resources a slightly higher level of access was needed. Approximately 185 miles of routes within Mojave Trails National Monument are OHV Limited use and are subdesignated as authorized/permited for the purposes of research, ROWs and access to DOD lands. Additionally the Sand to Snow National Monument also utilized OHV Limited use routes, primarily as hiking subdesignations with approximately 45 miles out of a total 53.5 miles designated as OHV Closed routes. This adheres to the objects listed in its respective proclamation calling for hunting, fishing, hiking and camping recreational opportunities with majority of routes subdesignated as non-mechanized.

4.11.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for ACECs, CDNCLs, Wilderness Study Areas, lands managed for wilderness characteristics, and national monuments include but are not limited to:

- Modify access to a less impacting designation;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Install access type restrictor;
- Re-align route to avoid designated area;
- Restrict stopping/parking/camping;
- Add/upgrade parking/camping area;
- Install barriers and maintain or upgrade existing barriers;
- Add or modify non-motorized trail access;
- Remove attractants;
- Construct or install educational information such as signs and kiosks;
- Install fencing;
- Narrow route;

- Monitor routes for signs of increasing impacts to a sensitive resource; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

Under all alternatives, further mitigation occurs by continuing the ongoing and future partnerships between the BLM and the local non-profits and agencies to further intensive travel management, land management, and ACEC resource protection activities within the Jawbone and Western Rand Mountains ACECs and the Fremont-Kramer DT ACEC through such efforts as increased signing and monitoring patrols, field maintenance, facility maintenance, implementation of resource-site protection measures, and habitat restoration.

Under the No Action Alternative, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs limit soil compaction or disturbance in currently undisturbed areas, thus reducing the potential for new impacts to biological, cultural, scenic, and other resources for which special designations were made, as compared to pre-2006 conditions before these limitations were enacted.

Under Alternatives 2, 3, 4, and 5, limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and further limiting stopping and parking limits would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for direct or indirect effects to biological, cultural, scenic, and other resources for which special designations were made. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific biological, cultural, and other resource impacts are considered before authorizing new OHV Open and OHV Limited routes, but may also slow response to changing conditions on the ground.

4.11.6 Residual Impacts After Implementation of Mitigation Measures

Residual effects to Special Designation areas would continue after application of mitigation measures, both with continued OHV use, and following designation of routes as transportation linear disturbances. Although impacts would be reduced from those that would have existed without mitigation measures, continued OHV use within ACECs, DT ACECs, CDNCLs, national monuments, WSAs, and lands managed for wilderness characteristics could still impact wildlife, vegetation, and other resources for which these special designations were made. Impacts would continue to occur due to direct strikes to wildlife by OHVs, OHV noise, and disturbance of soil and vegetation. Designation of routes as transportation linear disturbances of routes in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.12 Noise

4.12.1 Methodology

The 2005 WEMO EIS analyzed the effect of noise, including OHV noise, on wildlife. The 2005 WEMO EIS concluded that closure of routes under the WEMO plan would reduce OHV noise, and thus decrease noise impacts to wildlife. The EIS did not provide an analysis of noise impacts to sensitive receptors or residents. The Court's Summary Judgment and Remedy order

did not specifically reach conclusions, or provide direction, regarding the sufficiency of the noise impact analysis.

4.12.2 Impacts Common to All Alternatives

With respect to the transportation network in the WEMO Planning Area, the types of noises from use of routes on public lands are generally intermittent noises created by the passage of single vehicles or vehicles in small groups on an irregular and infrequent basis. In developed areas or areas near major highways that have higher ambient noise levels, the additional noise created by these vehicles is expected to have little or no adverse impact. However, in remote areas with low ambient noise levels, the additional noise may have an adverse impact on wildlife or sensitive receptors. This can especially be the case where routes used for organized activities create greater use levels, and therefore greater noise impacts, even if these impacts are only intermittent.

Some land uses are considered more sensitive to ambient noise levels than others due to the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Consequently, the noise standards for sensitive land uses are more stringent than those for less sensitive uses, such as commercial and industrial (SCAG 2003).

Certain human activities and sensitive land uses (e.g., residences, schools, and hospitals) generally require lower noise levels. A noise level of L_{dn} 55 to 60 dB on the exterior is the upper limit for speech communication to occur inside a typical home. In addition, social surveys and case studies have shown that complaints and community annoyance in residential areas begin to occur at L_{dn} 55 dB (SCAG 2003).

In general, the surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower ambient noise levels are generally expected in rural or suburban areas, such as the areas used for OHV recreation on public lands. Therefore, the difference between ambient noise and noise associated with OHV use is expected to be higher in those areas. Although fewer sensitive human receptors are expected in those areas than in developed areas, the impacts on those receptors would be higher.

Several studies have documented the potential impacts of noise on wildlife, including studies on species that are found within the planning area. A Federal Highway Administration (FHWA) literature review in 2011 summarized the effects of noise on a variety of species as part of an analysis of highway traffic noise impacts. That study summarized the sensitivity of various taxa to noise as follows:

- Mammals – sensitive to noise levels as low as 20 dB.
- Birds – sensitive to noise levels down to 0 to 10 dB.
- Reptiles – sensitive to noise levels at 40 to 50 dB.
- Amphibians – sensitive to noise levels ranging from 10 to 60 dB.

Wildlife reactions to noise can include alert reactions, physiological indicators of stress, and hearing loss. In some species, such as birds, noise sources can mask their songs, which are used to communicate pair bond formation, territorial defense, danger, and advertisement of food

sources. In mammals, noise generally causes individuals to avoid areas, thus causing modifications in occupied habitat.

The 1994 Desert Tortoise Recovery Plan (USFWS 1994) listed the following potential noise impacts, without any data to support the conclusions. Noise impacts may cause disruption of communication and damage to the auditory system, which may affect an individual's ability to effectively communicate and respond in appropriate ways. In several places, the Recovery Plan referred to "noise pollution" or listed noise as one of the potential impacts, but provided no specific data. The 2011 Recovery Plan indicated that no additional data on noise impacts had been developed. In his threats analysis, Dr. Boarman (2002) reiterated the information given in the 1994 Recovery Plan, which is recited above, plus the following observations. A study conducted by Bowles et al. (1999) showed very little behavioral or physiological effect on tortoises of loud noises that simulated jet over flights and sonic booms. They also demonstrated that tortoise hearing is fairly sensitive (mean = 34 dB SPL) and was most sensitive to sounds between 125 and 750 Hz, well within the range of the fundamental frequency of most of their vocalizations. The authors concluded that tortoises probably could tolerate occasional exposure to sonic boom level sounds (140 dB SPL), but some may suffer permanent hearing loss from repeated long-term exposure to loud sounds such as from OHVs and construction blasts. Boarman (2002) also indicated noise or vibration might affect tortoises that live alongside railroads, but found there were no studies to document the impact. He concluded, it is not known if train noise negatively affects the behavior, audition, or reproductive success of these tortoises.

In general, impacts on wildlife in rural areas, including areas of public lands used for OHV recreation, would be expected to be higher than in developed areas. This is because ambient noise levels are lower in rural areas, and therefore the difference between ambient noise and OHV noise is greater.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. In that analysis, noise impacts, in the form of proximity of OHV use to sensitive receptors, were considered as a criterion in determining which routes would remain open and which would be designated as transportation linear disturbances under the various alternatives.

4.12.3 Differences in Impacts Among Plan Amendment Alternatives

There are no noise impacts from the grazing alternatives in PA VII; therefore, there is no further discussion of PA VII in this section. Specific noise impacts to sensitive receptors from PA III through PA VI are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

No current noise impacts are known along the current designated "C" routes; therefore, no noise impacts to sensitive receptors are anticipated as a result of the No Action Alternative.

Because there are no sensitive receptors associated with the "C" routes northeast of the Spangler Hills Open Area, Alternative 2 would not result in any noise impacts to sensitive receptors.

Under Alternative 2, the seasonal limitations on “C” routes would reduce potential noise impacts to wildlife, including desert tortoise and Mohave ground squirrel, during months when these species are active.

Under Alternative 3, the proposed “C” routes that originate from the city of Ridgecrest pass within a ¼ mile of sensitive receptors such as the Cerro Coso Community college, but are not within 300 feet of any private residences.

Under Alternatives 4 and 5, the decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area would be made with appropriate mitigation measures to minimize noise impacts to sensitive receptors and wildlife.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

Although OHV use generates noise, there are no sensitive noise receptors, wildlife corridors, or special-status wildlife situated near any of the lakebeds. As a result, OHV use on the lakebeds is not expected to have adverse noise impacts under any alternative, and this decision would not have any effect on noise impacts. Because Koehn dry lake currently receives relatively light use, the amount of displaced use to other routes due to its closure under Alternative 2, and to its designation as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit” 3, 4, and 5, would be low. As a result, Alternatives 2, 3, 4, and 5 are not expected to have indirect, adverse noise impacts by increasing the recreational use of routes in other areas.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

There are no current noise impacts known along the current designated Rand-Fremont routes system.

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. Therefore, there would be no noise impacts to sensitive receptors anticipated as a result of these alternatives.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Eliminating the permit requirement would not result in designation of additional routes. This decision may result in an increase in recreational use of the existing routes, but this increase is expected to be minor. Therefore, this decision is not expected to have any noise impacts to sensitive receptors or wildlife.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs may have a slight beneficial effect to noise impacts on wildlife by limiting the incursion of OHVs outside of the designated routes. The effect of these actions is a slight reduction in potential noise impacts.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce the potential for noise impacts to wildlife,

and would thus be more beneficial than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

4.12.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that noise from OHVs can have adverse impacts on sensitive human receptors and on wildlife resources. The level of impact would depend on the context, specifically the ambient noise levels associated with other noise sources at each location. The level of impact would also be directly proportional to the proximity of the noise source to receptors. The mileage of routes associated with wildlife receptors under each alternative was presented above in Section 4.4.2. The mileage of routes in close proximity to sensitive receptors and residents under each of the alternatives is presented in Table 4.12-1.

Table 4.12-1. Miles of Routes in Proximity to Sensitive Human Receptors and Nearby Residents for Noise Impacts – All Alternatives

Resource Description	OHV Open and OHV Limited	Non-Motorized	Non-Mechanized	Transportation Linear Disturbance
No Action Alternative				
Miles of route within 1 mile of Sensitive Human Receptors	33.2	0	0.8	106.3
Miles of route within 300 feet (0.057 miles) of Residences	250.5	0	1.0	435.2
Alternative 2				
Miles of route within 1 mile of Sensitive Human Receptors	32.0	7.8	0.8	99.7
Miles of route within 300 feet (0.057 miles) of Residences	248.3	1.8	1.0	435.7
Alternative 3				
Miles of route within 1/4 mile of Sensitive Human Receptors	2.9	1.4	0.3	2.6
Miles of route within 300 feet (0.057 miles) of Residences	609.4	2.9	1.6	72.9
Alternative 4				
Miles of route within 1/4 mile of Sensitive Human Receptors	1.6	0	0.3	5.3
Miles of route within 300 feet (0.057 miles) of Residences	268.8	1.3	2.5	414.1
Alternative 5				
Miles of route within 1/4 mile of Sensitive Human Receptors	1.5	0.8	0.3	4.5
Miles of route within 300 feet (0.057 miles) of Residences	372.1	2.7	3.4	308.7

Alternative 3 has the greatest potential for impacts to sensitive human receptors within 300 feet of residences with 358.9 miles more of OHV Open and OHV Limited routes, and 362.3 fewer

miles of transportation linear disturbances than the No Action Alternative. Moreover, Alternative 3 has a slightly higher potential for impact to sensitive human receptors within one-quarter mile, with approximately 1.4 more miles of OHV Open and OHV Limited routes than Alternative 5. Alternative 2 has the least potential for impacts to sensitive human receptors with 1.2 fewer miles of OHV Open and OHV Limited routes than the No Action Alternative. Alternative 5 has intermediate impacts to sensitive human receptors within 300 feet of residences with 121.9 miles more of OHV Open and OHV Limited routes, and 126.5 miles less of transportation linear disturbances than the No Action Alternative.

4.12.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for impacts resulting from noise include but are not limited to:

- Modify access to a less impacting or more controlled designation;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Construct and/or install educational information such as signs;
- Install speed bumps or similar mechanisms to slow traffic through an area; and
- Determine that no additional minimization and mitigation measure is needed based on area or site evaluation.

Whether they were applied during the route designation process or are mitigation measures, these measures would act to reduce the proximity of noise sources to sensitive receptors. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific noise impacts, including impacts to wildlife and noise in close proximity to sensitive human receptors, are considered before authorizing new OHV Open and OHV Limited routes.

4.12.6 Residual Impacts After Implementation of Mitigation Measures

Residual noise impacts to wildlife and to sensitive receptors would continue after application of mitigation measures. Over time as fewer older motorcycles are being used, noise impacts can be expected to decrease because of the current motorcycle noise standards. Although impacts would be reduced, OHV use would still occur within wildlife habitat, and could impact wildlife individuals due to noise effects. OHV use would also still occur in close proximity to sensitive receptors.

4.13 Travel and Transportation Management

4.13.1 Methodology

The route network evaluated in the 2005 WEMO EIS was developed to include consideration of access to mining claims, private lands, and other authorized land uses. The Court's Summary Judgment and Remedy order did not specifically reach conclusions, or provide direction, regarding the sufficiency of this analysis.

4.13.2 Impacts Common to All Alternatives

Impacts of the WMRNP with respect to travel and transportation management are directly related to the degree to which the network provides access to private lands and authorized users, and connects to the system in adjacent jurisdictions. Any network decision that eliminates OHV access to private land or authorized users, or that substantially increases the distance that must be traveled over the current distance, would be considered an adverse impact to those landowners and authorized users. Similarly, network decisions that fail to maintain connections to adjacent jurisdictions would be an adverse impact not only to users of those routes, but to the adjacent jurisdictional lands. This is because a failure to maintain connections is likely to lead to route proliferation on the adjacent jurisdictional lands.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. The goals and objectives for both Alternatives 2 and 3 include emphasizing through access on public lands to establish a comprehensive network, and this objective was considered in development of the route network for each alternative. Because this objective is common to all alternatives, there are no differences among the route alternatives with respect to completeness of the transportation network, and no adverse impact to travel and transportation management. Therefore, no alternative-specific minimization and mitigation measures were developed to address travel and transportation management impacts.

4.13.3 Differences in Impacts Among Plan Amendment Alternatives

There are no impacts to travel and transportation management from the grazing alternatives in PA VII; therefore, there is no further discussion of PA VII in this section. Specific impacts to travel and transportation management from PA III through PA VI are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

There are no currently known impacts to travel and transportation management associated with competitive race events and corridors; therefore, no impacts to travel and transportation management are anticipated as a result of the No Action Alternative.

Under Alternative 2, the designations of competitive “C” routes would not expand or interfere with the Travel and Transportation network. The proposed routes are already being considered for inclusion in the system that would be available for casual use by the general public. The amendment would only make them available for use under a SRP for an OHV competitive event.

Under Alternative 3, the designation of “C” routes would not result in any adverse impact on access to private landowners, authorized land uses, or adjacent jurisdictions.

Under Alternatives 4 and 5, the decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area would be made with appropriate mitigation measures to protect access to private landowners, authorized land uses, or adjacent jurisdictions.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, OHV use on the lakebeds results in a more interconnected route network, and is therefore beneficial to travel and transportation in the local area. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could affect the connectivity of the transportation network in the vicinity of those dry lakes.

Under the No Action Alternative, no change would be made to the list of dry lakes for which designations are made, or to any of the current designations. Therefore, there would be no change to the current transportation network.

Under Alternative 2, the OHV Closure of Koehn lakebed may result in eliminating access to through routes, thus increasing the distance of travel for OHV users traveling from one side of the lakebed to the other. Therefore, this decision could have a direct, adverse impact on the travel and transportation network in that area, in close proximity to the lakebed. Coyote dry lake and Cuddeback dry lake would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and there would be no change in the current transportation networks in those areas.

Under Alternatives 3, 4, and 5, Koehn lakebed would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”. Similar to Alternative 2, the OHV Closure of the lakebed may result in elimination of access to through routes, thus increasing the distance of travel for OHV users traveling from one side of the lakebed to the other, resulting in an adverse impact to the transportation network in that area. Alternatives 3, 4, and 5 would also designate Cuddeback and Coyote lakebeds as OHV Open use, which would likely increase access to private landowners, authorized land uses, and adjacent jurisdictions near those areas. Therefore, these alternatives would have a direct, beneficial impact in those areas.

Under all alternatives, Chisholm Trail dry lake would remain closed to all types of use, so there would be no change in the transportation network in that area.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. There are no currently known impacts to travel and transportation management associated with the area; therefore, no impacts to travel and transportation management are anticipated as a result of Alternative 2.

Under Alternative 3, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Eliminating the permit requirement may result in an increase in recreational use of the existing routes, but this increase is expected to be minor. Therefore, this decision is not expected to have any effect on access private landowners, authorized land uses, or adjacent jurisdictions.

PA VI: Modify Stopping and Parking Limitations

Under all alternatives, the allowable stopping, parking, and camping distances are not expected to have any effect on access for private landowners, authorized land uses, or adjacent jurisdictions, and would therefore not have any impact on the travel and transportation network.

4.13.4 Differences in Impacts Among Route Designation Alternatives

The No Action Alternative would adopt the authorized travel network as it currently exists, and would also maintain the current goals and objectives, consistent with applicable guidance and policies, which are used to consider new route authorizations in the future. Generally, commercial, recreational, and private landowner access needs are served by the current route network, and it provides connectivity with adjacent jurisdictions and networks. Mechanisms are in place to address future needs for commercial and private landowner access without plan amendment, and to deal with localized safety and resource issues. Future recreational access would be addressed through plan amendment, and changes would be more cumbersome to enact. A strategy is in place for the management of the current network. It includes signing, enforcement, monitoring, and maintenance plan components, which are posted at http://www.blm.gov/ca/st/en/fo/cdd/wemo_court_mandates.html. Key factors in assessing the adequacy of a transportation and travel network are connectivity, safety, and user information.

The route network in Alternative 2 was designed to ensure connectivity to adjoining networks, and to ensure access to private land and authorized users throughout the WEMO Planning Area. However, because Alternative 2 was designed to maximize resource protection, resulting in designation of a larger number of routes as transportation linear disturbances, the means of access to adjoining networks, private land, or authorized land uses may require a longer route of travel by the user to bypass sensitive areas. Similarly, the various alternatives differ in their goals and objectives which would be used to evaluate future route authorizations, and in their minimization and mitigation measures. Under Alternative 2, application of the goals, objectives, and minimization and mitigation measures may result in longer routes of travel, time of day or seasonal restrictions, or other restrictions which users may find to be adverse impacts. Nothing in the goals, objectives, or minimization and mitigation measures would result in BLM choosing to not authorize some means of access to any future private land owner or authorized user. As a result, any adverse impact is expected to be minor.

The route network in Alternative 3 was designed to maximize access for recreational users, including ensuring connectivity to adjoining networks, and access to private land and authorized users throughout the WEMO Planning Area. Because Alternative 3 was designed to maximize access, the route network results in designation of fewer routes as transportation linear disturbances relative to the other alternatives. Similarly, the various alternatives differ in their goals and objectives which would be used to evaluate future route authorizations, and in their minimization and mitigation measures. Under Alternative 3, application of the goals, objectives, and minimization and mitigation measures would likely result in more direct routes, and fewer time of day or seasonal restrictions than the other alternatives. As a result, Alternative 3 would have the fewest adverse impacts to travel and transportation management.

The route networks in Alternatives 4 and 5 were designed to ensure connectivity to adjoining networks, and to ensure access to private land and authorized users throughout the WEMO Planning Area. In addition, they were developed to specifically address concerns raised by

stakeholders regarding maintenance of access on specific routes. As a result, Alternatives 4 and 5 would not have any adverse impacts to travel and transportation management.

4.13.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for potential conflicts resulting from multiple users include but are not limited to:

- Modify access to a less impacting designation;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Minimize overlapping uses by separating in time or space, or through a permitting mechanism;
- Add or identify alternative non-motorized or non-mechanized trail access;
- Construct or install educational information such as signs;
- Install step-over;
- Monitor the route for signs of increasing impacts to a sensitive resource; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

4.13.6 Residual Impacts After Implementation of Mitigation Measures

Because no adverse impacts to travel and transportation management were identified, there would be no residual impacts after mitigation measures were implemented. The route networks under each alternative were designed to ensure continuity between the route network and adjacent jurisdictions, and to ensure continued access to private land. The potential mitigation measures are not expected to adversely impact the overall connectivity of the network.

4.14 Paleontological Resources

4.14.1 Methodology

The 2005 WEMO EIS included a general discussion of the paleontological resources present in the planning area, but did not specifically address the effects of OHV use on paleontological resources. The Court's Summary Judgment and Remedy Order did not specifically reach conclusions, or provide direction, regarding the sufficiency of the information presented.

As part of the 2015 DRECP EIS, BLM developed a regional-scale estimate of paleontological resources throughout the planning area. The resources were classified as Low/Very Low (PFYC Classes 1 and 2), Moderate/Unknown (PFYC Class 3), and High/Very High (PFYC Classes 4 and 5) potential for the presence of important paleontological resources.

4.14.2 Impacts Common to All Alternatives

The route designation process has the potential to both impact and protect significant paleontological resources, depending upon how paleontological resources are considered in the

criteria used to designate routes. The manner in which OHV use can impact paleontological resources is similar to the manner in which it can impact cultural resources. Similar to cultural resources, it is likely that vandalism and looting, inadvertent and intentional, resulting from increased levels of access are the greatest impact and greatest threat to paleontological resources in the California Desert.

OHV use across or near paleontological sites affect those sites in various ways, depending upon the nature of the fossil materials, the nature of the soils at the site and in the immediate vicinity, and the topography of the immediate area. Softer soils and geological units are easily displaced by vehicle tires, along with paleontological materials that may be within or just below the surface of the route. Fossils and the soil matrix in which they exist may be displaced both horizontally and vertically as vehicle tires move through the soil. Fossils may be broken or crushed by the weight of vehicles passing over them. Subsurface resources may be exposed either directly by vehicle use on the road, or indirectly by erosion channels created by vehicle use. Erosion of routes may indirectly affect sites that are off the route by increasing erosion in downstream areas. Effects may occur from the actions, both deliberate and inadvertent, of the occupants or operators of the vehicles, such as collection of fossils or erosion as a result of the use of the route. Similar effects can also occur to paleontological resources that fall within the corridor along routes in which stopping, parking, and camping are allowed, and the corridors along routes in which spectators are allowed to view the events.

In addition to impacts from use of the routes, BLM actions on the routes have the potential to impact paleontological resources. Maintenance activities on routes that are designated as motorized have the potential to impact paleontological resources as a result of ground disturbance during maintenance activities. Similarly, rehabilitation and reclamation of routes that are designated as transportation linear disturbances involve ground disturbance. Implementation activities that may affect paleontological resources include construction of fences or culverts, and placement of signs and kiosks.

Chapter 2 discusses the general resource protection and OHV access and use objectives that were incorporated into the development of the transportation network alternatives. These objectives were used to inform decisions regarding which linear features would be included in the OHV Open, OHV Limited, non-motorized, and non-mechanized transportation network, and which features would be designated as transportation linear disturbances, under each alternative. Paleontological resource impacts were considered in the development of alternative goals and objectives, in designation of individual routes, and in defining specific implementation parameters. The goals and objectives for Alternative 2 focus on enhancing sensitive resource values and areas, and managing access to de-emphasize casual multiple-use OHV and mechanized touring. In contrast, the goals and objectives for Alternative 3 focus on meeting the diverse transportation, access, and recreational needs of the public, and managing access to emphasize casual multiple-use OHV and mechanized touring.

Paleontological resource impacts were considered by evaluating individual route locations with respect to the Low/Very Low, Moderate/Unknown, and High/Very High potential for the presence of important paleontological resources classifications developed to support the 2015 DRECP EIS. GIS mapped route locations were analyzed with respect to the magnitude of routes present within each of the three classification areas. All routes were analyzed, regardless of proposed designation, and included consideration of stopping and parking distances from routes.

Therefore, minimization of paleontological resource impacts was a factor both in development of the alternative route networks and in the specific limitations placed on routes in those networks.

4.14.3 Differences in Impacts Among Plan Amendment Alternatives

Specific impacts to paleontological resources from PA III through PA VII are addressed in the following paragraphs.

PA III: Update Parameters for Competitive Event Access

Paleontological resource inventories have not been completed for the routes north of the Navy Road. As yet unidentified paleontological resources may be within or adjacent to the routes and may be impacted by the increased use of the routes by vehicles and spectators.

The seasonal limitations on “C” routes under Alternative 2 may reduce their use for OHV events, and thus have localized beneficial impacts on paleontological resources near those routes.

Under Alternative 3, paleontological resource inventories have not been completed for the specific routes north of the Navy Road and South of the Spangler Open Area, or for routes which connect the city of Ridgecrest with the Spangler Open Area. As yet unidentified paleontological resources may be within or adjacent to the routes and may be impacted by the increased use of the routes by vehicles and spectators, as described in the impacts common to all alternatives.

The decision to identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area under Alternatives 4 and 5 would be made with appropriate mitigation measures to protect paleontological resources.

PA IV: Update Access Designations for Washes, Sand Dunes, and Dry Lakes

In general, the lakebeds may be associated with known or unknown paleontological resources which may be impacted by OHV use of vehicles. Under Alternatives 2, 3, 4, and 5, PA IV would amend the current designations for Koehn, Cuddeback, and Coyote dry lakes, and these changes could impact paleontological resources.

Under the No Action Alternative, no change would be made to the list of dry lakes for which designations are made, or to any of the current designations. Therefore, there would be no change in current impacts to paleontological resources.

Under Alternative 2, the closure of Koehn lakebed could have a minor direct, beneficial effect on paleontological resources associated with the lakebed. The use of this lakebed is not substantial, and the users of Koehn lakebed are not expected to substantially increase use of other routes and areas within the planning area for recreation, and Alternative 2 is not expected to have an indirect, adverse impact to paleontological resources by increasing the recreational use of routes in other areas. Under Alternative 2, Coyote dry lake and Cuddeback dry lake would remain designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit”, and there would be no change in impacts to paleontological resources.

Under Alternatives 3, 4, and 5, Koehn lakebed would be designated as “OHV Limited use, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation

Permit”, which could have a minor direct, beneficial effect on paleontological resources associated with the lakebed. The use of this lakebed is not substantial, and the users of Koehn lakebed are not expected to substantially increase use of other routes and areas within the planning area for recreation. Therefore, Alternatives 3, 4, and 5 are not expected to have an indirect, adverse impact to paleontological resources by increasing the recreational use of routes in other areas. Alternatives 3, 4, and 5 would also designate Cuddeback and Coyote lakebeds as open to OHV use. Therefore, this alternative could have an adverse impact on paleontological resources on these lakebeds.

Under all alternatives, Chisholm Trail dry lake would remain closed to all types of use, so there would be no change in impacts to paleontological resources.

PA V: Update Access Designations in the Rand Mountains-Fremont Valley Management Planning Area

Paleontological resource surveys have not been performed except in limited areas. As yet unidentified paleontological resources may be within or adjacent to the routes and may be impacted by use of the routes by vehicles and spectators.

Under the No Action Alternative and Alternative 2, there would be no change to access to the Rand Mountains-Fremont Valley Management Area. Maintaining the current permit program as described in WEMO 2006 will have no change in the anticipated impacts to paleontological resources from currently authorized OHV travel routes.

Under Alternatives 3, 4, and 5, the visitor use permit program established for OHV use in the Rand Mountains would be eliminated. Removing the permit requirement as described in WEMO 2006 will have no change in the anticipated impacts to paleontological resources from the currently authorized OHV travel routes.

PA VI: Modify Stopping and Parking Limitations

Under the No Action Alternative, the allowable stopping and parking distance of 300 feet outside of DT ACECs and 50 feet inside DT ACECs have the effect of reducing the amount of new disturbance that would occur, thus reducing the potential for OHV use to directly impact unknown paleontological resources. The effect of these actions is a net beneficial impact to paleontological resources.

Under Alternative 2, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 50 feet would further reduce the potential for direct impacts to paleontological resources, and would thus be more beneficial than the limits under the No Action Alternative. Under Alternatives 3, 4, and 5, the reduction in the limits that are currently authorized outside of DT ACECs from 300 feet to 100 feet would also be more beneficial than the No Action Alternative, but would still allow a larger area of disturbance outside of DT ACECs than Alternative 2 (100 feet in Alternatives 3, 4, and 5 versus 50 feet in Alternative 2).

PA VII: Livestock Grazing Program Modifications in desert tortoise habitat

Under the No Action Alternative and Alternatives 3, 4, and 5, livestock grazing would continue under the terms and conditions contained in the Final Grazing Decisions issued for active grazing allotments within the West Mojave Planning Area.

Under Alternative 2, livestock grazing levels would continue to be managed to the level currently allowable in WEMO for all allotments outside of DT ACECs. Grazing would be discontinued on 107,779 acres of the Ord Mountain Allotment that are within the Ord-Rodman DT ACEC and CHU. Ephemeral sheep grazing would be discontinued on 6,726 acres of the Cantil Common Allotment and 3,323 acres of the Shadow Mountain Allotment within the Fremont-Kramer DT ACEC.

Under the No Action Alternative and Alternatives 3, 4, and 5, on-going but localized direct impacts to unknown paleontological resources may occur in active grazing allotments.

Under Alternative 2, similar impacts would continue in active grazing allotments. Discontinuing livestock grazing on portions of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments would eliminate direct impacts to paleontological resources in that portion of those allotments. This reduction in grazing use of 115,106 acres would have a direct, beneficial impact on paleontological resources.

4.14.4 Differences in Impacts Among Route Designation Alternatives

The evaluation of impacts common to all alternatives concluded that OHV use can have direct adverse impacts to paleontological resources. Direct impacts to physical resources would likely only occur due to actual contact with OHVs, or by ground disturbance associated with vehicle use, route maintenance, or route reclamation. Therefore, the level of direct impacts tends to be associated with proximity to the resource. The mileage of routes within the Low/Very Low, Moderate/Unknown, and High/Very High potential for the presence of important paleontological resources classifications developed to support the 2015 DRECP EIS under each alternative is presented in Table 4.14-1.

Table 4.14-1. Miles of Routes within Paleontological Resource Classification Areas – All Alternatives

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
No Action Alternative			
Low/Very Low Potential	1763.3	3718.0	56223.3
Moderate/Unknown Potential	2578.7	3292.6	84439.2
High/Very High Potential	1142.6	2315.6	36015.8
Alternative 2			
Low/Very Low Potential	1585.5	3895.6	18679.4
Moderate/Unknown Potential	2332.4	3538.0	27189.6
High/Very High Potential	933.6	2524.1	10833.9
Alternative 3			
Low/Very Low Potential	3473.6	2007.5	56532.0
Moderate/Unknown Potential	4387.1	1483.4	69990.4
High/Very High Potential	2250.4	1207.4	36042.6
Alternative 4			

Table 4.14-1. Miles of Routes within Paleontological Resource Classification Areas – All Alternatives

Resource Description	OHV Open and OHV Limited (Mileage)	Transportation Linear Disturbance (Mileage)	Stopping/Parking/Camping (Acreage)
Low/Very Low Potential	2017.1	3464.2	32773.0
Moderate/Unknown Potential	2688.3	3182.1	43406.6
High/Very High Potential	1203.6	2254.1	19115.8
Alternative 5			
Low/Very Low Potential	2099.7	3381.5	34547.1
Moderate/Unknown Potential	2799.8	3070.9	45483.5
High/Very High Potential	1343.6	2114.5	21649.3

Alternative 3 has the greatest potential for impacts to paleontological classification areas with 4626.5 miles more OHV Open and OHV Limited routes for each level of potential, and 14,113.3 acres more of stopping/parking/camping than the No Action Alternative. Alternative 2 has the least potential for impacts to paleontological classification areas with 634.1 fewer miles of OHV Open and OHV Limited routes for each level of potential, and 119,975.4 fewer acres of stopping/parking/camping than the No Action Alternative. Alternative 5 has an intermediate potential for impacts paleontological classification areas with 758.5 miles more OHV Open and OHV Limited routes for each level of potential, and 74998.4 fewer acres of stopping/parking/camping than the No Action Alternative. Alternative 5 has the second greatest potential for impact to “High/Very High Potential” paleontological areas with 201 miles more of OHV Open and OHV Limited routes than the No Action Alternative.

4.14.5 Resource-Specific Minimization and Mitigation Measures

In addition to the network-wide minimization and mitigation measures described in Table 2.2-1, resource-specific minimization and mitigation measures for impacts to paleontological resources include but are not limited to:

- Modify access to a less impacting designation;
- Re-align route to avoid environmentally sensitive area;
- Restrict stopping/parking/camping;
- Install barriers and maintain or upgrade existing barriers;
- Prohibit Special Recreation Permit use;
- Remove attractants;
- Construct and/or install educational information such as signs or kiosks;
- Install step-overs;
- Narrow route for paleontological resource;

- Fencing or enclosure of a paleontological resource;
- Monitor the route for signs of increasing impacts to a sensitive area; and
- Determine that no additional minimization and mitigation measure is needed based on field identification (i.e., ground truthing of GIS data indicates no resource is present, no resources are impacted or existing minimization and mitigation is adequate).

Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to paleontological resources. Under the No Action Alternative, measures such as limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for new direct or indirect effects to paleontological resources, as compared to pre-2006 conditions before these limitations were enacted.

Under Alternatives 2, 3, 4, and 5, limiting new ground disturbance in DT ACECs, disguising routes designated as transportation linear disturbances, and further limiting stopping and parking limits would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for direct or indirect effects to paleontological resources. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific paleontological resource impacts are considered before authorizing new OHV Open and OHV Limited routes.

4.14.6 Residual Impacts After Implementation of Mitigation Measures

Residual effects to paleontological resources could continue after application of mitigation measures. Because of the infrequency of fossil preservation and the extinction of most fossilized species, fossils are considered nonrenewable resources. Once destroyed, a particular fossil can never be replaced. Although impacts would be reduced from those that would have existed without mitigation measures, OHVs and livestock may still enter undisturbed areas and adversely impact unidentified resources.

4.15 Cumulative Impact Analysis

The cumulative impact assessment in the SEIS analyzes how the environmental conditions within the WEMO Planning Area may be affected by the WMRNP in combination with other activities that are likely to take place.

NEPA identifies three types of potential impacts: direct, indirect, and cumulative. A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFF actions regardless of which agency (federal or non-federal) or person undertakes such other actions (40 CFR Section 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” 40 CFR Section 1508.7.

4.15.1 Methodology

Under NEPA, the approach for analyzing cumulative effects involves establishing a geographic scope and timeframe for the each cumulative effects issue (H-1790-1 – National Environmental Policy Act Handbook (BLM), section 6.8.3). “The geographic scope is generally based on the natural boundaries of the resource affected, rather than jurisdictional boundaries” and may be different for each cumulative effect issue (H-1790-1, section 6.8.3.2). “Timeframes, like geographic scope, can vary by resource” (H-1790-1, section 6.8.3.3). Once the geographic and temporal scopes have been established, “[t]he cumulative effects analysis considers past, present, and RFF actions that would affect the resource of concern within the geographic scope and the timeframe of the analysis.” The analysis must include other federal actions, and non-federal (including private) actions (40 CFR 1508.7).

Under NEPA, past actions must be considered to provide context for the cumulative effects analysis (40 CFR 1508.7). Past actions can usually be described by their aggregate effect without listing or analyzing the effects of individual past actions (CEQ, *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*, June 24, 2005). The past actions in the WEMO Planning Area have contributed to the existing baseline, and are thus described in Chapter 3, Affected Environment. In some circumstances, past actions need to be described in detail when they bear some relation to the proposed action (H-1790-1, section 6.8.3.4). Where necessary, those actions are described throughout this section. For example, Table 4.15-2 includes past and present energy projects, i.e., existing projects and projects currently approved for construction.

4.15.2 Cumulative Scenario

Table 4.15-1 describes the geographic area of interest and impacts considered for each of the resource areas evaluated in Chapter 4 of this SEIS.

Renewable Energy and Other BLM-Approved Projects

Developers have proposed a large number of projects on BLM-administered, State, and private land in the WEMO Planning Area, including renewable, residential, commercial, industrial, and other projects. Many of these projects are small or would be located in already developed areas so would have limited if any potential to combine with the WMRNP alternatives. Projects that would have the potential to combine with the WMRNP alternatives were included in the list. While this list includes many renewable projects, they are competing for utility Power Purchase Agreements, which will allow utilities to meet State-required Renewable Portfolio Standards. Not all of the proposed projects will complete the environmental review process, and not all projects will be funded and constructed for one or more reasons, such as those listed below:

- Not all developers will develop the detailed information necessary to meet BLM, State, and Federal standards or have the time or funds to complete the plan of development or comply with the environmental review requirements.
- As part of approval by the appropriate Lead Agency under NEPA and/or CEQA (e.g., BLM, Energy Commission, or local jurisdiction or USFWS if ESA-listed species would be affected), applicants must comply with all existing laws, regulations, or the prescriptions required by the regulatory authorities incorporated into the Lead Agency’s license, permit, ESA section 7 consultation, or ROW grant. The large size of these

projects may result in permitting challenges related to endangered species, mitigation measures or requirements, and other issues.

- After project approval, construction financing must be obtained (if it has not been obtained earlier in the process). The availability of financing will be dependent on the status of competing projects, the laws and regulations related to renewable project investment, and the time required for obtaining permits for individual projects.
- The inability to secure or a delay in securing a Power Purchase Agreement may result in a delay in financing.

While a large number of projects may be planned, and so are considered to be possible for future development, not all of them are expected to actually be built due to construction funding constraints, schedule, and/or delays. Given the uncertain and challenging economic circumstances facing federal and state economies as well as private developers, it is not assured that future funding and other necessary support will be sufficiently available for all of the proposed projects to be realized within the anticipated schedules. However, based on the potential demand for new renewable sources, the cumulative project scenario includes all projects identified as reasonably foreseeable as of the publication of the Supplemental FEIS. Table 4.15-2 identifies the existing and RFF projects in the WEMO Planning Area that could contribute to cumulative impacts of the same type as the WMRNP alternatives.

Table 4.15-1. Cumulative Scenario

Resource or BLM Program	Cumulative Analysis Impact Area	Elements to Consider	Projects Potentially Contributing to Cumulative Impacts
Air Quality	GBVAB, MDAB, and SSAB	District-specific significance thresholds	All projects in Table 4.15-2
Greenhouse Gases	WEMO Planning Area	Emissions of greenhouse gases	All projects in Table 4.15-2
Geology, Soil, and Water Resources	WEMO Planning Area	Soil erosion, direct and indirect impacts to riparian areas	All projects in Table 4.15-2
Biological Resources	WEMO Planning Area	Direct and indirect impacts to special-status species and habitat, sensitive communities and invasive plants	BLM Resource and ACEC Management Plans, other Federal (DoD and National Park Service) management plans, State and local management plans, and projects listed in Table 4.15-2
Socioeconomics	WEMO Planning Area and 2-hour commute distance from the area	Effects on social character of communities; economic effects on users of routes.	All projects in Table 4.15-2
Recreation	WEMO Planning Area lands available for recreation.	OHV access and use, air quality, noise, visual resources	All projects in Table 4.15-2
Livestock Grazing	Grazing allotments within WEMO Planning Area.	Cumulative loss of grazing opportunities and limitations on access to range improvements.	BLM Resource and ACEC Management Plans, and projects listed in Table 4.15-2 which are within or in close proximity to grazing allotments.
Energy Production, Utility Corridors, and Other Land Uses	WEMO Planning Area	Access to BLM-authorized land uses, including energy production, designated utility corridors, mining, grazing, and communications sites.	BLM Resource and ACEC Management Plans, and projects listed in Table 4.15-2 which are within or in close proximity to other authorized land uses.
Cultural Resources	WEMO Planning Area	Cultural resources, traditional use areas, and cultural landscapes	BLM Resource and ACEC Management Plans, other Federal (DoD and National Park Service) management plans, State and local management plans, and projects listed in Table 4.15-2

Table 4.15-1. Cumulative Scenario

Resource or BLM Program	Cumulative Analysis Impact Area	Elements to Consider	Projects Potentially Contributing to Cumulative Impacts
Visual Resources	Viewshed of WEMO Planning Area locations from which the planning area can be seen	Additive or synergistic visual contrast	BLM Resource and ACEC Management Plans, other Federal (DoD and National Park Service) management plans, State and local management plans, and projects listed in Table 4.15-2
Special Designations	Within Special Designation areas (ACECs, CDNCLs, Wilderness, national monuments) and inventoried lands managed for wilderness characteristics inside the WEMO Planning Area	Impacts to protected resources.	BLM Resource and ACEC Management Plans, and projects within the boundaries of Special Designation areas.
Noise	Within approximately 0.5 mile of OHV routes within the WEMO Planning Area	Combined noise levels at sensitive receptors and residences	Noise sources within 0.5 miles of OHV routes.

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Environmental Impact Statements						
XpressWest High Speed Rail Project (CACA 48497 and NVN 82673)	Victorville to Las Vegas along I-15	DesertXpress Enterprises, LLC	Authorized (Federal Railroad Administration [FRA]) July 2011 and BLM October 2011	RFF	1,300-acre ROW	This project formerly was known as the “DesertXpress High Speed Passenger Rail Project.” The FRA preferred alternative, Segment 3B (modified), would be constructed on the northwest side of I-15 in the Project Area, and a Maintenance of Way facility is located in the town of Baker. (FRA, 2011a, 2011b; BLM, 2011). For additional information about the project and its environmental effects, see the 2011 ROD: https://www.fra.dot.gov/eLib/Details/L01356
Alta East Wind Project (AEWP)	West of Hwy 14 and northwest of the Town of Mojave	BLM and other Land Owners	Approved May 24, 2013	Past and Present	1,999 acres of BLM Land	The AEWP is a proposed wind energy generation facility that would generate up to 318 MWs on a 2,592-acre site, of which 568 acres are private land that is under the jurisdiction of Kern County. AEWP components would include wind turbines, a substation, operation and maintenance facilities, transmission lines, and temporary construction lay down areas. For additional information about the project and its environmental effects, see the 2013 Record of Decision and FEIS: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage&currentPageId=158757

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Desert Tortoise Translocation	MCAGCC	US Marine Corps (USMC)	ROD signed February 2018	Past and Present	Western Expansion Area – 1,015 acres of Non-BLM Southern Expansion Area – 2,935 acres of Non-BLM Requires Translocation of Desert Tortoise onto BLM-managed lands.	A General Translocation Plan (GTP) for Desert Tortoises in 2011 was prepared in support of the 2012 FEIS and its Biological Assessment (BA) (hereinafter the “Land Acquisition BA”). The intent of the GTP was to provide for the translocation of tortoises from training areas in the proposed Western Expansion Area and Southern Expansion Area that would experience high to moderate levels of impact from the proposed training activities, and to recommend further investigation of those factors that would be important determinants of translocation success and tortoise recovery. For additional information about the project and its environmental effects, see the 2016 FEIS: https://www.29palms.marines.mil/Portals/56/%0bDocs/G5/LAA%20Final%20SEIS%20Dec%202016.pdf?ver=2017-08-31-180443-700

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Environmental Assessments						
Transmission Line Upgrade for Abengoa Mojave Solar (Solar Facility is on lands of other ownership)	Harper Dry Lake, 25 miles northwest of Barstow	Abengoa Solar	Approved July 2011	Past, Present	11.92 acres of BLM Land (ROW Amendments included in WMRNP Baseline)	Mojave Solar, LLC (Mojave Solar), solely owned by Abengoa Solar, Inc., submitted an application to DOE under the federal loan guarantee program pursuant to the Energy Policy Act to support construction of a 250-megawatt (MW) net output solar power plant in San Bernardino County, California. This EA supports the analysis for Additional facilities are required to distribute the solar power to the electrical grid, including a new substation, interconnection to the adjacent existing transmission lines, and fiber-optic telecommunication lines linking various substations in the region. Southern California Edison (SCE) proposes to construct and operate these additional facilities. For additional information about the project and its environmental effects, see the 2011 EA: https://www.energy.gov/sites/prod/files/nepapub/documents/EA-1798-FEA-2011.pdf

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Path 46 (EA)	Parallel I-15 from Victorville to the Nevada Border	BLM and other Land Ownership	In Progress	RFF	11.5 of BLM Land	The Los Angeles Department of Water and Power (LADWP) is proposing the Path 46 Transmission Line Clearance Project (proposed action) to restore ground-to-conductor clearances that are out of compliance with transmission line safety and reliability standards. The location of the proposed action is along three existing overhead transmission lines located in San Bernardino County near Victorville, Barstow, and Baker, California: the 500 kilovolt (kV) McCullough-Victorville Lines 1 and 2 (MCV1 and MCV2) and the 287 kV Mead-Victorville Line 1 (MVL1). These transmission lines were installed in the 1930s to transmit power from Hoover Dam to Los Angeles. Construction of the proposed action is anticipated to take up to 18 months. The EA has not yet been published. Please contact the Barstow Field Office for updates and more information about the potential environmental effects regarding this NEPA project.
Calico Peak 33K Pole Line (EA)	Approximately 6 miles north of the Yermo, CA	BLM and Department of the Army	FONSI/DR signed September 11, 2018	RFF	9.12 of BLM Land	The Proposed Action would require permanent and temporary facility ROW for the construction, operation, and maintenance of the 33 kV overhead distribution line extension. Portions of the project would be located on California Department of Transportation (Caltrans) ROW and public lands administered by BLM and the Department of Defense (DOD), US Army Fort Irwin. The project is a distribution line, which delivers power to end users (e.g., commercial telecommunication users). Construction of the proposed action is anticipated to take up 18 weeks. For additional information about the project and its environmental effects, see the 2018 DR and EA: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=73200&dctmId=0b0003e880e0c355

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Kelly Cutover (EA)	Daggett, CA Area	BLM and Other Land Owners	FONSI/DR signed October 15, 2018	RFF	3.4 of BLM Land	The existing 4 kV distribution line was constructed by the California Electric Company in the early 1900s. SCE purchased the California Electric Company in 1964 and has owned and operated the line since that time. The antiquated system is often overloaded because of load growth and the increasing demands of modern technology and can no longer efficiently meet the needs of SCE customers. Consequently, SCE has initiated the 4 kV Elimination Program, a system-wide program to cutover all the 4 kV circuitry to a standard 12 kV or 16 kV voltage to address the issue. For additional information about the project and its environmental effects, see the 2018 DR and EA: https://eplanning.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=106457
Temporary Route Limitation For Routes on BLM Managed Land In San Bernardino County, CA (EA)	San Bernardino County, CA	BLM	EA Published for September 7, 2018	Past, Present	20.77 of BLM Land (Included in WMRNP Baseline)	The BLM is in litigation related to the management of travel and transportation for the 2006 West Mojave (WEMO) Plan. Under this litigation, the BLM has agreed to consider a temporary restriction to street legal vehicles of 130 miles of routes on BLM managed lands that are maintained by the County of San Bernardino Public Works Department. If approved, the route segments that are maintained by the County of San Bernardino Public Works Department will be temporarily restricted to street legal vehicles until a Record of Decision (ROD) for the WEMO Route Network Project (WMRNP) is issued. For additional information about the project and its environmental effects, see the 2018 EA: https://eplanning.blm.gov/epl-front-office/eplanning/projectSummary.do?methodName=renderDefaultProjectSummary&projectId=113864

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
PG&E Hydrostatic Testing (EA)	Along National Trails Hwy from Barstow to Needles and along Hwy 395 from Hwy 58 to north of Ridgecrest	BLM and other Land Ownership	FONSI/DR signed May 3, 2018		Within the existing ROWs and 0.83 new disturbance of BLM Land	A project by PG&E and potential impacts from the Proposed Action, which involves conducting maintenance work, hydrostatic testing and other integrity management activities on segments of Lines 300A/B and to complete strength testing on segments of Lines 311/311-1 in accordance with CPUC General Order 112 F and federal regulations (49 CFR Part 192). As part of the Proposed Action, PG&E also would install ILI equipment along the segments of Lines 300A/B to provide new permanent areas within PG&E's ROW. For additional information about the project and its environmental effects, see the 2018 DR and EA: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=107247&dctmId=0b0003e88112efb7
InterConnect Tower, Sorrell Communication Site (EA)	6 miles west of Dale Evans Parkway of I-15 exit	BLM	FONSI/DR signed	RFF	5.93 of BLM Land	The proposed action involves issuing a communications site use lease and ROW grant for 5.93 acres (5.70 permanent acres and 0.23 temporary acres) for the construction, operation, and maintenance of a multi-tenant communication facility and ancillary components on BLM-administered land. Construction is anticipated to last 60 – 120 days. For additional information about the project and its environmental effects, see the 2018 DR and EA: https://eplanning.blm.gov/epl-front-office/eplanning/%0bprojectSummary.do?methodName=renderDefaultProjectSummary&projectId=99642

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
King of the Hammers Competitive Off Road Race Event Special Recreation Permit (EA)	Johnson Valley Off-Highway Vehicle open area including portion of the shared use area with 29 Palms Marine Corp Air Ground Combat Center (MCAGCC)	BLM and Department of the Navy	FONSI/DR signed 1/5/2016	Past, Present, and RFF	1,300 of BLM Land	The Proposed Action is to issue an SRP and a Land Use Permit to Hammerking Productions to conduct the King of the Hammers Race Event on public lands near Barstow, CA, from 2018 - 2022. The Land Use Permit would include authorization from commercial filming activities associated with the race event; and the construction, operation, and removal of the short course (start/finish) area. The event received approximately 50,000 visitors annually. The EA has not yet been published. Please contact the Barstow Field Office for updates and more information about the potential environmental effects regarding this NEPA project.
Iron Age (EA)	Approximately 18 miles east/southeast of the City of Twentynine Palms, CA and 3.4 miles south of Highway 62 in San Bernardino County, CA	BLM and other Land Owners	In progress	RFF	63 of BLM Land	Iron Age Mine LLC (Iron Age) submitted a Plan of Operations (POO) per 43 Code of Regulations 3809 for the removal of the existing iron ore stockpiles at the Iron Age Mine on both unpatented claims and patented lands. The Iron Age Mine is an iron ore deposit that has been explored and extensively mined through approximately 1965. The EA has not yet been published. Please contact the Barstow Field Office for updates and more information about the potential environmental effects regarding this NEPA project.

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Restoration EAs (Ord Mountain, Calico/Coolgardie, Afton Canyon)	Multiple subregions within the Barstow Field Office	BLM and other Land Owners	Approved	Past, Present, and RFF	Ord Mountain (151,061), Calico (74,048), Coolgardie (121,066), Afton Canyon (81,880) BLM Land and Lands of other Ownership	The overriding purpose of the proposed action is to correct on-going negative environmental impacts to sensitive desert resources from the use of inappropriate routes. The proposed action is intended to help reduce the occurrences of inappropriate route use by restoring and camouflaging closed routes. The EA has not been published. Please contact the Barstow Field Office for updates and more information about the potential environmental effects regarding this NEPA project.
Camino Solar Project	West of HWY 14 and the Town of Rosemond	BLM and other Land Owners	In progress	RFF	244 of BLM Land	Aurora Solar LLC (Aurora Solar), a wholly-owned subsidiary of Iberdrola Renewables LLC (IR), proposes to construct and operate a solar energy project in southeastern Kern County, California. The Camino Solar Project (Project) would be a utility-scale photovoltaic solar project that would be capable to generating up to 44 megawatts. Supporting components would include a 34.5-kilovolt (kV) electrical collection system, and an inner-facility road network. The Project would use the existing substation, transmission line O & M and access roads on private lands associated with the Manzana Wind Power Project (Manzana), operated by Manzana Wind, LLC, a wholly owned subsidiary of Iberdrola Renewables, LLC. There is currently not enough data collected to analyze cumulative effects for this project. Please contact the Ridgecrest Field Office for updates about this NEPA project. For more information see the Notice of Preparation: https://psbweb.co.kern.ca.us/planning/pdfs/notices/camino_solar_nop.pdf

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Sydney Peak Stone	4 miles west of Randsburg, in Kern County, CA	BLM	In progress	RFF	Approx. disturbance - up to 40 acres (subject to change)	This 40-acre parcel is on a slope adjacent to an existing mine lease in the Rand Mountains of eastern Kern County. The client's intention is to extract quartzitic schist from the surface and subsurface for use as decorative paving stone. Currently, only potential biological effects data exist for this project. Please contact the Ridgecrest Field Office for updates and more information about the potential environmental effects regarding this NEPA project.
North Haiwee Dam No. 2	East of HWY 395 south of the town of Olancho	BLM and LADWP	In progress	RFF	11.5 acres of BLM Lands	LADWP is proposing the North Haiwee Dam No. 2 Project, which includes the construction of North Haiwee Dam No. 2 (new Dam or NHD2) to the north of the existing Dam to improve the seismic reliability of NHR in the event NHD is damaged by an earthquake event, thereby ensuring public health and safety. Construction of NHD2 would require the realignment of a portion of the existing Cactus Flats Road and the realignment of a portion of the LAA. Once NHD2 is constructed, LADWP would construct a diversion channel and a notch in NHD, along with other improvements to NHD and the area to the north of the existing Dam, in order to utilize the area between NHD2 and NHD as a basin. For additional information about the project and its environmental effects, see the 2017 EA: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=89402&dctmId=0b0003e880fa67a6

Table 4.15-2. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Location	Ownership	Status	Past, Present or RFF	Acres	Project Description
Rand Water Pipeline (EA)	Fremont-Kramer ACEC Ridgecrest Field Office	BLM	In progress	RFF	4.7 acres of BLM Land	The Rand Communities Water District (RCWD) owns and operates a water system serving the communities of Randsburg, Johannesburg, and Red Mountain, California in portions of Kern and San Bernardino Counties. The proposed project will upgrade a water system that serves approximately 300 residential homes to comply with drinking water standards. The project includes a new water source to solve an arsenic non-compliance problem within the RCWD, which serves an area of approximately 314 acres. Please contact the Ridgecrest Field Office for updates and more information about the potential environmental effects regarding this NEPA project.

¹ As of December 2018

Table 4.15-3. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Air Quality	Greenhouse Gases	Geology	Soil	Water	Biological	Socio-economics	Recreation	Livestock Grazing	Energy, Utility and Other	Cultural Resources	Visual Resources	Special Designations	Noise	Travel and Transportation
Environmental Impact Statements															
XpressWest High Speed Rail Project	X	X	-	-	-	X	X	-	X	-	-	-	X	-	-
Alta East	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Desert Tortoise Translocation (USMC)	X	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Environmental Assessments															
Transmission Line Upgrade for Abengoa Mojave Solar	-	-	-	-	-	X	X	-	-	X	-	-	-	X	X
Path 46	-	-	-	-	-	X	X	-	-	X	-	-	-	-	-
Calico Peak 33K Pole Line	-	-	-	-	-	X	X	-	-	X	-	X	X	-	-
Kelly Cutover	-	-	-	-	-	X	X	-	-	X	-	-	-	-	-

Table 4.15-3. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Air Quality	Greenhouse Gases	Geology	Soil	Water	Biological	Socio-economics	Recreation	Livestock Grazing	Energy, Utility and Other	Cultural Resources	Visual Resources	Special Designations	Noise	Travel and Transportation
Temporary Route Limitation on BLM Managed Land In San Bernardino County, CA	-	-	-	-	-	-	X	X	-	-	-	-	-	-	X
PG&E Hydrostatic Testing	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-
InterConnect Tower, Sorrell Communication Site	X	-	-	-	-	X	X	-	-	X	-	-	-	X	X
King of the Hammers Competitive Off Road Race Event Special Recreation Permit 5 year permit 2018-2022	-	-	-	-	-	X	X	-	-	-	-	X	-	X	X
Iron Age	X	-	-	-	-	X	-	-	-	-	-	-	X	X	-

Table 4.15-3. Existing and Reasonably Foreseeable Future Projects with Potential Cumulative Impacts¹

Project Name	Air Quality	Greenhouse Gases	Geology	Soil	Water	Biological	Socio-economics	Recreation	Livestock Grazing	Energy, Utility and Other	Cultural Resources	Visual Resources	Special Designations	Noise	Travel and Transportation
Restoration EAs (Ord Mountain and El Mirage)	X	X	-	-	-	X	-	X	-	-	-	-	-	-	-
Camino Solar Project	Unk ²	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
Sydney Peak Stone	Unk	Unk	Unk	Unk	Unk	X	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
North Haiwee Dam No. 2	X	X	-	X	X	X	-	-	-	-	-	-	-	-	-
Rand Water Pipeline	X	X	-	-	-	X	X	-	-	-	-	-	-	X	X

¹X indicates a potential for cumulative impacts with the Proposed Action

² Unk indicates an unknown potential for cumulative impacts with the Proposed Action due to data collections in progress

BLM Resource and ACEC Management Plans

CDCA Plan and WEMO Plan

The CDCA Plan of 1980 addressed public-land resources and resource uses within 12 million acres of public land in southern California. The CDCA Plan has been amended several times since 1980. In 2006, the BLM approved a comprehensive amendment covering the WEMO area of the CDCA. The West Mojave Plan Amendment (WEMO Plan) was evaluated in a Final EIS that was approved by BLM in a Record of Decision (ROD) in 2006. The WEMO Plan approved in 2006 is a federal land use plan amendment that presents (1) a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel (MGS) and over 100 other sensitive plants and animals and the natural communities of which they are a part. The 2006 WEMO Plan also adopted an off-highway vehicle (OHV) travel management network and general strategy in support of this biological objective. The WEMO Plan was developed as a collaborative effort involving federal, state, and local agencies and non-governmental stakeholders, collectively designated as the “West Mojave Supergroup”.

Desert Renewable Energy Conservation Plan (DRECP)

The WEMO Planning Area is included within the geographic scope of the 2016 DRECP LUPA. The 2016 DRECP LUPA addresses the suitability of lands within the CDCA for renewable energy development and resource protection and, as a result, affects travel management issues such as access needs and opportunities. The WMRNP Draft SEIS incorporates affected environment data from 2016 DRECP LUPA as appropriate, and considers the effects of the actions taken under DRECP on travel management in the planning area. The draft DRECP LUPA was released in September 2014, and the Record of Decision was issued in September, 2016.

Northern and Eastern Mojave (NEMO) CDCA Plan Amendment

The NEMO Planning Area comprises the northern and eastern portion of the CDCA, to the north and east of WEMO. The NEMO Planning Area lies to the northeast of the western Mojave Desert, in the area that generally lies between Death Valley National Park and the Mojave National Preserve. The NEMO Plan amendment to the CDCA Plan were implemented in a ROD was signed in December 2002. With respect to travel management, the NEMO ROD designated all routes within the NEMO area as “open”, “limited”, or “closed”. The NEMO Plan also eliminated the portion of the Barstow to Las Vegas Race Course within the NEMO Planning Area.

Northern and Eastern Colorado (NECO) CDCA Plan Amendment

The NECO Planning Area comprises the southern portion of the CDCA, to the south of WEMO. The NECO Plan amendment, like the NEMO Plan amendment, was signed by BLM in December 2002. With respect to travel management, the NECO ROD designated all routes within the NECO area as “open”, “limited”, or “closed”. It also designated open and closed wash zones for OHV travel. The NECO Plan also did not eliminate the portion of the Johnson

Valley-Parker route within the NECO area because it lay entirely outside of DT ACECs and had no other particular species sensitivity issues.

ACEC Management Plans

Thirty-one ACECs wholly or partially within the WEMO Planning Area were established by the BLM through the CDCA Plan and amendments prior to 2005. Of these, the Darwin Falls ACEC was later incorporated into Death Valley National Park. The 2006 WEMO Plan made numerous changes to the system of land designations for protection of resources in the WEMO Planning Area. Many of these overlapped with each other. The 2006 WEMO Plan established four DWMAAs (now DT ACECs), totaling 1,523,936 acres for the protection of the desert tortoise, and four conservation areas totaling 1,726,712 acres for protection of other species. In addition, the WEMO Plan made modifications to MUC classifications, boundaries, and management objectives to the existing ACECs, and acted as an amended management plan for 25 of these ACECs to incorporate provisions to conserve protected species. The 2006 WEMO Plan established 10 new ACECs within the planning area. The 2016 DRECP LUPA made changes to some existing ACECs, and also established two new ACECs within the planning area. Under the 2016 DRECP LUPA, the Kelso Creek Monkeyflower ACEC was eliminated as a separate ACEC, and was incorporated into the Jawbone/Butterbrecht ACEC. In addition, the Mohave Monkeyflower ACEC was split into two stand-alone ACECs, the Daggett Ridge ACEC and the Brisbane Valley ACEC. Two new ACECs, the Pipes Canyon and Santos Manuel ACECs, were established. The ACECs and DT ACECs are discussed in Section 3.11.

Other Agency-Approved Projects and Management Plans

The WEMO Planning Area is bordered on all sides by other jurisdictions. These include federal land managed by the BLM, USDA Forest Service, National Park Service, Department of Defense (DoD); state lands managed by the CDFW (formerly California Department of Fish and Game, or CDFG), State Lands Commission, and California Department of Water Resources; City lands where BLM manages small isolated parcels, and private lands and roads subject to state, County, or municipal jurisdiction. Travel management in these adjacent areas is managed through various management plans, general plans, and regulations, a follows:

- Adjacent BLM land is subject to the CDCA Plan or other applicable Land Use or Travel Management Plans;
- Adjacent National Forest Land is subject to applicable Forest, Land, and/or Travel Management Plans;
- Adjacent DoD land is subject to Installation Management Plans and, for the land area to be included within the expansion area for Twentynine Palms Marine Air Ground Combat Center, by the travel-related decisions in the February, 2013 Record of Decision;
- Adjacent State-, County- or City-owned land is subject to agency or jurisdiction-specific regulations and requirements for travel on those lands; and
- Adjacent routes on private land that are designated as part of a County or city network are subject to the applicable General Plan for that County or city;

Cumulative impact issues to be considered with respect to these adjacent route networks include maintaining continuity of access across jurisdictional boundaries; maintaining access (where appropriate) to private lands, approved facilities, and recreational opportunities located outside of the WEMO Planning Area; and managing unauthorized use, including trespass onto adjacent jurisdictions.

National Forest Plans

The National Forests which border the WEMO Planning Area include the San Bernardino National Forest, Angeles National Forest, Inyo National Forest, and Sequoia National Forest. Both the San Bernardino National Forest Management Plan and Angeles National Forest Land Management Plan RODs were signed in April, 2006. These plans included a variety of program strategies, some of which focused on travel management. National forest lands generally provide specific designated access routes to and through each forest onto adjacent public and private lands, consistent with forest land designations and overall recreation management goals.

The San Bernardino National Forest (SBNF) identified lands along the boundary of the two agencies as a major focal point for travel management, and BLM is working with the local SBNF office to identify appropriate public access strategies and achieve shared goals along shared boundaries and watersheds. The Inyo National Forest Land and Resource Management Plan was signed in 1988, and is currently being revised. The 1988 plan provided definition of management requirements for OHV use in certain areas of the Forest. The Inyo National Forest also prepared a Travel Management Plan in August 2009 which made changes to routes included within the National Forest Transportation System (NFTS).

The Sequoia National Forest Land and Resource Management Plan was signed in 1988. The Forest released a Final EIS for their Motorized Travel Management Plan in 2009.

National Park/Preserve Plans

The National Parks and National Preserves which border the WEMO Planning Area include Sequoia, Joshua Tree, and Death Valley National Parks and the Mojave National Preserve. The Death Valley National Park General Management Plan and Mojave National Preserve General Management Plan were both authorized in April, 2002. The Joshua Tree General Management Plan is currently being developed. These federal lands generally provide specific designated access routes to and through the Park onto adjacent public and private lands, consistent with Park goals.

Department of Defense Plans

The DoD installations that border the WEMO Planning Area include Fort Irwin, Twentynine Palms Marine Air Ground Combat Center, Edwards Air Force Base, and Naval Air Weapons Station China Lake. Each of these installations operates under an Installation Management Plan that addresses OHV access and management. BLM coordinates closely with the installations to ensure maintenance of access, as well as to address use of BLM routes for unauthorized access to the installations. The February, 2013 Expansion Plan for Twentynine Palms includes continuing to allow limited OHV vehicle access, as it currently occurs on land managed by BLM for a portion of the expansion area.

The 29 Palms expansion is significant both for recreation and the desert tortoise. The loss of acreage for OHV use is anticipated to result in the displacement of recreation to other areas. It also directly impacts more than one hundred thousand acres of desert tortoise habitat and an unknown number of desert tortoises, which will need to be translocated or otherwise managed within a training area.

Inyo County

In 2011, the Inyo Planning Commission approved two conditional use permits, two tentative parcel maps, an amendment to the General Plan, two zone reclassifications, two variances, and two reclamation plans. The Renewable Energy General Plan Amendment (REGPA) approved an update to the General Plan to address renewable solar and wind energy development in Inyo County. The Sierra Club and Center for Biological Diversity sued the County claiming that an EIR would be required for the amendment. Due to budget constraints and the low threshold in CEQA for the requirement of an EIR, Inyo County rescinded the Renewable Energy General Plan Amendment in 2011. In June 2014, the County published a Draft General Plan Amendment to address solar energy development. This decision establishes Solar Energy Development Areas (SEDAs) throughout the County, and applies megawatt and acreage caps within these areas.

The County is also participating in the Owens Lakebed Master Plan that will provide a framework for future lakebed development

According to the California Department of Finance, Inyo County's population is projected to grow from 18,528 in 2010 to 22,009 in 2040 (DOF 2013). As noted in the Inyo County Housing Element (Inyo County Planning Department 2009), the majority of this growth is expected to occur in the unincorporated areas of the County. The County seeks to concentrate this new growth within and contiguous to existing communities such as Bishop, Big Pine, Independence, and Lone Pine (Inyo County Planning Department 2013a). Inyo County hopes to acquire several sites currently owned by Los Angeles Department of Water and Power to facilitate the development of affordable housing (Inyo County Planning Department 2009, 2013b). The largest employers in the County are within the service sector, retail trade, and public administration (Inyo County Planning Department 2009). The County expects growth in tourism-related employment and wants to market Inyo County as a tourist destination (Inyo County Planning Department 2013c). Additional areas of growth and economic development are projected to occur in agriculture, renewable energy projects, and natural resources extraction (Inyo County Planning Department 2013d).

In addition to the large renewable energy facilities proposed in Inyo County, the Fort Independence Indian Community of Paiute Indians proposes to develop a combination Class II and Class III Gaming Complex and associated full service hotel structure within the western portion of the 360-acre Fort Independence Indian reservation along U.S. Highway 395. The complex would also include a conference center, multipurpose event center, and related facilities (Inyo County Planning Department 2014c).

Kern County

The Kern County General Plan has goals that include residential goals such as promoting higher-density residential development and promoting mixed-densities within developments. The

county's commercial and industrial goals include ensuring adequate and geographically balanced supply of land for a range of commercial and industrial uses and pursuing a strong economy through logical placement and distribution of commercial and industrial development.

Kern County's population is projected to grow from 841,146 in 2010 to over 1.6 million in 2040 (California DOF 2013), with the majority of growth projected in the Greater Bakersfield area (Center for Rural Entrepreneurship 2011). The Tehachapi Mountain Communities have a projected growth of 50-60% by 2040, while western Kern may see modest growth of 5-10% (Center for Rural Entrepreneurship 2011). From 2011 to 2040, increases are projected for most employment sectors, with a doubling of professional services and health and education employment. Construction employment, however, is projected to decrease from current levels (California DOT 2011).

Los Angeles County

Los Angeles County is in the process of updating the Antelope Valley Area Plan. The goals identified in the Land Use Element of this plan include a land use pattern that maintains and enhances the rural character of the unincorporated Antelope Valley and directs the majority of future growth to the cities of Lancaster and Palmdale. It also has a goal to follow a land use pattern that protects environmental resources and promotes efficient use of existing infrastructure. Development planned in the Antelope Valley Area includes the High Desert Corridor, a limited-access highway linking Interstate 5, State Route 14, and Interstate 15 through Los Angeles and San Bernardino Counties; utility-scale renewable energy production; and the Palmdale Regional Airport.

According to the California Department of Finance, Los Angeles County's population is projected to grow from 9,824,906 in 2010 to 11,243,022 in 2040 (DOF 2013). As noted in the Los Angeles County General Plan, the largest growth sectors countywide in terms of jobs are professional, scientific and technical services, health services, and retail trade. Specific industries that have the most potential to contribute to the economy include: entertainment, fashion, aerospace and analytical instruments, trade, education and knowledge creation, publishing and printing, metal manufacturing, biomedical, and tourism (Los Angeles County 2013a). The General Plan outlines several "Opportunity Areas" which are organized into the following types: transit centers, neighborhood centers, corridors, industrial flex districts, and rural town centers. In addition, Los Angeles County has created several "planning areas" which divides the unincorporated areas of Los Angeles County into eleven sections based on geographical location, and similarities in land use and economy.

San Bernardino County

The County of San Bernardino General Plan divides the County into three planning regions, based on geographic location — Valley, Mountains, and Desert — and outlines policies drafted specifically for each of these regions (CSBLUSD 2007a).

Much of the WEMO Planning Area overlaps the Desert planning region of San Bernardino County. The development goals for the San Bernardino Desert Region are to maintain land use patterns that enhance rural environment and preserve the quality of life of the residents. The San Bernardino 2012 General Plan Annual Report notes that recent housing development has been

concentrated in the high desert region including Barstow and Victorville but the county expects upcoming housing projects to be concentrated in the inland valley region.

According to the California Department of Finance, San Bernardino County's population is projected to grow from 2,038,523 in 2010 to 2,988,648 in 2040 (DOF 2013). As stated in the County of San Bernardino General Plan, most of this growth is expected to occur in the western portion of the County. The majority of economic development in San Bernardino County is expected to occur in construction and maintenance occupations, as there is a lot of building activity taking place. Several renewable energy projects have been proposed for San Bernardino County. As of December 26, 2013, there were seven projects under review, ten that had been approved but not yet constructed, and six that had been constructed (CSBLUSD 2013).

In terms of land use, Resource Conservation comprises the majority (55.98%) of designated land uses in the County while Residential Land Use comprises the second largest land use designation (37.92%) (CSBLUSD 2007a: 11-26).

4.15.3 Cumulative Impact Analysis

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and RFF actions regardless of which agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). The Council on Environmental Quality (CEQ) recommends that agencies "look for present effects of past actions that are, in the judgment of the agency, relevant and useful because they have a significant cause-and-effect relationship with the direct and indirect effects of the proposal for agency action and its alternatives" (36 CFR 220.4(f)).

The 2006 WEMO EIS presented a cumulative impact analysis of the WEMO Plan's proposed actions and alternatives, including the addition of new conservation areas and the evaluated route network, in combination with the past, present, and reasonably foreseeable projects within the WEMO Planning Area. The current cumulative analysis for this SEIS tiers from that presented in the WEMO Plan, with the following modifications:

- The list of past, present, and reasonably foreseeable projects has been updated to the current date;
- The affected resource information against which the direct, indirect, and cumulative impacts are evaluated has been updated based on the requirements of the Court's Summary Judgment and Remedy order, and to include updated resource information; and
- The alternatives being evaluated include variations of the TTM goals and objectives and the route networks, as discussed throughout Chapter 2 and in the Travel Management Plans within Appendix G of this SEIS.
- The WEMO Plan's growth inducing impacts are no longer anticipated, because they were predicated on other jurisdictions adopting the Habitat Conservation Plan (HCP) measures proposed in the plan. Although growth inducing impacts are the result of other factors, they are still anticipated in the high desert.

Air Quality

Local air districts have State air quality jurisdiction over all public lands, including transportation routes and grazing allotments located in the WEMO Planning Area, and have been delegated authority to implement the Clean Air Act from the EPA. These include the Mojave Desert Air Quality Management District (MDAQMD) in San Bernardino County, Antelope Valley Air Quality Management District (AVAQMD) in Los Angeles County, Eastern Kern Air Pollution Control District (EKAPCD) in Kern County, and Great Basin Unified Air Pollution Control District (GBUAPCD) in Inyo County.

The discussion of existing air quality in Section 3.2.4 summarizes the attainment status and air emission sources which affect the WEMO Planning Area through year 2035. This includes sources within the planning area, as well as sources outside of the planning area which can contribute to air quality conditions within the planning area. That discussion constitutes an analysis of cumulative impacts from current projects, as it is based on ongoing monitoring programs in locations which can be affected by these sources. All local air districts have analyzed impacts from existing sources for PM₁₀, and prepared a State Implementation Plans (SIP) for the their respective jurisdictional areas which both identify existing sources of emissions and also control measures to manage existing emissions and reduce new emissions (MDAQMD, 1995).

BLM asked the MDAQMD to work with the other air districts and compile the results from the 46 ambient air monitoring stations. The results of this study were reported to BLM in the West Mojave Plan Air Quality Evaluation Report dated April, 2013 (MDAQMD 2013). The Air Quality Evaluation Report provided detailed information on the locations and operations of the 46 monitoring stations throughout the planning area. Monitoring data included VOCs, oxides of nitrogen (NO_x), carbon monoxide (CO), respirable particulate matter (PM₁₀), fine respirable particulate matter (PM_{2.5}), oxides of sulfur (SO_x), and hazardous and toxic compounds (HAPs and TACs). The emissions monitored at the stations include emissions from three categories of sources: stationary sources (such as industrial activity, power generation, and military bases), mobile sources (including on-road vehicles, off-road vehicles, airplanes, and trains), and area sources (small widespread sources such as solvents, fires, and consumer products). A supplement to this report was completed in 2018 by Aspen Environment which provides a quantitative air quality analysis for the BLM's West Mojave (WEMO) Route Network Planning Area, in the form of baseline and project alternative emissions inventories and an existing SIP compliance assessment.

This report provides projected emissions through 2035, and assists in determining cumulative impacts for each Alternative and discussed in Section 4.2. Cumulatively, the total baseline VOC and NO_x ozone emissions (precursors) for the West Mojave Desert and Eastern Kern Ozone nonattainment areas, there is a projected decrease in VOC by 5.87 tons/year and 6.43 tons/year and a decrease in NO_x by 0.36 tons/year and 0.62 tons/year respectively by the year 2035 (See Table 4.2-2). The emissions for VOC exceed the threshold for the West Mojave Desert Ozone Nonattainment area for the 2035, but at a projected decrease of approximately 0.33 percent/year based off the baseline network in conjunction with population multipliers, the project would meet attainment for the West Mojave Desert by 2061. NO_x is currently in within the general conformity threshold for each of these areas with Eastern Kern increasing by 0.62 tons/year in 2035. Emissions from NO_x would not exceed current general conformity until year 2104. Furthermore, the only criteria pollutant which is projected to cumulatively impact the planning

area is PM₁₀, due to the total length of routes varying by Alternative, and thus allowing more PM₁₀ to be subject to wind erosion (See Table 4.2-3). A full discussion can be found in the Air Quality Analysis Report in Appendix E.

A summary of cumulative impacts by Alternative for PM₁₀ emissions are shown in Table 4.15-4. This table shows that the cumulative impacts from indirect PM₁₀ emissions is the highest for Alternative 3 with none of the 6 nonattainment and maintenance areas meeting the conformity threshold. Alternative 5 has the second greatest cumulative impacts with 3 areas exceeding the conformity threshold: East Kern, Indian Wells and San Bernardino County. The BLM supports Alternative 5 as the proposed action, because it meets the goals and objectives of Travel and Transportation Guidance in conjunction with Remedy Order. The projections from the Aspen Environmental Report (2018) are limited in their ability to quantify the total array of causes of PM₁₀ emissions, and these limitations are discussed further within the “Notes and Limitations” sections of the report. In addition to potential cumulative impacts to air quality from WMRNP alternatives there is also a cumulative effect from other projects within the WEMO Planning area as shown in Table 4.15-5.

Table 4.15-5 shows the relative cumulative air quality impacts for past, present and RFF projects within the WEMO Planning Area. It is evident that the total cumulative emissions for all sources for criteria pollutants within the planning area is much higher than the total cumulative impacts from projects. Furthermore, three projects still exceed general conformity thresholds for at least one criteria pollutant under the respective projects preferred alternative.

Table 4.15-4. Air Quality Cumulative Impacts for WMRNP by 2035 for PM₁₀ Nonattainment and Maintenance Areas

	Nonattainment and Maintenance Areas					
	Coso Junction	East Kern	Indian Wells	Owens Valley	SB County	Trona
Status	Maintenance	Serious	Maintenance	Serious	Moderate	Moderate
General Conformity Threshold tons/year	100	70	100	70	100	100
Baseline / No Action Alternative						
Miles of Active Roads	297	93	549	156	3,698	336
Baseline PM₁₀ tons/year	451	141	834	237	5,625	511
Alternative 2						
Miles of Active Roads	232	101	496	124	3,213	273
Change from Baseline tons/year	-99	13	-80	-48	-737	-96
Threshold Exceedance	No	No	No	No	No	No
Alternative 3						
Miles of Active Roads	465	187	1,264	289	5,838	614
Change from Baseline tons/year	256	144	1,088	202	3,254	422

Table 4.15-4. Air Quality Cumulative Impacts for WMRNP by 2035 for PM₁₀ Nonattainment and Maintenance Areas

	Nonattainment and Maintenance Areas					
	Coso Junction	East Kern	Indian Wells	Owens Valley	SB County	Trona
Status	Maintenance	Serious	Maintenance	Serious	Moderate	Moderate
General Conformity Threshold tons/year	100	70	100	70	100	100
Threshold Exceedance	YES	YES	YES	YES	YES	YES
Alternative 4						
Miles of Active Roads	309	142	638	185	3,718	340
Change from Baseline tons/year	19	76	136	45	30	6
Threshold Exceedance	No	YES	YES	No	No	No
Alternative 5						
Miles of Active Roads	319	144	683	190	3,902	366
Change from Baseline tons/year	34	78	205	52	310	45
Threshold Exceedance	No	YES	YES	No	YES	No

Source: Aspen Environmental Group (2018)

Note: Data in this table reflect the assumption that (1) the total open OHV route mileages for each alternative do not change between the present and 2035; and (2) the OHV use on the route network remains constant.

Table 4.15-5. Air Quality Cumulative Impacts WEMO Planning Area Projects

Project Name	Air Basin	Permanent Cumulative Emissions tons/year					
		VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
West Mojave Route Network Project (Baseline) includes Restoration EAs	1, 2, 3¹	116	589	20	0.09	14,382	1719
XpressWest High Speed Rail	1	1 ²	21	118	12	4	4
InterConnect Tower, Sorrell Communication Site (mitigated)	1	0.06 ²	0.11	0.09	N/A	0.02	0.00
		Total Projects Permanent Cumulative Emissions tons/year					
		117.1	610.1	138.1	12.1	14,386	1723
		Total Planning Area Cumulative Emissions (All sources) tons/year					
		17194	60,346	595	31	64,066	13,156

Table 4.15-5. Air Quality Cumulative Impacts WEMO Planning Area Projects

		Temporary (Construction) Cumulative Emissions tons/year					
Project Name	Duration	VOC	CO	NO _x	SO _x	PM ₁₀	PM _{2.5}
XpressWest High Speed Rail	38 months	283	1,179	2,091	N/A	900	442
Desert Tortoise Translocation (Mojave Desert Air Basin)	30 years	0.07	0.41	0.77	0.001	0.08	0.03
InterConnect Tower, Sorrell Communication Site (mitigated)	1 – 2 months	0.18	0.89	1.76	N/A	0.32	0.19
Iron Age	15 years	2.22	7.7	21.4	N/A	10.5	3.1
North Haiwee (mitigated)	6 years	52.1	277.4	405.9	N/A	101.7	140.7
Rand Water Pipeline	9 months	0.142	1.03	1.32	0.0014	0.30	0.19
		Total Temporary Cumulative Emissions tons/year					
		2,060.7	1,466.4	2,522.2	0.0024	1,012.9	586.21

¹ 1 - Mojave Desert Air Basin, 2 - Great Basin Valleys Air Basin, 3 - Salton Sea Air Basin

² ROC – Reactive organic compounds; precursor to VOC

Emissions from OHVs were separately inventoried as a subcategory of the mobile sources. Emissions from OHV Open Areas were indirectly inventoried as area sources, as an element within the subcategories of unpaved road dust and fugitive windblown dust. The monitoring locations include a mix of sites near population centers (neighborhood scale monitors) and in rural areas (regional scale monitors). The neighborhood scale monitors are intended to characterize conditions that may affect nearby populations and for tracking the progress towards attainment of the ambient air pollutant standards. The regional scale monitors evaluate emissions within broad geographic regions and track background levels of ambient air pollutants. The monitoring network meets all federal, state, and local air monitoring requirements, including monitoring impacts to ambient air quality resulting from OHVs and OHV Open Areas.

The total emissions inventory in the planning area, combined using data from each of the five air quality districts, was presented in Table 3.2-3. Mobile sources (including OHVs) are the largest source of ozone precursor (VOC and NO_x) emissions, but are a minor component of SO_x, PM₁₀, and PM_{2.5} emissions. VOC emissions from OHVs are high relative to other sources because their engines do not have catalytic controls, and therefore release unburned fuel in their exhaust. As such, OHV emissions are a significant contributor to VOC emissions, which are a precursor to a regional pollutant (ozone). The report concluded that OHV Open Areas are not a significant contributor to either total unpaved road dust or fugitive windblown dust subcategories, and are thus not a significant contributor to regional PM₁₀ emissions. This is because the disturbed area in the OHV Open Areas is small relative to the total mileage of maintained and unmaintained unpaved roads and tracks, as well as tens of millions of acres of land disturbed for other uses, much of which is from outside of the planning area.

Over the last 50 years, urbanization and development have resulted in significant increases in air emissions in Southern California, and eventually the designation of regional air basins as being in nonattainment of CAA standards for criteria pollutants, including particulates. In the last ten years, the air emissions in the region are slowly improving, and many of the programs and projects analyzed in the cumulative scenario are anticipated to contribute to long-term improvement of air quality in Southern California air basins. Implementation of WEMO and other Plan Species Conservation Measures, including habitat disturbance caps, area withdrawals, and habitat rehabilitation programs, are anticipated to reduce emissions of particulate matter from public lands that result from wind erosion of unvegetated surface disturbance areas. Reductions from these plan strategies would primarily occur on BLM lands away from population centers. On the other hand, long term projected population growth in and around current core population centers such as the Antelope Valley, the Victor Valley area and Barstow will result in cumulative increase in air emissions. Air emissions from wind-blown dust are a major problem in the West Mojave desert from sources outside the air basin. While these emissions are exacerbated by local conditions, they are the result of activities upwind in central and southern California.

Agricultural activity within the air basin is a small contributor to PM₁₀, within the miscellaneous category of SIP emissions, and livestock grazing operations are a small portion of the agricultural activity contributions. No measures were identified in the SIP specific to existing livestock grazing activities, and renewals of leases were exempted from conformity determinations consistent with the SIP, due to their nominal (less than 15 tons/year) contributions to air quality in the Mojave Desert planning area (BLM 1997). These results are consistent with all other air district SIPs in the WEMO Planning Area. Under cumulative effects there would not be an increase in grazing activities over those historic levels, and regional exceedances of PM₁₀ standards have decreased approximately 10% (EPA 2003) due to voluntary and SIP measures to decrease emissions from substantial sources. Therefore, there would be no substantial affect to air quality under cumulative analysis.

Direct emissions from OHVs are a substantial contributing factor to particulates emissions. The majority of these emissions are the result of use of Interstate Highways and other major federal, State, and County roads through the region, and urban use in the Victor Valley area. Emissions from OHV use on public lands are a relatively small portion of the direct impacts from OHVs. Erosion is the primary source of PM₁₀ emissions off of public lands. The total mileage of OHV Open and OHV Limited routes and the amount of adjacent disturbed areas available for stopping and parking is not expected to affect the total mileage traveled by OHVs, and overall level of erosion from the use of the network.

Overall, the relative contribution of the travel management strategies proposed under each of the alternatives to air emissions would not substantially vary in the RFF due to the general continued use of routes within all areas of the WEMO Planning Area. Routes classified as transportation linear disturbances have not shown to reduce overall use of the network without sufficient law enforcement, signing and other mitigation measures to reduce usage (Achana 2005 and Ouren 2007). In order to significantly reduce emissions within areas of nonattainment would require classification of many if not all routes as transportation linear disturbance to eliminate all OHV access to that area. There are little to no large-scale studies, which consider the reduction of the level of OHV use for an area that is several million acres and correlate with the reduction of overall OHV emissions contributions. More studies are needed that demonstrate the

effectiveness of route signs, law enforcement and other mitigation strategies that would reduce ridership and subsequently emission without full closure of an area used for OHV travel and recreation. Under all alternatives rehabilitation is proposed to continue to be pursued as a key implementation strategy. Travelled network miles would be unchanged; the net change in air emission impacts attributed to designation of routes as transportation linear disturbances and route use would be minimal. Considered together with other programs and projects and with the strategies to enhance habitat in the WEMO Plan, the cumulative effects of the alternative plan amendment decisions, network frameworks, route designations, and other implementation strategies are anticipated to be corresponding declines in overall PM₁₀ concentrations in a number of areas.

Global Greenhouse Gases

The greenhouse gases effects to the environment are incremental and, in combination with other foreseeable actions such as those identified in Table 4.15-2, will have cumulative effects on BLM resources. The grazing alternatives proposing reductions in AUMs and reduced levels of activity would likely be more resilient to the cumulative effects of greenhouse gases and other foreseeable actions within the planning area, but the differences between alternatives and associated affects for grazing are nominal. None of the grazing alternatives would preclude potential climate adaptation actions (timing and intensity grazing changes) for other resources (air, soil, water, biological resources), including greenhouse gas reductions, impacted by greenhouse gases and other cumulative effects. Any continued grazing within climate vulnerable areas, in combination with other cumulative effects, could affect the availability and/or the function of climate refugia. Carbon sequestration productivity could also be impacted if the combination of grazing, recreation and other activities directly impact soil conditions and indirectly change vegetation community composition and structure thereby changing carbon sequestration functions and productivity.

In general, cumulative greenhouse gases effects to grazing would include a wide range of non-climate environmental stressors which exacerbate conditions, natural disturbance regimes, such as wildfire, competition with wildlife for forage and water resources, and other large scale projects and activities that affect the quantity and quality of forage and water. Long-term strategies for grazing may need to consider the projected large scale shifts in vegetation communities, ongoing drought conditions, and balancing forage competition with wildlife. The alternatives which reduce AUMs may be more resilient to greenhouse gases, since they are considering the changing conditions of the environment and other wildlife and resources uses, but the difference between the alternatives being evaluated is not significant.

The alternatives being evaluated as part of the WMRNP would not result in any increase or decrease in the total amount of direct OHV GHG emissions in the planning area. The proposed CDCA plan amendment decisions associated with the alternatives would not lead to a change in the OHV use or miles traveled in the planning area, and would therefore not result in any increase or decrease in direct or indirect GHG emissions from OHVs. Therefore, the alternatives evaluated as part of the WMRNP would not contribute to an incremental change in cumulative global greenhouse gases impacts.

In general, the cumulative effects associated with greenhouse gases and the transportation network, along with other non-climate stressors, natural disturbance regimes (wildfire), and

regional projects in the area, would have indiscernible differences between alternatives. Any changes that put routes within high flood and or rock- or mudslide areas may pose an increased risk to users and the durability of route infrastructure. Additional routes, placed outside of high hazard areas, may provide safer and more durable routes as well as potential escape routes from high hazard areas or during storm events and natural disasters. Plan alternatives were not evaluated individually for their resilience to the effects of greenhouse gases on the transportation network. The differences between alternatives are not substantial enough to warrant an additional assessment.

Considered together with other programs and projects, including renewable energy projects in the region, and with the strategies to enhance habitat in the WEMO Plan, the cumulative effects of greenhouse gases between grazing and transportation route alternatives is indiscernible. Table 4.15-6 shows projects with significant cumulative GHG impacts that are either permanent (ongoing) or temporary. The WMRNP and other major projects are or will be contributors to total GHG annual emissions, but are still less than cumulatively significant. California emitted 429 million metric tons of CO₂ in the year 2016 (CARB 2018). The WMRNP emitted .0022 percent of the total GHGs emitted in California.

Table 4.15-6. Greenhouse Gases Cumulative Impacts WEMO Planning Area Projects

Project Name	Permanent Annual Greenhouse Gas Emissions MT CO ₂ e
West Mojave Route Network Project (Baseline) includes Restoration EAs	9,581
XpressWest High Speed Rail	75,122
Alta East	332
Project Name	Temporary Annual Greenhouse Gas Emission MT CO ₂ e
XpressWest High Speed Rail	49,491
North Haiwee (mitigated)	1,657
Alta East	184.5

Geology and Soils

In OHV Limited Access Areas within the WEMO Planning Area, OHV use of unpaved routes are a substantial contributing factor to overall planning area soil compaction, mechanical displacement, or removal of vegetation or crusts that stabilize surficial soils and result in decreased water infiltration rates and soil moisture content, increased potential for wind and water erosion, dust deposition downwind of routes, and changed soil chemistry.

Long-term repeated use of OHV routes, trails, hill-climbs and livestock watering and holding facilities results in some areas that are often intensely compacted. The amount of compaction

depends on vehicle characteristics, amount of activity, soil type, and soil moisture content. OHV activity on wet soils tends to result in greater compaction than on dry soils. Some cohesion-less sands, such as sand dunes, are very resistant to compaction whether wet or dry.

Overall travelled network miles are not anticipated to change under the various alternatives. However, any substantial change in the intensity of OHV use on routes or from other activities has the potential to have direct effects on soil resources, as well as resulting in indirect effects on air quality, water quality, stormwater flow, vegetation, and human health. Increased OHV use in places that have previously been subjected to light, intermittent OHV use, could result in either compaction or de-compaction, depending on the characteristics of the soil, the slope, the type of OHV, and the manner in which the vehicle is used.

Continued OHV and livestock use in already compacted areas may not lead to substantial additional compaction, but it would ensure that natural recovery does not begin to occur. Continued moderate to heavy OHV use on loose soils would lead to ongoing mechanical displacement and loss of soil through erosion, which are direct, adverse impacts to soil resources. Indirect impacts on air quality, water quality, stormwater flow, vegetation, and human health would be adverse, and would continue until the affected soils were allowed to recover. Reductions in OHV, livestock, or other intensive use in areas currently experiencing intense use would lead, over time, to restoration of original soil conditions, which would be a beneficial effect.

Grazing animals can apply compressional and shear forces to the soil. The crust response to these disturbances is highly variable. Moisture and burial are two important factors relating to the degree of impact. With coarse textured sandy soils, moist crusts are better able to withstand disturbances than dry soils (Belnap 2003 and BLM 2001). Many of the biological crust species are not mobile and cannot survive burial. However, as Belnap (2002 and 2005 and BLM 2001) noted, the hot desert crusts are simple crusts that are highly mobile and quick to recover from disturbance. The large, filamentous cyanobacteria can move 5mm per day if it is wet (Belnap 2003 and BLM 2001). Although rain and moist soils occur at the start of the grazing season, grazing in the later part of the spring can reduce the cover of biological crusts because the soils are dry. These simple crusts would likely recover within days once the rain returns because the crusts are simple to nonexistent, Site recovery, outside of congregation areas should be such that the impact would not be substantial (BLM-TR 1730-2 2001).

Designation of routes as transportation linear disturbances, particularly routes experiencing moderate to intensive use, and elimination of grazing allotments with intensively used areas, would allow soils to gradually recover, and therefore have a beneficial impact on soil resources. Rehabilitation of other intensively disturbed areas, such as historic mining sites, can also allow soil recovery. Active restoration, including de-compaction by raking or other mechanical means, can speed this process.

Past present and authorization for reasonably foreseeable projects and/or new land-uses, particularly for large facilities, new access routes, and development of additional livestock watering and holding facilities or other intensive use sites, contribute to cumulative impacts from soils--compaction, mechanical displacement, removal of vegetation or crusts that stabilize surficial soils and resulting decreased water infiltration rates and soil moisture content, increased potential for wind and water erosion, dust deposition downwind of routes, and changes to soil chemistry. Large facility authorizations include measures to mediate potential impacts from

wind and water erosion, and off-site dust deposition. Upon termination, other soil impacts are addressed through specific site rehabilitation strategies. However, the potential cumulative impacts to soil from past, present and reasonably foreseeable projects is far less than the directly impacted acreage (approximately 21,870 acres) in the WEMO planning area. Projects that utilize existing disturbed areas in conjunction with mitigation and minimization measures were not considered to have any substantial cumulative impacts with the WMRNP. Thus, these projects are not analyzed in Table 4.15-7.

Overall, soil standards are being met on public land in the OHV Limited Access Areas where routes are being designated based on the Rangeland Health (43 CFR 4180) assessments that have been conducted throughout the planning area. While these assessments are limited to grazing allotments, they cover a wide diversity of the geologic substrates, soils, and plant communities in the planning area. These assessments demonstrate that soil impacts are linked to the intensity of disturbance as well as underlying geology, soil types, and local conditions. Intensely disturbed areas within OHV Limited Access Areas, such as the areas at or associated with livestock watering facilities or holding corrals and communication sites (very small), OHV Open lakebeds (moderately sized), and construction sites on public lands (small to very large), contribute to localized adverse impacts. Given the relative lack of disturbances in areas closed to OHV use, soil standards are being met on these public lands, and localized adverse impacts are small. Open OHV areas, particularly those that are not underlain by coarse, sandy soils, contribute substantially to the overall adverse soil impacts in the planning area due to the intense level of OHV use over relatively small areas. In addition, support areas such as staging areas, pit areas, viewing areas, and parking for event participants and viewers are compacted.

The significance of the impacts on soil resources differs depending on whether impacts occur in close proximity to sensitive resources, location relative to sensitive populations, and the intensity of use. Compaction and erosion that adversely affects vegetation would be more or less significant depending on the presence or absence of sensitive plant species, unusual plant assemblages, or riparian areas. Increased introduction of sediment due to water erosion would be more or less significant depending on the proximity to surface water bodies or aquatic resources. Increases in PM₁₀ emissions due to wind erosion can have regional effects, and would not be limited to the local area.

The designation of specific routes as part of the transportation network under the WMRNP alternatives would affect the overall mileage of routes on which OHV use is allowed, as well as identifying specific locations for OHV Open and OHV Limited routes and routes designated as transportation linear disturbances. These designations also result in different intensities of use on the alternative network, based on the overall OHV use being constant between alternatives.

Of the five alternatives evaluated in this SEIS, Alternative 3 would result in the largest route network and therefore would contribute to adverse cumulative impacts to geology, soils, and water over a greater previously disturbed area by maintaining more OHV Open and OHV Limited routes, including routes within close proximity to riparian areas and in areas prone to soil erosion. Some routes in the network would experience more intensive use while others would experience less intensive use. Minimization and mitigation measures would reduce, but not eliminate, impacts from routes in proximity to riparian areas and from stopping, parking and camping adjacent to routes. Overall, the intensity of use on the network routes under Alternative 3 would be substantially reduced due to the overall mileage available. Alternative 2, by designation of the largest mileage of routes as transportation linear disturbances and applying the

most restrictive minimization and mitigation measures, would result in a decrease in the areas disturbed and therefore soil impacts, including to routes within close proximity to riparian areas and in areas prone to soil erosion. In areas where OHV Open and OHV Limited routes exist, the contribution of Alternative 2 to cumulative geology, soils, and water impacts would still be adverse. Intensity of use on the remaining Alternative 2 network is anticipated to increase, particular adjacent to communities and on the routes to OHV areas and other accessible popular areas and locations.

Under all alternatives, livestock grazing on West Mojave allotments would continue to have a localized, negative affect on soils associated with congregation areas such as watering sites, and corrals through soil compaction caused by the concentration of livestock in a localized area. Soil compaction results in accelerated erosion by allowing for rapid run-off of water because of the lack of infiltration, and impedes seed germination. These types of impacts do not occur or occur to a much lesser degree over the vast majority of soils on these allotments. These allotments would continue to achieve the soils standard concerning infiltration and permeability rates that are appropriate to soil type, climate and landform.

Any change in the total amount of OHV use, development of additional livestock watering and holding facilities, elimination of allotments, or other major surface disturbances and rehabilitation projects as a result of other Plans or proposals has the potential to have direct effects on soil resources, as well as resulting in indirect effects on air quality, water quality, stormwater flow, vegetation, and human health.

Under all alternatives, travelled network miles from OHVs are anticipated to continue at the same levels, regardless of the network adopted. Due to a larger network, more areas prone to high erosion would be available for public use under Alternative 3; due to the higher intensity of use, more wind erosion and associated soil impacts may be anticipated from Alternative 2, particularly close to communities and popular OHV areas. Overall, the relative contribution of the travel management strategies proposed under Alternative 3 are anticipated to be somewhat higher than for the other alternatives. Rehabilitation is proposed to continue to be pursued as a key implementation strategy under all alternatives. Considered together with other programs and projects and with the strategies to restore disturbed areas in the WEMO Plan, the cumulative effects on soils of the alternative plan amendment decisions, network frameworks, route designations, and other implementation strategies are anticipated to be nominal.

Table 4.15-7. Soil Cumulative Impacts WEMO Planning Area Projects

Project Name	Total Acres of Disturbance
West Mojave Route Network Project (Baseline) (EIS) includes Restoration EAs	21,870
Haiwee Dam (EIS)	2

Water and Water Quality

Urbanization and development in the high desert have resulted in depletion of surface and groundwater over the last century. Recently, depletion of some of the aquifers in the high desert

appears to be accelerating, while other aquifers away from developed areas appear to be stabilizing. Agricultural land uses have been declining in part in response to drought and water supply issues, but urban development continues to occur, including adjacent to waters. There is also some level of “de-watering” associated with providing drinking water to livestock along with the wildlife usage from springs with finite sources. Spring waters may be affected by various anthropogenic sources and natural events, such as minor earthquakes.

Water quality impacts associated with urban development and agricultural use, including livestock, are primarily associated with increases in sediment released to surface water bodies by stormwater soil erosion. There also occurs a substantial amount of naturally occurring sediment in desert ephemeral waters as a result of ongoing geologic processes. In general, increased stormwater soil erosion is an indirect effect of soil resource impacts discussed in Section 4.3.1.

The compaction of soils associated with development and agricultural use can lead to increased soil stormwater runoff rates which, in turn, can increase erosion potential. In addition, development and livestock use can de-compact soils or otherwise remove vegetation, crusts, or other stabilizing features that protect soil from erosion or mediate erosional effects. These effects are exacerbated when the disturbance occurs directly in, or adjacent to, flowing streams or ephemeral desert washes.

Native wildlife and livestock use at undeveloped springs and creeks can also result in the release of fecal coliform into natural water sources. Most developed water sources have been fenced and the water piped to a trough to protect the sources from livestock impacts to soils and vegetation, and to limit the release of fecal coliform. However, the sampling of chemical constituents is typically not occurring during the PFC process, so the direct impacts from livestock grazing is not known. Unidentified levels of fecal coliform contamination are probable, both from wildlife and from livestock. Most of the developed spring sources are protected from substantial levels of contamination from livestock by fencing or natural/man-made features where water is then piped to a trough. Overall, impacts to water quality from livestock grazing at protected spring sources is considered nominal because spring sources are protected from direct access by livestock.

Pipelines crossing through the desert carry significant amounts of oil and gas to and from Southern California and points north and east. Loss of minor amounts of fuel during testing and replacement activities, and more significant amounts during pipeline breakages, can have adverse impacts on waters in the region. Significant pipeline breakages can occur, particularly in association with development activities and earthquakes. More nominal leakage occurs in conjunction with erosion of pipeline integrity. Sophisticated testing techniques now limit the extent of leakage from normal wear and tear.

OHV use results in similar increases in sediment load resulting from compaction and erosion which are exacerbated when the disturbance occurs directly in, or adjacent to, streams and ephemeral washes, as well as when the use occurs in areas that already are experiencing naturally or anthropogenic increased erosion potential.

OHV use on the transportation network also requires the use of petroleum fuels which, if released, can impact surface water or groundwater quality. OHVs generally carry very limited volumes of these fuels, so the threat to water quality is minor. Fueling is generally done at commercial service stations, which have precautions in place to avoid fuel releases. In some cases, such as organized events, fueling of OHVs can be done from small containers or tanks

carried by trucks. In these cases, the types of precautions available at commercial fueling stations would not be in place, but siting away from waters and areas with high erosion potential mediates potential impacts, and the volume of fuel handled is still expected to be limited.

Due to a larger network, more routes prone to high erosion and sedimentation would be available for public use under Alternative 3; due to the higher intensity of use close to communities and popular OHV areas, more routes prone to high erosion and sedimentation will be available for public use under Alternative 2. Overall, the relative impacts of the travel management strategies proposed under Alternative 3 are anticipated to be somewhat higher than for the other alternatives based on the number of routes in the vicinity of riparian areas. Protection and rehabilitation measures are proposed as a key implementation strategy under all alternatives, with emphasis on sensitive areas, including areas potentially affected by sensitive water resources.

Implementation of minimization measures, including the WEMO Plan Conservation Measures and ACEC measures, on the other hand, may mediate erosion potential in sensitive areas with high slopes and adjacent to streams and ephemeral washes, both as a result of designation of routes as transportation linear disturbances and rehabilitation activities, as well as specified riparian and spring enhancement projects. Other major projects may create the potential for sedimentation from stormwater runoff. The 2016 DRECP LUPA, in directing development projects to some areas and away from other areas, is anticipated to exacerbate increased erosional potential in areas already experiencing development pressures. Associated stormwater plans associated with such development projects are approved by the regional water quality control board under authority of the Clean Water Act, and mediate and localize such effects.

Basic water quality monitoring was being conducted as part of the BLM's Proper Functioning condition (PFC) assessments process (TR 1736-16) at spring sources located on West Mojave allotments to monitor water quality and function. Through the PFC assessments process, natural water sources available to livestock have been evaluated for all threats to water quality and riparian values, including anthropogenic and natural threats. The appropriate management action(s) would be implemented based on the source(s) of the threat and other specifics of the situation; these management actions may include, but are not limited to, fencing, placement of additional troughs, limitations on the use of the access route, and re-design of the facility.

A program-wide water quality monitoring program is also under development for West Mojave allotments. Best Management Practices (BMP) for water quality are being developed for public lands in California, including the California Desert District (CDD) and would be adopted upon approval. Regional Rangeland Health Standards, which include a standard for water quality, have not yet been approved by the Secretary of Interior for the CDD which include the allotments being analyzed in this document.

The BLM is currently consulting with the Lahontan Regional Water Quality Control Board to develop a Management Agency Agreement (MAA) for non-point sources on public lands to address water quality issues. Upon agreement by both agencies, relevant portions of the Management Agency Agreement would be incorporated into activities directed by the BLM, including the grazing leases, to address any remaining water quality issues or conflicts.

Considered together with other programs and projects and with the strategies to restore disturbed areas in the WEMO Plan, the cumulative effects on waters of the alternative plan amendment decisions, network frameworks, route designations, minimization measures, and other

implementation strategies are anticipated to be nominal. Impacts to groundwater aquifers and regional water quality on a cumulative level are similar under all alternatives.

General Cumulative Impacts to Biological Resources

Cumulatively, impacts to biological resources may result from anthropogenic factors that directly or indirectly adversely affect habitat or result in direct loss of individuals, or from natural factors, including drought events, fire, predation and disease. Multiple factors may work together to accentuate adverse impacts to particularly vulnerable species. Major sources of habitat disturbance in the region include urban development, large linear infrastructure projects such as for highways, railways, and utilities, major renewable energy and mining projects, regional landfills, wildfire, and livestock grazing. These threats are discussed in detail in Appendix J of the 2006 WEMO FEIS. A general overview of cumulative impacts to special status species for the No Action and Alternatives 2, 3, 4, and 5 are shown in Tables 4.15-8 through 4.15-12. These tables exhibit the varying levels of existing disturbance that would be utilized within special status species habitat or occurrence areas within the WEMO Planning Area. The percent of habitat disturbance differentiates the cumulative impacts between alternatives. Desert tortoise is cumulatively impacted by 0.5 percent more in Alternative 3 as compared to Alternative 5 (Proposed Action). Mojave fringe-toed lizard is cumulatively impacted by 0.1 percent less in Alternative 2 as compared to Alternative 5. Lane Mountain milkvetch is cumulatively impacted by 0.3 percent less in Alternative 5 as compared to the No Action Alternative. There is a general trend among special status species that exhibits Alternative 5 having less cumulative impacts than Alternative 3, and similar impacts compared to Alternative 2 and the No Action Alternative. Thus, it can be concluded that the cumulative impacts are generally the same for all Alternatives with the exception of being slightly higher in Alternative 3.

Table 4.15-8. Special Status Species Cumulative Impacts – No Action Alternative

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
Alkali Mariposa Lily (CNDDDB)	3.3	0.0	0.00
Bakersfield Cactus (CNDDDB)	1.1	0.0	0.00
Barstow Woolly Sunflower (CNDDDB)	4,279.0	13.4	0.31
Beaver Dam Breadroot (CNDDDB)	7,321.0	38.6	0.53
Big Bear Valley Woollypod (CNDDDB)	741.0	4.7	0.64
Boyd's Monardella (CNDDDB)	53.3	0.3	0.51
California Alkali Grass (CNDDDB)	139.0	1.1	0.79
Chaparral Sand-verbena (CNDDDB)	1.0	0.1	12.77
Charlotte's Phacelia (CNDDDB)	1,119.0	3.9	0.35

Table 4.15-8. Special Status Species Cumulative Impacts – No Action Alternative

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Chimney Creek Nemacladus (CNDDDB)	6.0	0.0	0.00
Clokey's Cryptantha (CNDDDB)	1,942.0	6.4	0.33
Creamy Blazing Star (CNDDDB)	5,734.0	26.7	0.47
Curved-pod Milk-vetch (CNDDDB)	182.0	3.6	1.96
Cushenbury Buckwheat (CNDDDB)	1,184.0	1.7	0.14
Cushenbury Milk Vetch (CNDDDB)	994.0	1.0	0.10
Cushenbury Oxytheca (CNDDDB)	83.2	0.0	0.00
Death Valley Sandpaper Plant (CNDDDB)	1,425.0	9.9	0.70
Dedecker's Clover (CNDDDB)	29.0	0.0	0.00
Desert Cymopterus (CNDDDB)	3,380.0	4.3	0.13
Gilman's Goldenbush (CNDDDB)	5.0	0.0	0.00
Grey-leaved Violet (CNDDDB)	30.0	0.2	0.52
Hall's Daisy (CNDDDB)	65.0	0.0	0.00
Harwood's Eriastrum (CNDDDB)	79.0	0.2	0.20
Horn's Milk-vetch (CNDDDB)	195.0	2.0	1.04
Kelso Creek Monkeyflower (CNDDDB)	651.0	4.0	0.62
Kern Buckwheat (CNDDDB)	23.0	0.7	3.01
Kern Plateau Bird's Beak (CNDDDB)	27.0	0.0	0.00
Kern River Evening Primrose (CNDDDB)	12.0	0.3	2.77
Lane Mountain Milk Vetch (CNDDDB)	2,004.0	8.2	0.41
Latimer's Woodland Gilia (CNDDDB)	213.0	1.8	0.83
Little San Bernardino Mountains Linanthus (CNDDDB)	297.0	3.1	1.06
Mojave Menodora (CNDDDB)	44,327.0	102.7	0.23
Mojave Monkeyflower (CNDDDB)	2304.0	17.6	0.76

Table 4.15-8. Special Status Species Cumulative Impacts – No Action Alternative

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Mojave Tarplant (CNDDDB)	81.0	0.2	0.22
Muir's Tarplant (CNDDDB)	25.0	0.0	0.00
Ninemile Canyon Phacelia (CNDDDB)	246.0	0.0	0.00
Owen's Peak Lomatium (CNDDDB)	79.0	0.0	0.00
Owens Valley Checkerbloom (CNDDDB)	31,172.0	100.5	0.32
Pale-Yellow Layia (CNDDDB)	71.0	0.0	0.01
Palmer's Mariposa-lily (CNDDDB)	1,4841.0	17.4	0.12
Parish's Daisy (CNDDDB)	340.0	2.8	0.83
Parish's Phacelia (CNDDDB)	1,654.0	5.1	0.31
Red Rock Poppy (CNDDDB)	2,170.0	29.2	1.34
Red Rock Canyon Monkeyflower (CNDDDB)	1,680.0	13.8	0.82
Ripley's Cymopterus (CNDDDB)	389.0	0.0	0.00
Robbins' Nemacladus (CNDDDB)	661.0	0.0	0.00
Robison's Monardella (CNDDDB)	138.0	0.0	0.00
Rose-flowered Larkspur (CNDDDB)	481.0	0.0	0.00
San Bernardino Aster (CNDDDB)	153.0	0.0	0.00
San Bernardino Milk-vetch (CNDDDB)	1,689.0	0.0	0.00
Sanicle Cymopterus (CNDDDB)	389.0	11.1	2.85
Short-joint Beavertail (CNDDDB)	25.0	0.4	1.68
Sweet-smelling Monardella (CNDDDB)	52.0	0.0	0.00
Tehachapi Monardella (CNDDDB)	35.0	0.2	0.51
Triple-ribbed Milk-vetch (CNDDDB)	21.0	0.6	2.75
White-bracted Spineflower (CNDDDB)	996.0	2.5	0.25
White-margined Beardtongue (CNDDDB)	2,971.0	20.1	0.68

Table 4.15-8. Special Status Species Cumulative Impacts – No Action Alternative

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
Bendire's Thrasher (CNDDDB)	14,918.0	13.3	0.09
Bighorn Sheep (CNDDDB)	136,350.0	124.4	0.09
Burrowing Owl (CNDDDB)	1,857.0	2.8	0.15
Desert Tortoise (Total within Critical Habitat)	979,153.0	3084.4	0.32
Fringed Myotis (CNDDDB)	4.9	0.1	2.83
Gray Vireo (CNDDDB)	69.0	0.0	0.00
Least Bell's Vireo (CNDDDB)	1,469.0	6.9	0.47
LeConte's Thrasher (CNDDDB)	9,560.0	14.7	0.15
Mojave Fringe-toed Lizard (DRECP Model)	22,440.0	28.4	0.13
Northern Sagebrush Lizard (CNDDDB)	10.0	0.1	1.30
Pallid Bat (CNDDDB)	3,495.0	11.1	0.32
Southwestern Pond Turtle (Site Survey Data 1998)	0.6	0.1	22.79
Spotted Bat (CNDDDB)	3495.0	0.0	0.00
Swainson's Hawk	69.0	0.1	0.19
Western Mastiff Bat	3,495.0	5.0	0.14
Golden Eagle (4 Miles of active nests)	880,783.9	48.0	0.01
Mohave Ground Squirrel (Leitner 2008)	96,124.0	927.0	0.96

¹Total acres of disturbance is equal to existing disturbance from routes designated as Open/Limited and stopping/parking/camping (assuming 1% disturbance of total buffer)

Table 4.15-9. Special Status Species Cumulative Impacts - Alternative 2

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
Alkali Mariposa Lily (CNDDDB)	3.3	0.0	0.00
Bakersfield Cactus (CNDDDB)	1.1	0.0	0.00
Barstow Woolly Sunflower (CNDDDB)	4,279.0	6.9	0.16

Table 4.15-9. Special Status Species Cumulative Impacts - Alternative 2

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Beaver Dam Breadroot (CNDDDB)	7,321.0	37.5	0.51
Big Bear Valley Woollypod (CNDDDB)	741.0	4.7	0.64
Boyd's Monardella (CNDDDB)	53.3	0.3	0.51
California Alkali Grass (CNDDDB)	139.0	1.1	0.79
Chaparral Sand-verbena (CNDDDB)	1.0	0.0	0.00
Charlotte's Phacelia (CNDDDB)	1,119.0	6.0	0.53
Chimney Creek Nemacladus (CNDDDB)	6.0	0.0	0.00
Clokey's Cryptantha (CNDDDB)	1,942.0	8.6	0.44
Creamy Blazing Star (CNDDDB)	5,734.0	24.0	0.42
Curved-pod Milk-vetch (CNDDDB)	182.0	2.5	1.37
Cushenbury Buckwheat (CNDDDB)	1,184.0	1.7	0.14
Cushenbury Milk Vetch (CNDDDB)	994.0	1.0	0.10
Cushenbury Oxytheca (CNDDDB)	83.2	0.0	0.00
Death Valley Sandpaper Plant (CNDDDB)	1,425.0	8.0	0.56
Dedecker's Clover (CNDDDB)	29.0	0.0	0.00
Desert Cymopterus (CNDDDB)	3,380.0	3.0	0.09
Gilman's Goldenbush (CNDDDB)	5.0	0.0	0.00
Grey-leaved Violet (CNDDDB)	30.0	0.1	0.47
Hall's Daisy (CNDDDB)	65.0	0.0	0.00
Harwood's Eriastrum (CNDDDB)	79.0	0.1	0.17
Horn's Milk-vetch (CNDDDB)	195.0	0.0	0.00
Kelso Creek Monkeyflower (CNDDDB)	651.0	3.2	0.49
Kern Buckwheat (CNDDDB)	23.0	0.8	3.61
Kern Plateau Bird's Beak (CNDDDB)	27.0	0.0	0.00

Table 4.15-9. Special Status Species Cumulative Impacts - Alternative 2

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Kern River Evening Primrose (CNDDDB)	12.0	0.3	2.26
Lane Mountain Milk Vetch (CNDDDB)	2,004.0	5.3	0.26
Latimer's Woodland Gilia (CNDDDB)	213.0	0.1	0.07
Little San Bernardino Mountains Linanthus (CNDDDB)	297.0	4.0	1.35
Mojave Menodora (CNDDDB)	44,327.0	88.8	0.20
Mojave Monkeyflower (CNDDDB)	2,304.0	12.0	0.52
Mojave Tarplant (CNDDDB)	81.0	0.0	0.00
Muir's Tarplant (CNDDDB)	25.0	0.0	0.00
Ninemile Canyon Phacelia (CNDDDB)	246.0	0.1	0.06
Owen's Peak Lomatium (CNDDDB)	79.0	0.4	0.53
Owens Valley Checkerbloom (CNDDDB)	31,172.0	66.4	0.21
Pale-Yellow Layia (CNDDDB)	71.0	0.1	0.19
Palmer's Mariposa-lily (CNDDDB)	14,841.0	15.0	0.10
Parish's Daisy (CNDDDB)	340.0	2.4	0.69
Parish's Phacelia (CNDDDB)	1,654.0	4.8	0.29
Red Rock Poppy (CNDDDB)	2,170.0	13.4	0.62
Red Rock Canyon Monkeyflower (CNDDDB)	1,680.0	12.1	0.72
Ripley's Cymopterus (CNDDDB)	389.0	0.0	0.00
Robbins' Nemacladus (CNDDDB)	661.0	0.4	0.06
Robison's Monardella (CNDDDB)	138.0	0.8	0.60
Rose-flowered Larkspur (CNDDDB)	481.0	1.0	0.20
San Bernardino Aster (CNDDDB)	153.0	0.0	0.00
San Bernardino Milk-vetch (CNDDDB)	1,689.0	12.2	0.72
Sanicle Cymopterus (CNDDDB)	389.0	0.8	0.21

Table 4.15-9. Special Status Species Cumulative Impacts - Alternative 2

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Short-joint Beavertail (CNDDDB)	25.0	0.3	1.12
Sweet-smelling Monardella (CNDDDB)	52.0	0.0	0.00
Tehachapi Monardella (CNDDDB)	35.0	0.1	0.39
Triple-ribbed Milk-vetch (CNDDDB)	21.0	0.8	3.97
White-bracted Spineflower (CNDDDB)	996.0	3.2	0.32
White-margined Beardtongue (CNDDDB)	2,971.0	13.5	0.45
Bendire's Thrasher (CNDDDB)	14,918.0	14.9	0.10
Bighorn Sheep (CNDDDB)	136,350.0	89.5	0.07
Burrowing Owl (CNDDDB)	1857.0	2.5	0.13
Desert Tortoise (Total within Critical Habitat)	979,153.0	2502.2	0.26
Fringed Myotis (CNDDDB)	4.9	0.1	2.83
Gray Vireo (CNDDDB)	69.0	0.0	0.00
Least Bell's Vireo (CNDDDB)	1,469.0	3.1	0.21
LeConte's Thrasher (CNDDDB)	9,560.0	13.9	0.15
Mojave Fringe-toed Lizard (DRECP Model)	22,440.0	27.5	0.12
Northern Sagebrush Lizard (CNDDDB)	10.0	0.1	1.30
Pallid Bat (CNDDDB)	3,495.0	10.9	0.31
Southwestern Pond Turtle (Site Survey Data 1998)	0.6	0.1	22.79
Spotted Bat (CNDDDB)	3,495.0	0.1	0.00
Swainson's Hawk	69.0	0.1	0.19
Western Mastiff Bat	3,495.0	2.5	0.07
Golden Eagle (4 Miles of active nests)	880,783.9	35.4	0.00
Mohave Ground Squirrel (Leitner 2008)	96,124.0	517.9	0.54

¹Total acres of disturbance is equal to existing disturbance from routes designated as Open/Limited and stopping/parking/camping (assuming 1% disturbance of total buffer)

Table 4.15-10. Special Status Species Cumulative Impacts - Alternative 3

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Alkali Mariposa Lily (CNDDDB)	3.3	0.0	0.00
Bakersfield Cactus (CNDDDB)	1.1	0.0	0.00
Barstow Woolly Sunflower (CNDDDB)	4,279.0	11.2	0.26
Beaver Dam Breadroot (CNDDDB)	7,321.0	75.4	1.03
Big Bear Valley Woollypod (CNDDDB)	741.0	3.9	0.52
Boyd's Monardella (CNDDDB)	53.3	0.3	0.51
California Alkali Grass (CNDDDB)	139.0	1.1	0.79
Chaparral Sand-verbena (CNDDDB)	1.0	0.1	13.27
Charlotte's Phacelia (CNDDDB)	1,119.0	9.9	0.88
Chimney Creek Nemacladus (CNDDDB)	6.0	0.0	0.00
Clokey's Cryptantha (CNDDDB)	1,942.0	17.9	0.92
Creamy Blazing Star (CNDDDB)	5,734.0	36.4	0.64
Curved-pod Milk-vetch (CNDDDB)	182.0	5.5	3.02
Cushenbury Buckwheat (CNDDDB)	1,184.0	2.2	0.19
Cushenbury Milk Vetch (CNDDDB)	994.0	1.3	0.13
Cushenbury Oxytheca (CNDDDB)	83.2	0.0	0.00
Death Valley Sandpaper Plant (CNDDDB)	1425.0	25.2	1.77
Dedecker's Clover (CNDDDB)	29.0	0.0	0.00
Desert Cymopterus (CNDDDB)	3,380.0	3.6	0.11
Gilman's Goldenbush (CNDDDB)	5.0	0.0	0.00
Grey-leaved Violet (CNDDDB)	30.0	0.1	0.47
Hall's Daisy (CNDDDB)	65.0	0.0	0.00
Harwood's Eriastrum (CNDDDB)	79.0	0.1	0.18
Horn's Milk-vetch (CNDDDB)	195.0	2.4	1.22
Kelso Creek Monkeyflower (CNDDDB)	651.0	7.2	1.11

Table 4.15-10. Special Status Species Cumulative Impacts - Alternative 3

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Kern Buckwheat (CNDDDB)	23.0	0.9	3.86
Kern Plateau Bird's Beak (CNDDDB)	27.0	0.0	0.00
Kern River Evening Primrose (CNDDDB)	12.0	0.3	2.40
Lane Mountain Milk Vetch (CNDDDB)	2,004.0	7.6	0.38
Latimer's Woodland Gilia (CNDDDB)	213.0	1.6	0.77
Little San Bernardino Mountains Linanthus (CNDDDB)	297.0	5.8	1.97
Mojave Menodora (CNDDDB)	44,327.0	142.2	0.32
Mojave Monkeyflower (CNDDDB)	2,304.0	22.8	0.99
Mojave Tarplant (CNDDDB)	81.0	1.5	1.80
Muir's Tarplant (CNDDDB)	25.0	0.0	0.00
Ninemile Canyon Phacelia (CNDDDB)	246.0	0.1	0.06
Owen's Peak Lomatium (CNDDDB)	79.0	0.4	0.57
Owens Valley Checkerbloom (CNDDDB)	31,172.0	187.0	0.60
Pale-Yellow Layia (CNDDDB)	71.0	0.3	0.39
Palmer's Mariposa-lily (CNDDDB)	14,841.0	20.0	0.13
Parish's Daisy (CNDDDB)	340.0	2.8	0.83
Parish's Phacelia (CNDDDB)	1,654.0	14.7	0.89
Red Rock Poppy (CNDDDB)	2,170.0	50.5	2.33
Red Rock Canyon Monkeyflower (CNDDDB)	1,680.0	27.8	1.66
Ripley's Cymopterus (CNDDDB)	389.0	0.0	0.00
Robbins' Nemacladus (CNDDDB)	661.0	0.6	0.09
Robison's Monardella (CNDDDB)	138.0	2.4	1.76
Rose-flowered Larkspur (CNDDDB)	481.0	1.1	0.22
San Bernardino Aster (CNDDDB)	153.0	0.0	0.00

Table 4.15-10. Special Status Species Cumulative Impacts - Alternative 3

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
San Bernardino Milk-vetch (CNDDDB)	1,689.0	16.7	0.99
Sanicle Cymopterus (CNDDDB)	389.0	2.6	0.68
Short-joint Beavertail (CNDDDB)	25.0	1.1	4.59
Sweet-smelling Monardella (CNDDDB)	52.0	0.0	0.00
Tehachapi Monardella (CNDDDB)	35.0	0.1	0.42
Triple-ribbed Milk-vetch (CNDDDB)	21.0	0.9	4.08
White-bracted Spineflower (CNDDDB)	996.0	10.4	1.05
White-margined Beardtongue (CNDDDB)	2,971.0	26.9	0.91
Bendire's Thrasher (CNDDDB)	14,918.0	77.9	0.52
Bighorn Sheep (CNDDDB)	136,350.0	172.4	0.13
Burrowing Owl (CNDDDB)	1,857.0	2.9	0.16
Desert Tortoise (Total within Critical Habitat)	979,153.0	3625.0	0.37
Fringed Myotis (CNDDDB)	4.9	0.1	2.83
Gray Vireo (CNDDDB)	69.0	0.0	0.00
Least Bell's Vireo (CNDDDB)	1,469.0	9.2	0.62
LeConte's Thrasher (CNDDDB)	9,560.0	21.3	0.22
Mojave Fringe-toed Lizard (DRECP Model)	22,440.0	61.5	0.27
Northern Sagebrush Lizard (CNDDDB)	10.0	0.1	1.30
Pallid Bat (CNDDDB)	3,495.0	33.5	0.96
Southwestern Pond Turtle (Site Survey Data 1998)	0.6	0.1	22.79
Spotted Bat (CNDDDB)	3,495.0	0.4	0.01
Swainson's Hawk	69.0	0.8	1.20
Western Mastiff Bat	3,495.0	9.7	0.28
Golden Eagle (4 Miles of active nests)	880,783.9	84.5	0.01
Mohave Ground Squirrel (Leitner 2008)	96,124.0	1393.4	1.45

Table 4.15-10. Special Status Species Cumulative Impacts - Alternative 3

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
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¹Total acres of disturbance is equal to existing disturbance from routes designated as Open/Limited and stopping/parking/camping (assuming 1% disturbance of total buffer)

Table 4.15-11. Special Status Species Cumulative Impacts - Alternative 4

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
Alkali Mariposa Lily (CNDDDB)	3.3	0.0	0.00
Bakersfield Cactus (CNDDDB)	1.1	0.0	0.00
Barstow Woolly Sunflower (CNDDDB)	4,279.0	11.7	0.27
Beaver Dam Breadroot (CNDDDB)	7,321.0	39.0	0.53
Big Bear Valley Woollypod (CNDDDB)	741.0	2.1	0.28
Boyd's Monardella (CNDDDB)	53.3	1.0	1.82
California Alkali Grass (CNDDDB)	139.0	1.1	0.79
Chaparral Sand-verbena (CNDDDB)	1.0	0.1	12.77
Charlotte's Phacelia (CNDDDB)	1,119.0	4.4	0.39
Chimney Creek Nemacladus (CNDDDB)	6.0	0.0	0.00
Clokey's Cryptantha (CNDDDB)	1,942.0	8.3	0.43
Creamy Blazing Star (CNDDDB)	5,734.0	26.7	0.47
Curved-pod Milk-vetch (CNDDDB)	182.0	3.7	2.03
Cushenbury Buckwheat (CNDDDB)	1184.0	1.7	0.14
Cushenbury Milk Vetch (CNDDDB)	994.0	1.0	0.10
Cushenbury Oxytheca (CNDDDB)	83.2	0.0	0.00
Death Valley Sandpaper Plant (CNDDDB)	1425.0	13.7	0.96
Dedecker's Clover (CNDDDB)	29.0	0.0	0.00
Desert Cymopterus (CNDDDB)	3,380.0	3.4	0.10

Table 4.15-11. Special Status Species Cumulative Impacts - Alternative 4

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Gilman's Goldenbush (CNDDDB)	5.0	0.0	0.00
Grey-leaved Violet (CNDDDB)	30.0	0.2	0.52
Hall's Daisy (CNDDDB)	65.0	0.0	0.00
Harwood's Eriastrum (CNDDDB)	79.0	0.1	0.18
Horn's Milk-vetch (CNDDDB)	195.0	0.0	0.00
Kelso Creek Monkeyflower (CNDDDB)	651.0	4.3	0.66
Kern Buckwheat (CNDDDB)	23.0	0.8	3.61
Kern Plateau Bird's Beak (CNDDDB)	27.0	0.0	0.00
Kern River Evening Primrose (CNDDDB)	12.0	0.3	2.39
Lane Mountain Milk Vetch (CNDDDB)	2,004.0	7.6	0.38
Latimer's Woodland Gilia (CNDDDB)	213.0	1.8	0.84
Little San Bernardino Mountains Linanthus (CNDDDB)	297.0	3.1	1.03
Mojave Menodora (CNDDDB)	44,327.0	113.8	0.26
Mojave Monkeyflower (CNDDDB)	2,304.0	15.3	0.66
Mojave Tarplant (CNDDDB)	81.0	0.1	0.17
Muir's Tarplant (CNDDDB)	25.0	0.0	0.00
Ninemile Canyon Phacelia (CNDDDB)	246.0	0.0	0.00
Owen's Peak Lomatium (CNDDDB)	79.0	0.0	0.00
Owens Valley Checkerbloom (CNDDDB)	31,172.0	113.3	0.36
Pale-Yellow Layia (CNDDDB)	71.0	0.1	0.19
Palmer's Mariposa-lily (CNDDDB)	14,841.0	13.4	0.09
Parish's Daisy (CNDDDB)	340.0	2.0	0.58
Parish's Phacelia (CNDDDB)	1,654.0	16.0	0.97
Red Rock Poppy (CNDDDB)	2,170.0	24.8	1.14
Red Rock Canyon Monkeyflower (CNDDDB)	1,680.0	13.4	0.80
Ripley's Cymopterus (CNDDDB)	389.0	0.0	0.00

Table 4.15-11. Special Status Species Cumulative Impacts - Alternative 4

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Robbins' Nemacladus (CNDDDB)	661.0	0.0	0.00
Robison's Monardella (CNDDDB)	138.0	0.1	0.10
Rose-flowered Larkspur (CNDDDB)	481.0	0.0	0.00
San Bernardino Aster (CNDDDB)	153.0	0.0	0.00
San Bernardino Milk-vetch (CNDDDB)	1,689.0	9.4	0.55
Sanicle Cymopterus (CNDDDB)	389.0	0.6	0.14
Short-joint Beavertail (CNDDDB)	25.0	0.0	0.00
Sweet-smelling Monardella (CNDDDB)	52.0	0.0	0.00
Tehachapi Monardella (CNDDDB)	35.0	0.2	0.43
Triple-ribbed Milk-vetch (CNDDDB)	21.0	0.7	3.44
White-bracted Spineflower (CNDDDB)	996.0	3.5	0.36
White-margined Beardtongue (CNDDDB)	2,971.0	20.0	0.67
Bendire's Thrasher (CNDDDB)	14,918.0	25.9	0.17
Bighorn Sheep (CNDDDB)	136,350.0	142.3	0.10
Burrowing Owl (CNDDDB)	1,857.0	2.4	0.13
Desert Tortoise (Total within Critical Habitat)	979,153.0	2847.6	0.29
Fringed Myotis (CNDDDB)	4.9	0.1	2.83
Gray Vireo (CNDDDB)	69.0	0.0	0.00
Least Bell's Vireo (CNDDDB)	1,469.0	7.1	0.49
LeConte's Thrasher (CNDDDB)	9,560.0	16.8	0.18
Mojave Fringe-toed Lizard (DRECP Model)	22,440.0	31.3	0.14
Northern Sagebrush Lizard (CNDDDB)	10.0	0.1	1.30
Pallid Bat (CNDDDB)	3,495.0	8.9	0.25
Southwestern Pond Turtle (Site Survey Data 1998)	0.6	0.1	22.79
Spotted Bat (CNDDDB)	3,495.0	0.0	0.00
Swainson's Hawk	69.0	0.1	0.20

Table 4.15-11. Special Status Species Cumulative Impacts - Alternative 4

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
Western Mastiff Bat	3,495.0	7.0	0.20
Golden Eagle (4 Miles of active nests)	880,783.9	45.9	0.01
Mohave Ground Squirrel (Leitner 2008)	96,124.0	827.8	0.86

¹Total acres of disturbance is equal to existing disturbance from routes designated as Open/Limited and stopping/parking/camping (assuming 1% disturbance of total buffer)

Table 4.15-12. Special Status Species Cumulative Impacts - Alternative 5

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
Alkali Mariposa Lily (CNDDDB)	3.3	0.0	0.00
Bakersfield Cactus (CNDDDB)	1.1	0.0	0.00
Barstow Woolly Sunflower (CNDDDB)	4,279.0	10.6	0.25
Beaver Dam Breadroot (CNDDDB)	7,321.0	37.3	0.51
Big Bear Valley Woollypod (CNDDDB)	741.0	2.1	0.28
Boyd's Monardella (CNDDDB)	53.3	1.0	1.82
California Alkali Grass (CNDDDB)	139.0	3.6	2.59
Chaparral Sand-verbena (CNDDDB)	1.0	0.1	12.77
Charlotte's Phacelia (CNDDDB)	1,119.0	6.6	0.59
Chimney Creek Nemacladus (CNDDDB)	6.0	0.0	0.00
Clokey's Cryptantha (CNDDDB)	1,942.0	8.5	0.44
Creamy Blazing Star (CNDDDB)	5,734.0	26.7	0.47
Curved-pod Milk-vetch (CNDDDB)	182.0	2.8	1.56
Cushenbury Buckwheat (CNDDDB)	1,184.0	1.7	0.14
Cushenbury Milk Vetch (CNDDDB)	994.0	1.0	0.10

Table 4.15-12. Special Status Species Cumulative Impacts - Alternative 5

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Cushenbury Oxytheca (CNDDDB)	83.2	0.0	0.00
Death Valley Sandpaper Plant (CNDDDB)	1425.0	12.7	0.89
Dedecker's Clover (CNDDDB)	29.0	0.0	0.00
Desert Cymopterus (CNDDDB)	3,380.0	3.2	0.10
Gilman's Goldenbush (CNDDDB)	5.0	0.0	0.00
Grey-leaved Violet (CNDDDB)	30.0	0.2	0.51
Hall's Daisy (CNDDDB)	65.0	0.0	0.00
Harwood's Eriastrum (CNDDDB)	79.0	0.1	0.18
Horn's Milk-vetch (CNDDDB)	195.0	0.0	0.00
Kelso Creek Monkeyflower (CNDDDB)	651.0	4.4	0.68
Kern Buckwheat (CNDDDB)	23.0	0.8	3.59
Kern Plateau Bird's Beak (CNDDDB)	27.0	0.0	0.00
Kern River Evening Primrose (CNDDDB)	12.0	0.3	2.39
Lane Mountain Milk Vetch (CNDDDB)	2,004.0	7.6	0.38
Latimer's Woodland Gilia (CNDDDB)	213.0	1.9	0.90
Little San Bernardino Mountains Linanthus (CNDDDB)	297.0	3.6	1.22
Mojave Menodora (CNDDDB)	44,327.0	126.9	0.29
Mojave Monkeyflower (CNDDDB)	2,304.0	15.9	0.69
Mojave Tarplant (CNDDDB)	81.0	0.3	0.36
Muir's Tarplant (CNDDDB)	25.0	0.0	0.00
Ninemile Canyon Phacelia (CNDDDB)	246.0	0.1	0.06
Owen's Peak Lomatium (CNDDDB)	79.0	0.4	0.57
Owens Valley Checkerbloom (CNDDDB)	31,172.0	115.2	0.37
Pale-Yellow Layia (CNDDDB)	71.0	0.1	0.19

Table 4.15-12. Special Status Species Cumulative Impacts - Alternative 5

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance¹	Disturbance as Percentage of Total Habitat
Palmer's Mariposa-lily (CNDDDB)	14,841.0	14.7	0.10
Parish's Daisy (CNDDDB)	340.0	2.0	0.58
Parish's Phacelia (CNDDDB)	1,654.0	7.8	0.47
Red Rock Poppy (CNDDDB)	2,170.0	24.8	1.14
Red Rock Canyon Monkeyflower (CNDDDB)	1,680.0	10.3	0.61
Ripley's Cymopterus (CNDDDB)	389.0	0.0	0.00
Robbins' Nemacladus (CNDDDB)	661.0	0.4	0.06
Robison's Monardella (CNDDDB)	138.0	0.6	0.43
Rose-flowered Larkspur (CNDDDB)	481.0	1.1	0.22
San Bernardino Aster (CNDDDB)	153.0	0.0	0.00
San Bernardino Milk-vetch (CNDDDB)	1,689.0	10.1	0.60
Sanicle Cymopterus (CNDDDB)	389.0	0.6	0.14
Short-joint Beavertail (CNDDDB)	25.0	0.5	1.86
Sweet-smelling Monardella (CNDDDB)	52.0	0.0	0.00
Tehachapi Monardella (CNDDDB)	35.0	0.2	0.45
Triple-ribbed Milk-vetch (CNDDDB)	21.0	0.7	3.45
White-bracted Spineflower (CNDDDB)	996.0	4.7	0.47
White-margined Beardtongue (CNDDDB)	2,971.0	19.7	0.66
Bendire's Thrasher (CNDDDB)	14,918.0	26.2	0.18
Bighorn Sheep (CNDDDB)	136,350.0	147.2	0.11
Burrowing Owl (CNDDDB)	1,857.0	4.8	0.26
Desert Tortoise (Total within Critical Habitat)	979,153.0	3110.3	0.32
Fringed Myotis (CNDDDB)	4.9	0.1	2.83
Gray Vireo (CNDDDB)	69.0	0.0	0.00
Least Bell's Vireo (CNDDDB)	1,469.0	9.9	0.68

Table 4.15-12. Special Status Species Cumulative Impacts - Alternative 5

Species	Total Acres of Special Status Species on BLM-Managed Lands in WEMO Plan Area	Total Acres of Disturbance ¹	Disturbance as Percentage of Total Habitat
LeConte's Thrasher (CNDDDB)	9,560.0	17.6	0.18
Mojave Fringe-toed Lizard (DRECP Model)	22,440.0	29.0	0.13
Northern Sagebrush Lizard (CNDDDB)	10.0	0.1	1.30
Pallid Bat (CNDDDB)	3,495.0	5.9	0.17
Southwestern Pond Turtle (Site Survey Data 1998)	0.6	0.1	22.79
Spotted Bat (CNDDDB)	3,495.0	0.0	0.00
Swainson's Hawk	69.0	0.1	0.20
Western Mastiff Bat	3,495.0	7.5	0.22
Golden Eagle (4 Miles of active nests)	880,783.9	51.1	0.01
Mohave Ground Squirrel (Leitner 2008)	96,124.0	863.2	0.90

¹Total acres of disturbance is equal to existing disturbance from routes designated as Open/Limited and stopping/parking/camping (assuming 1% disturbance of total buffer)

Cumulatively, major actions that include enhancements for biological resources include lands being withdrawn from the land laws, ACECs and the strategies in ACEC Plans, the Fort Irwin lands that have been set aside for threatened and endangered species habitat since the approval of the 2006 WEMO Plan, and the 2016 DRECP LUPA strategies. In addition, Wilderness lands are a reservoir of low disturbed to undisturbed habitat and properly functioning conditions.

Major land acquisition and disposal activities initiated prior to 2006 WEMO have resulted in the transfer of lands with major effects to biological resources management, including major expansions to the Fort Irwin Army Training Center, a BLM Land Tenure Adjustment Program for DT ACECs and MGS habitat, major acquisitions of DT ACEC habitat by the State of California, large regional landfill exchanges and expansions, and a major exchange and donation program for Wilderness and other sensitive lands in the high desert.

Since WEMO, the expansion of the Twenty-nine Palms Marine Base and the Kern County Parks acquisitions are also underway. These cumulative projects are in addition to the other WEMO adopted strategies, which are summarized herein.

Direct mortality and loss of individuals also results from habitat disturbing projects and wildfire. The acquisition projects for military use and landfills may result in additional take of individuals. Landfills also attract predators which are another source of mortality to desert tortoise.

Habitat loss due to further development outside of ACEC, CDNCL, DT ACEC, national monuments, and MGS conservation areas would reduce populations of many common species,

and increase the relative abundance of other species that thrive in disturbed areas. Some development is also allowed within these conservation areas, but to a more limited degree than outside the conservation areas. Most conservation areas for listed and sensitive species either have adopted disturbance caps under WEMO, or are considering them; therefore most listed and sensitive species are adequately conserved, and therefore the cumulative impact would not be significant or adverse. Enhancements and mitigation offsets provided when listed habitat is disturbed also minimize adverse effects from projects to these sensitive species. The more common species would also thrive in conservation areas, and generally are present in abundance outside the WEMO Planning Area.

In arid rangelands, high stocking rates and low carrying capacity can result in native plant community shifts that favor unpalatable woody plants and the eventual loss of herbaceous native plant species and an increase in the density of non-native annual plant species. This loss could include special status plant species and riparian vegetation, both obligate and facultative. For most of the planning area, stocking rates have decreased, for some allotments substantially. Most riparian areas within grazing allotments have been fenced or grazing occurs outside the growing season. In addition, the WEMO Plan adopted a mechanism to eliminate grazing should carrying capacity not reach certain minimum thresholds, to assure adequate forage for both wildlife and grazing animals.

The 2016 DRECP LUPA included reallocation of forage from livestock to wildlife and watershed in various areas within WEMO. The reallocation of the forage to wildlife will assure the long-term availability of those lands to wildlife species.

Most of the planning area would not be affected by projects and would remain undisturbed for the RFF. The biological cumulative impacts from past, present and RFF projects, which are not anticipated to be adverse, are shown in Table 4.15-13. Major projects, such as large mines and renewable energy facilities may have localized impacts to sensitive resources. However, the acreage lost to those is small compared to the overall size of the planning area. The growth projections for urban development are focused adjacent to existing areas with greater disturbances and less public land, generally located outside of sensitive habitat areas. Many areas without water, utilities, or easy access would remain undeveloped, even from rural residences.

Areas of Critical Environmental Concern and Other Conservation Areas

Cumulative impacts to ACECs and other Conservation Areas from other present and RFF actions are negligible as compared to Alternative 5. Many of the identified present and RFF actions have no impacts to these resources, and those that do have impacts, those impacts are minimal (Table 4.15-13).

Table 4.15-13. Biological Cumulative Impacts WEMO Planning Area Projects with WMRNP Proposed Action

Project Name	Ground Disturbance within ACECs and Conservation Areas (acres)	ACECs and Conservation Areas within WEMO (acres)	Percentage of WEMO Area ACECs and Conservation Areas Impacted by Ground Disturbance
WMRNP Alternative 5 Open/Limited Routes	9036 ¹	2,376,583	0.38
WMRNP Alternative 5 Stopping/Camping/Parking	914 ²	2,376,583	0.04
Alta East	0	2,376,583	0.00
Desert Tortoise Translocation (USMC)	0	2,376,583	0.00
Path 46	2	2,376,583	0.00
Calico Peak 33K Pole Line	4	2,376,583	0.00
PG&E Hydrostatic Testing	27	2,376,583	0.00
Iron Age	16	2,376,583	0.00
Sydney Peak Stone	0	2,376,583	0.00
Rand Water Pipeline	0	2,376,583	0.00
Xpress West High Speed Rail Project	0	2,376,583	0.00

¹Total Mileage X 5280 Feet X 12 Feet (route width) X 0.00002

²Stopping/Parking/Camping Acreage X 0.01 (1% disturbance of total)

Riparian Habitat

Riparian habitat and springs can be particularly vulnerable to impacts as a result of disturbance or dewatering. As discussed in previous sections, these effects include erosion and resulting in increased sedimentation, loss of plant cover, water quality impacts, dewatering, as well as impacts to riparian-obligate wildlife and vegetation. If sensitive areas are not fenced out or otherwise modified for avoidance, activities such as upstream mining, direct use of water sources by water-rights holders, vehicle use, and cattle (as well as wildlife) grazing activities may (1) dewater riparian areas, (2) result in damaged, trampled and destroyed vegetation, (3) result in utilization of the riparian vegetation, and (4) impact water quality. These impacts result in a decrease in vigor or complete elimination of vegetation from the riparian habitat associated with spring sources, where otherwise vegetation would be robust and often unique to the wetter microclimate. Smaller spring sources are also impacted by livestock and wildlife hoof action

that typically creates divots known as “punching” in wet soils, can increase erosion, and can create poor water quality conditions.

The small riparian areas that are currently rated as non-functional or functioning at risk with a downward trend identified through the on-going PFC assessment process must over-time achieve the Rangeland Health Standard of Properly Function Condition. BLM’s riparian objective is to improve the conditions of these important, but limited riparian resources in the desert. Typical mitigation measures used to accomplish this objective include fencing, rerouting or avoidance, adding additional troughs, re-routing pipelines systems and placing shut-off devices (floats) within the water delivery system.

Selected riparian areas have been identified through project-specific and the on-going PFC assessment process for avoidance, fencing and other enhancements to maintain or improve riparian habitat conditions. Fencing has already been constructed to protect riparian habitat on most of the West Mojave allotments. Impacts described above still occur at livestock troughs but do not degrade the actual spring sources and the associated riparian habitat within the enclosure. A few areas have also been artificially enhanced to improve them as wetland and riparian sources for obligate species.

Another measure instituted to avoid or minimize impacts to springs is the prohibition of salt and/or mineral blocks within one-quarter mile of these springs, which would draw livestock towards the spring. Any riparian area, developed or undeveloped that exhibits a downward trend in condition would be targeted for mitigation such as fencing, based on on-going impacts or the potential for future impacts.

Upland Vegetation

The utilization by livestock, horses and other wildlife of upland vegetation for forage affects the vegetation in a number of ways. Key forage plant species for livestock consumption are palatable species that may be utilized frequently, when available, as forage. Grazing utilization measures the proportion of degree of the current years forage production that is consumed or destroyed by livestock (ITR-Utilization Studies 1996). Utilization of key species during the critical growing period, typically spring, may prevent formation of a seed-head and dissemination of seed. If this occurs year after year to the same population of forage species, a negative impact to recruitment occurs. If high levels of utilization occur to a given population of forage species, those plants have less leaf area to absorb sunlight, produce lower levels of carbohydrates, and expend a considerable amount of energy on re-growth. This type of scenario results in poor plant vigor, lower abundance, and poor age-class distribution. As previously mentioned, forage utilization, plant vigor, abundance and age-class distribution of key species are generally more intensely impacted around water sources or high-use facilities due to constant soil compaction from trampling and continual cropping of vegetation from cattle and horses. Impacts to resource conditions next to water developments are expected, and the area impacted will vary in size. These types of negative impacts have occurred in portions of West Mojave allotments where the Native Species Standard is not being achieved.

Areas that have been affected by other habitat disturbing factors are more vulnerable to impacts from livestock and vehicles. In particular, wildfire may result in closure of areas for multiple years to allow vegetative reproduction and return of native communities. Under cumulative effects, those areas identified as not achieving the Native Species Standard may be subject to a

livestock grazing deferment in the spring and fall grazing during the critical growing periods. BLM anticipates slow, but positive progress towards improvement of degraded native plant communities as a result of this corrective management action, and expects to reverse the downward trend in rangeland health. This deferment from grazing during the critical growing period for native species is anticipated to favor recruitment, vigor and enhance species diversity in native plant communities previously degraded by past grazing practices in portions of the allotment. Desert tortoises prefer certain native annual forbs over non-native annual forbs (Jennings 1997). BLM has not inventoried for these annual native species so their abundance on West Mojave allotments is unknown; however, under all alternatives native annual forbs located in the “deferment areas” would have the opportunity to germinate, grow and disseminate seed.

The additional changes in grazing practice as described in the 2006 WEMO Plan are anticipated to make positive progress toward achievement of the Native Species Standard by reducing the utilization thresholds from 40% to as low as 25% on select key species allotment wide which would allow for greater leaf area to absorb sunlight. This improves plant vigor and production, and reduces the contribution of grazing to vegetation impacts. There are two other grazing operational prescriptions contained in the 2006 WEMO Plan that would not authorize the ephemeral portion of the perennial/ephemeral authorization and would not authorize temporary non-renewable use, regardless of production. These provisions would further reduce use of forage species on the allotments in more productive years, providing for very high recruitment and increased vigor.

The 2006 WEMO grazing prescription that requires exclusion from portions of select allotments when ephemeral production is less than 230 lbs/acre has a beneficial impact to the vegetation that is excluded from grazing during those seasons. This would minimize impacts to reproduction and plant growth during these poorer production years. However, already stressed vegetation in portions of the allotment where grazing would be allowed may suffer from slightly higher levels of utilization, which in turn can mean lower or no reproduction and poorer plant vigor during those growing seasons, unless stocking rates are appropriately adjusted.

Natural climate fluctuations can also have a significant effect on desert vegetation, but not all desert natives are consistently affected by these fluctuations. Beatley (1980) concluded that most of the living plants in the Mojave Desert in 1963 were still present when she re-measured her plots in 1975. An additional 20-30% of the plants measured in 1975 were new, and total cover had increased as a result of high rainfall in the late 1960s. Beatley concluded that the size and cover of woody perennial plants in the Mojave Desert are strongly correlated with precipitation.

The period between 1975, when Beatley last measured the plots, and 2000 had several climatic extremes. The period of 1977-1984 was one of the wettest periods of the 20th century, and extreme droughts occurred in 1989-1991 (Hunter, 1994), 1996, and 1999. Many shrubs died during these years, making droughts a major mechanism for change in Mojave Desert ecosystems. Despite the droughts, the increase in biomass between 1963 and 2000 is striking. Associations dominated by creosote bush (*Larrea tridentata*) had large increases in the sizes of individual plants as well as increases in total cover. Some blackbrush assemblages, in contrast, lost total cover, probably as a result of the droughts, reflecting the significant differences in drought tolerance between various native species of the desert. Some non-native species such as brome (*bromus madritensis*, ssp. *Rubens*) can be extremely hardy during drought periods, and during those periods readily outcompete native species (Monitoring Of Ecosystem Dynamics In

The Mojave Desert: The Beatley Permanent Plots, USGS Fact Sheet 040–01, Webb, Robert H, et al.).

Special Status Plants

The WEMO Plan resulted in cumulative impacts, both positive and negative, to most of the sensitive plant species addressed in the Plan. The beneficial cumulative impacts include the establishment of large, unfragmented habitat blocks, strategies to protect public lands in those areas, measures to reduce tortoise mortality, measures to minimize disturbance impacts to conserved lands and measures addressing unique components of diversity, such as endemic species, disjuncts and habitat specialists.

Most special status plants are locally distributed in distinct areas, although new populations are occasionally identified. Generally projects are designed to avoid concentrations of these species. Mining projects have, in the past, adversely affected listed and sensitive species. Usually, the most sensitive areas are withdrawn or otherwise protected from these types of use. Based on BLM records, cattle grazing activities have not been identified as adversely affecting BLM special status plant species that are located within allotments, like the Mojave monkey flower, or Unusual Plant Assemblages (UPA). Areas identified for protection of special status plants do not authorize grazing, unless their distribution makes fencing impracticable. Cattle generally do not prefer to graze the Mojave monkeyflower or many of the other BLM special status plant species because they often occur in unique habitats, such as rocky, mountainous habitats, so the potential for grazing this species is low; however, livestock could potentially utilize and trample BLM special status plant species. Again, this potential is low because livestock are not concentrated where special status plant species populations exist.

Common Wildlife

Most wildlife species are mobile and can avoid being hit by vehicles or trampled by cattle. Some wildlife are generally taken in association with major construction projects or during prescribed burns and wildfire. Impacts to common wildlife from livestock grazing are typically indirect. Livestock may impact wildlife indirectly by modifying habitat on which wildlife depend. Livestock can modify habitat by disrupting soils and damaging vegetation. Soils are impacted through hoof shearing and by soil compaction. Vegetation can be removed if trampled or overgrazed. Impacts identified above typically occur near salt licks and watering holes where livestock congregate. Soil compaction typically occurs along cattle trails, however, this compaction is very localized and limited and the impact to common animals is generally negligible. BLM's enforcement of land health standards on this allotment will serve to ensure that adverse impacts to common wildlife are avoided.

Sensitive Wildlife Species

Direct cumulative impacts are not anticipated to occur to most sensitive wildlife; impacts primarily occur to wildlife habitat, as discussed above. The vast majorities of the sensitive wildlife species are mobile and can avoid being injured or taken, unless they occupy very specialized habitats. Although cattle degrade habitat, most impacts are localized. Therefore, grazing is not anticipated to directly impact sensitive wildlife species.

Desert bighorn sheep occupy specific areas during lambing, and at that time can be very sensitive to disturbance and noise. This factor is a consideration in siting of projects, and cumulative impacts are generally the result of casual uses or military overflights. Desert bighorn sheep do not typically occupy the same habitat as livestock, although they may share common watering holes. Ephemeral sheep operations are not authorized in allotments that contain occupied habitat for bighorn sheep. Cattle and horses generally inhabit alluvial fans and washes and extend into higher elevations on gentle, less rocky slopes than those preferred by bighorn sheep. Bighorn sheep and cattle primarily interact at water sources (Wehausen and Hansen 1986). A potential impact of this interaction could be the spread of diseases from cattle to bighorn sheep. The extent of this potential to spread disease and how it impacts the bighorn sheep population as a whole is unknown, due to small sample sizes in studies and the presence of other factors impacting the sheep populations.

The impacts of cattle grazing on bighorn sheep in the West Mojave allotments are considered minimal. If suitable habitat exists on an allotment, bighorn sheep have been observed grazing, bedding and watering with cattle. These observations indicate some level of compatibility. Many of the perennial water sources located on these allotments, both manmade and natural, are not utilized by Bighorn sheep because of the location on the landscape. The water sources utilized by Bighorn sheep and on occasion with cattle present are typically in mountainous areas that allow for escape cover.

The Mojave fringe-toed lizard occupies a special habitat niche that includes sand transport ecosystems in specified locations in the planning area, and therefore is a less mobile wildlife species, although there is evidence of movement between blowsand patches. Cumulative impacts are primarily the result of substantial habitat fragmentation particularly along the Mojave River, which constitutes approximately one-fourth of the occupied habitat and is primarily in private ownership. Other areas with potential habitat have been surveyed and several include occupied habitat sites. The WEMO Plan included strategies to protect habitat in 3 key areas that are known habitat for the species. Studies that are in progress at this time will provide additional information on species density and movement over time, and to what extent the species is impacted by OHV use.

Desert Tortoise

The 2006 WEMO Plan concluded that the newly established conservation areas established would cumulatively add to the existing conservation areas (1.15 million acres), resulting in greater protection of desert tortoise habitat. For the primary communities of this habitat, creosote bush scrub and saltbush scrub, the increased area in habitat conservation is 23-34 percent, just from the WEMO Plan, not including the subsequent habitat protection program on Fort Irwin lands. Most of the other species that are more localized in distribution similarly benefitted from the WEMO strategies, withdrawals, and disturbance caps.

The WEMO Plan's establishment of additional tortoise DWMA's (See Chapter 1 for a full discussion on DWMA's) is consistent with the approach taken elsewhere in the listed range of the desert tortoise, and together these strategies further enhance DT species habitat and recovery potential. WEMO implemented the tortoise Recovery Plan's recommendation that up to four tortoise DWMA's be established in the West Mojave Recovery Unit, and is consistent with the establishment of a total of 11 tortoise DWMA's between the BLM's NEMO and NECO plans and

that local government plans adopted in southern Utah and Clark County, Nevada. As a result, from a regional perspective, the WEMO Plan's tortoise conservation strategy was consistent with all applicable federal and local government plans.

To minimize impacts to the desert tortoise and its habitat, livestock grazing is deferred in portions of an allotment until after the critical growing period (March 1 to June 15) for both perennial and annual native species if the biomass production on annual vegetation is less than 230 lbs/acre under the WEMO Plan. If the annual ephemeral biomass is less than 230 lbs./acre cattle is excluded from portions (exclusion area) of an allotment while allowing graze to continue in other portions of an allotment. This management action is intended to benefit habitat quality for the desert tortoise over time by allowing for sufficient quality and quantity of forage species and thermal cover during the peak tortoise activity periods.

The exclusion of grazing from portions of a perennial allotment could increase grazing pressure in those portions of the allotment where grazing would continue. The impacts to desert tortoise habitat in areas where grazing would continue, may become higher. This would be a direct correlation to stocking rates. If stocking rates are low then impacts would be nominal, however, if stocking rates are increased, impacts to desert tortoise habitat could be substantial.

Deferment of grazing use during the critical growing period for native vegetation (habitat) in areas with degraded habitat quality, deferment in areas not achieving the native species standard, and limiting utilization levels allotment-wide are positive cumulative actions for improving desert tortoise habitat quality.

Grazing does not impede the movement, dispersal or gene flow of desert tortoise because neither livestock nor fencing represents a physical barrier to movement, and there is sufficient habitat inside and outside of allotments. However, livestock congregation areas (water sources, corrals) would not be conducive to tortoise burrowing, nesting, or over-wintering due to soil compaction at those sites. These sites are very localized and only represent a relative few acres out of the total acres of an allotment's critical and non-critical habitat within allotment boundaries. Desert tortoises have been documented occupying rock shelters in the lower elevations of mountainous terrain. These areas are generally too rocky for livestock presence.

Most project and other land-use authorizations, as well as grazing leases stipulate that the permittee or lessee and employees are required to report to BLM the sighting of any injured and dead desert tortoise. These reports are followed up by an investigation on the cause of injury or mortality. This requirement assists BLM and FWS in making a determination of direct impacts to the species and when reinitiation of formal consultation is required. In the course of annual rangeland monitoring, and project and allotment compliance checks, the monitoring for incidental take is conducted concurrently.

The November 2007 amendment to the January 9, 2006 Biological Opinion (1-8-03-F-58) contains an Incidental Take Statement (ITS) specifically calculated for livestock grazing operations in the West Mojave allotments. Since the issuance of the 2007 amendment there has been no documented or reported case of incidental take associated with livestock grazing.

The continuation of livestock grazing within some conservation areas would result in a cumulative effect to sensitive biological resources consisting of riparian habitat, upland vegetation and wildlife habitats, and similar effects outside of conservation areas. In both upland

and riparian habitats, livestock grazing utilizes native vegetation, both herbaceous and woody as forage.

The allocation of lands for different uses in the WEMO Plan and DRECP should not be considered as the final determination of land use for the planning area. It is rather a dynamic process of utilizing the best available science and land use planning to achieve conservation of species and communities identified to be in jeopardy. Technologies of the future can and are expected to alter provisions of the Plan to improve upon the implementation of its objectives.

Natural Communities

In the context of the entire Mojave Desert, the WEMO Plan connects to public lands in the Inyo, Sequoia, Angeles and San Bernardino National Forests. New conservation near the latter two Forests includes the linkage to the Poppy Preserve, the Big Rock Creek Conservation Area, and the Carbonate Endemic Plants ACEC. The linkages within Los Angeles County would prevent future isolation of the Poppy Preserve and Saddleback Buttes State Park. The WEMO Plan adjoins the Coachella Valley Multiple Species Habitat Conservation Plan near Morongo Valley, and land uses in this area are compatible with both habitat linkages and protection of species in common to the two plans (triple-ribbed milkvetch and Little San Bernardino Mountains linanthus). The WEMO Plan recognized the impacts from recreation and route designation to natural communities, and concluded that impacts of recreation and route designation to natural communities are primarily cumulative in nature. Some species are more sensitive to route specific impacts because of their very limited distribution. However, most of the more intensively used OHV Open areas are within the creosote bush scrub, desert wash and saltbush scrub communities. Riding on playas is also popular and may impact the adjacent alkali sink scrub vegetation.

Some potentially sensitive species in these intensively used areas are protected by fencing, and the size of the larger OHV Open Areas leaves some intact natural communities a large distance from heavily used staging and start areas. Areas adjacent to population centers are also more intensively used, and the problem is compounded by intensive use on adjacent private lands. In remote or mountainous areas, most travel is confined to roads, so that the woodland communities (Joshua tree woodland, scrub oak, pinyon pine woodland, juniper woodland) suffer relatively fewer direct vehicle impacts.

Outside of the OHV Open Areas, habitat fragmentation is an issue in other areas with a large number of routes, depending to some extent on the frequency of use. This fragmentation is exacerbated in areas with substantial route proliferation. Of the five alternatives evaluated in this SEIS, Alternative 3 would result in the greatest increase in OHV Open and OHV Limited routes within sensitive biological areas, and therefore would have the greatest potential for impacts to sensitive biological resources. No Action would result in the greatest potential impact to habitat outside of DT ACEC, and Alternative 3 would result in the greatest potential impact to habitat within DT ACEC, based on area-wide potential for disturbance.

Alternative 2, by designation of the largest mileage of routes as transportation linear disturbances and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to biological receptors over the long-term. All alternatives include an immediate strategy of signing routes designated as transportation linear disturbances and providing educational information for the public, which will result in a moderate level of

compliance of the route network. The rate of active designation of routes as transportation linear disturbances anticipated is similar for all alternatives, so active disturbances would not vary substantially by alternative in the RFF. Alternative 2 is anticipated to reduce and displace overall use to outside DT ACEC and MGS habitat to some degree, but is also likely to result in an increased intensity of use on the remaining network in these areas. Other alternatives are likely to change the balance between use and intensity in these sensitive areas. In other ACECs and CDNCLs, use and intensity of use is not anticipated to substantially change.

Where OHV use occurs, the contribution to cumulative biological impacts in sensitive areas would still be adverse. Providing additional opportunities in less sensitive areas and directing recreational and commercial activities to OHV Open Areas and the less sensitive areas mediates the cumulative impacts but does not eliminate them. When placed in context of other developments within the West Mojave, including land development, mining and recreational use of habitat lands, as well as the beneficial effects of WEMO management strategies, additional Wilderness designation, enhanced protection of sensitive habitat on Fort Irwin, and 2016 DRECP LUPA strategies, the reduction in surface disturbance by measures to manage, enforce, and restore routes impacting vehicle-sensitive species would be beneficial under all alternatives. In the long-term, Alternative 3 does not directly benefit the species in DT ACECs as well as No Action, which is an adverse impact to natural communities.

Invasive, Non-Native Species

Invasive species can occur as a result of direct spread of seeds, stressing of native habitat, and surface disturbance and loss of native vegetation, which facilitate the colonization of non-native invasive species over many native species. Natural wind conditions in the desert, non-native plantings, wildfire, vehicle use, and the presence of livestock and wildlife can directly spread the seeds of invasive species. Mechanisms for spread include airborne-spread of seeds, seeds sticking to vehicles or to the hides of animals, and deposition of seed through livestock and wildlife digestive systems (Belsky 2000). Historically, non-native plantings by rural residents and project managers, often as windbreaks, have been major contributors to non-native species spread. Current practices prohibit such plantings on authorized projects, but seeds may still be spread by the use of equipment and vehicles on site. Similar spread of seeds is associated with OHV use as described in previous sections. Wildfire continues to be a major source of introduction of non-native species. Post-fire rehabilitation efforts provide for some level of planting or seeding to encourage native species to more quickly be reestablished. Projects which authorize disturbances create conditions that can encourage invasive species. These species can then spread far beyond the project boundaries. These project impacts are minimized by the use of best management practices, such as specific plantings of native species, and treating weed populations with herbicide applications.

The extent to which poor grazing practices contribute to the spread of non-native invasive species on the West Mojave allotments is unknown. However, some grazing practices like overgrazing do reduce the diversity and reproductive abilities of these native, desert plant communities (Boarman 1999). This in turn promotes the establishment and spread of non-native invasive species that now occupy habitat once primarily inhabited by native species, because poor grazing practices degrade palatable native plant species, resulting in a reduction of its ability to reproduce, poor plant vigor, poor age class distribution and lower overall productivity.

This allows highly aggressive non-native herbaceous plants to invade habitat occupied by stressed native species or habitat once occupied by native species.

The West Mojave allotments that authorize year-long continuous use, often grazing the same area at the same time, year after year, may have contributed to a transition of the native herbaceous ground cover to invasive and non-native species over portions of the West Mojave allotments. This is also the case in areas that serve as corral facilities for livestock and wild horse and burro distribution and collection. The lack of periodic rest for native species in these areas contributes to habitat more vulnerable to invasion by non-natives. The palatability of non-native vs. native plant species to livestock varies based on the species and phenological stage. Overall livestock prefer native forbs over non-native forbs; however, non-natives forbs typically germinate earlier in the growing season and are generally grazed in an earlier phenology stage than natives which can in some years favor native forbs in the production of seed into the seed bank. Depending on density, the utilization of native forbs can be lower than utilization levels on non-native forbs because native forbs are most palatable when there is the highest level of forage diversity available to the cattle.

Grazing practices that allow for periodic recruitment opportunities commonly have lower densities of non-native species and are more compatible with sustaining native plant communities. Mitigation measures like the deferment of grazing in the spring and fall, strict compliance with the grazing prescriptions contained in the 2006 WEMO Plan, and the other grazing stipulations identified in that plan and in subsequent allotment-specific environmental assessments aid in improving native plant communities and in reducing the spread of non-native invasive species. The lowered utilization thresholds on key forage plants and other requirements should improve the overall trend of native plant communities. However, once such invasive communities get established, they can be very difficult to eradicate.

Overall, the current densities of non-native invasive species on the allotments being analyzed in this document is considered light to moderate based on ocular estimates. Annual fluctuations in densities are directly influenced by the amounts of late winter and/or early spring precipitation.

Socioeconomics

Cumulative socioeconomic impacts to the WEMO Planning Area primarily associated with urban development, infrastructure development, mining activities, and regional economic growth and activity. These impacts can be significant and are relatively unaffected by the specific routes and network alternatives in the WEMO Planning Area.

Local socioeconomic conditions, including employment rates, addition or loss of industries, military installations, and even single employers can impact the local or regional economies of San Bernardino, Kern, Los Angeles, and Inyo counties. Grazing is anticipated to continue at or below current stocking rates. These stocking levels are at their lowest point when compared to historic levels. Therefore grazing continues to have a nominal influence on local economies in the area.

The loss of a substantial portion of the Johnson Valley OHV Area could substantially impact individual businesses but is anticipated to have a nominal effect on the local economies in the surrounding areas. For areas that are more tied to tourism, impacts would be somewhat greater. Of the five alternatives evaluated in this SEIS, Alternative 3, by focusing on maximizing access to both recreational and authorized users, would have the greatest cumulative contribution to

socioeconomic impacts. Conversely, Alternative 2 would limit the areas in which recreation could occur, could restrict access to use of those areas, and could make it more difficult for authorized users to access their facilities. As a result, the contribution of Alternative 2 to cumulative socioeconomic impacts would be adverse, as compared to the No Action Alternative. However, overall, the route network and its associated goals, objectives, and minimization and mitigation measures on recreation and, to a lesser extent, on the ability of authorized users to access their facilities, have a nominal cumulative effect on socioeconomics regionally.

Recreation

Sources of impacts to recreation include conversion of recreational lands for other land uses, such as for military use, urban development, major projects that foreclose access, closure of lands to one or more recreational uses, and modification of lands which decrease its suitability for recreational pursuits. The 2006 WEMO Plan concluded that no significant cumulative impacts to recreation were to be expected. Historically over time, acreage available for OHV recreational opportunities in the WEMO Planning Area has been decreasing from a peak in the early 1970's until today, through a combination of urban and regional development and projects, designation of Wilderness and National Parklands, closure of other areas, and expansion of military installations.

These changes, taken together, have resulted in a significant reduction of the land available for OHV recreation in the WEMO Planning Area since the CDCA Plan was adopted. This loss was partially anticipated and offset in the CDCA Plan with the designation of OHV Open Areas, and subsequent additions to those areas had nominally increased that acreage prior to the most recent military expansion project. Non-motorized recreational opportunities have remained fairly constant, although substantial additional areas have been set aside by Congress that provide for exclusively non-mechanized use, such as designated Wilderness areas.

Prior to the signing of the WEMO Plan, lands north and east of Black Mountain were among those lands transferred by Congress to Fort Irwin. At the time of the WEMO Plan, it was unclear whether these lands would be completely foreclosed from recreational use. This area is now no longer available for OHV use. Recreational use of most of this area was never particularly high, so the scale of the displacement was relatively small compared to other closures. However, these lands were removed from major highways and population centers, and therefore offered a remote recreation experience that is no longer available. The military expansion also included the substantial portion of a series of dry lakes that were very popular for organized recreational land-sailing activities. Since the expansion, no major land-sailing organized events have been permitted in the area.

There are not major conflicts between authorized access routes and recreational access and uses. There are localized conflicts between recreationalists and campers related to the presence of cattle manure on or near allotment routes, especially near watering or corral facilities. A few authorized routes, particularly to mines which are regularly travelled by large mine trucks, exclude travel to the public for safety reasons. Other routes may limit public access to prevent vandalism of facilities. Permits to apiaries and livestock grazing may moderately increase the potential for conflicts with OHV riders, such as collision potential from high-speed riders with cattle or the harassment of cattle or bees by OHVs. The presence of authorized facilities is generally associated with authorized access for maintenance; and the need for continued

available access to these facilities may facilitate access by recreational users. Long-distance linear facilities, in particular, facilitate popular long-distance recreational access routes in the planning area.

As a result of the WEMO Plan, a large portion of the Rands ACEC and a few additional, relatively lightly used or small sensitive areas were also closed to OHV recreation. The permit system in the Rands mediated the closure to that area somewhat, but substantially constrained motor-vehicle based recreational activities. Stopping and parking constraints in WEMO further limited recreational opportunities in DT ACEC, particularly for those with secondary vehicles or large RVs.

Route designations in the 2006 Plan generally redistributed use from more sensitive biological areas for listed and certain other sensitive species to less sensitive biological areas. This has resulted in recreational four-wheel drive and motorcycle use that was shifted to some extent from more resource sensitive areas to less sensitive areas. These shifts generally were from more remote to less remote areas, or to more mountainous or steeper terrain within the planning area. This was anticipated to increase use in nearby OHV Areas, as well as pressures on the network located nearer to urban interface. As OHV recreational activities shift to the remaining OHV Open Areas or other lands that have flatter terrain outside of DT ACEC, additional conflicts with adjacent land owners are anticipated. Such conflicts already exist in heavily used areas south of the Stoddard Valley OHV Area. These lands include intermittent private lands that are both a source of impacts and receive impacts from trespassing.

Since the WEMO Plan, the impacts of other activities and land-use allocations on recreation, and OHV recreation in particular, have continued the historic trend of foreclosing opportunities. An additional military base expansion significantly reduced the available OHV Open Area acreage and the designation of additional Wilderness acreage together have resulted in approximately another 200,000 acres that are foreclosed from OHV recreation. The 2016 DRECP LUPA included additional restrictions on uses of public lands in various locations throughout the planning area. In particular, new conservation areas and additionally constrained areas will result in direct loss of access and fewer developments and activities in those areas that, over time, will result in less OHV use.

The impacts to recreation from these changes are somewhat mediated by the size of the planning area and the many recreational opportunities it provides. The impacts are exacerbated by the increasing pressure that a growing population and pool of OHV riders has created over time. Since 1980, population in the high desert has substantially increased, as has the demand for OHV recreation. Coupled with decreasing opportunities and the increasing demand, recreational impacts are considered to be cumulatively significant.

Of the five alternatives evaluated in this SEIS, Alternative 2 would have the largest overall adverse cumulative impacts to recreation because it would result in designation of the largest mileage of routes as transportation linear disturbances, and application of the most restrictive minimization and mitigation measures, including a more restrictive network in the DT ACEC than is currently in place. Areas previously accessible for non-motorized recreational pursuits from nearby trailheads or parking sites would become less accessible. The contribution of Alternative 2 to cumulative recreation impacts therefore would be adverse, as compared to the No Action Alternative. Conversely, Alternative 3 would be beneficial with respect to OHV recreation, as it would maintain the largest network of OHV Open and OHV Limited routes,

maximize access to non-motorized recreational areas, provide the most diverse recreational opportunities, and apply the least restrictive minimization and mitigation measures. Under Alternative 3, recreational opportunities would be more widely dispersed, and would include a balance of more remote and less remote opportunities for OHV recreation.

The No Action Alternative would have the largest adverse cumulative impacts to non-mechanized and non-motorized recreation, because no additional non-motorized routes, trailheads, or campsites would be offered. Campsites identified in existing ACEC Plans would be maintained. Alternative 3 overall provides the most opportunities for non-mechanized and non-motorized designated routes, but other alternatives also provide for a substantial range of these opportunities.

Depending upon the alternative, portions of the planning area are likely to see nominally less or more, or moderately greater recreational use, and overall recreational experience may be somewhat changed. Although a variety of routes and terrain are afforded by the route system, the opportunity to have a “remote experience” is expected to become increasingly difficult during the term of the project due to the cumulative effects of various constraints on remote access. However, the loss of recreation opportunity, together with the rapidly growing Southern California population and the anticipated continued growth in OHV recreation, would displace some visitors onto the smaller remaining BLM land base. The cumulative effect of this is likely to be an increase in impacts to these less remote areas, increasing conflicts in those areas, and the displacement of visitors seeking a remote experience to more remote regions such as the NEMO and NECO Planning areas or onto adjacent jurisdiction lands that are remote and remain accessible.

Livestock Grazing

The 2006 WEMO Plan concluded that several actions would contribute to an overall loss of land designated for livestock grazing that the BLM administers:

- **Fort Irwin Expansion:** The Fort Irwin expansion includes part or all of the Goldstone (100 percent or 9,726 acres), Superior Valley (42 percent or 69,328 acres), and Cronese Lake (<10 percent or 4,200 acres) allotments. Fort Irwin does not authorize grazing. The Goldstone allotment would be entirely unavailable for grazing and the portions of the Superior Valley and Cronese Lake allotment located on Fort Irwin would be unavailable for grazing. This would represent a total loss of approximately 83,254 acres of public land designated for livestock grazing.
- **Voluntary Relinquishment:** Since the 2006 WEMO Plan, some permittees or lessees have voluntarily relinquished their livestock grazing preference for certain allotments. This has resulted in a reduction in the livestock grazing available on public land administered by the BLM.
- **Losses of Ephemeral Sheep Grazing which occurred due to modified DWMA Boundaries and proximity to bighorn sheep locations:** Allotments affected include those located entirely within DWMA's, including Gravel Hills (130,075 acres), Superior Valley (the remainder or 95,738 acres), Buckhorn Canyon (4,730 acres), Stoddard Mountain West Unit (63,889) and Shadow Mountain (80 percent or 41,806 acres). Portions of other allotments, including Johnson Valley (109,186 acres), and the Stoddard Mountain East

Unit (82,681 acres) were also lost based on proximity to occupied bighorn sheep habitat. Portions of the Cantil Common, Monolith-Cantil, and Lava Mountain allotments that are not within DWMA were reduced as a result of the adoption of DWMA in the 2006 WEMO Plan.

Since adoption of the 2006 WEMO Plan, additional changes have taken place that have resulted in further losses of livestock grazing.

- The relinquishment of Lava Mountain and Walker Pass Common Grazing Allotments under the authority of the 2012 Appropriations Act (Public Law 112-74) and re-allocation of the 3,368 AUMs in these two allotments from livestock forage and use to wildlife and ecosystem functions;
- The 2014 National Defense Appropriations Act for the expansion of Twentynine Palms (MCAGACC) that resulted in the loss of 10,880 acres from the Ord Mountain Allotment.

In addition to the changes proposed in Chapter 2 (see Table 4.7-1 for summary), the cumulative effects of the implementation of the 2006 WEMO Plan are expected to reduce the size of the portion of the livestock industry centered on the use of BLM administered lands in the California Desert Conservation Area by approximately 465,871 acres. In addition, 119,940 acres were eliminated after the approval of the 2006 WEMO Plan through the two laws referenced above.

The 2016 DRECP LUPA analyzed and made changes to the Livestock Grazing Element objectives that affect allotments within the WEMO Planning Area, as outlined on page II.3-200 of the 2015 DRECP FEIS. These specific changes include:

1. Make Pilot Knob, Valley View, Cady Mountain, Cronese Lake, and Harper Lake allotment, allocations unavailable for livestock grazing and change to management for wildlife conservation and ecosystem function. Reallocate the forage previously allocated to grazing use in these allotments to wildlife use and ecosystem functions.
2. The following vacant grazing allotments within the CDCA will have all vegetation previously allocated to grazing use reallocated to wildlife use and ecosystem functions and will be closed and unavailable to future livestock grazing: Buckhorn Canyon, Crescent Peak, Double Mountain, Jean Lake, Johnson Valley, Kessler Springs, Oak Creek, Chemehuevi Valley, and Piute Valley.
3. Allocate the forage that was allocated to livestock use in the Lava Mountain and Walker Pass Desert allotments (which have already been relinquished under the 2012 Appropriations Act) to wildlife use and ecosystem function and eliminate livestock grazing on the allotments.

Under the other aspects of the WEMO Plan, as augmented by the subsequent allotment management plans, active grazing leases and permits would be renewed every 10 years, subject to additional consideration within 6 months of this Record of Decision. The terms and conditions contained in current grazing leases or permits would include the grazing prescriptions listed in the 2006 WEMO Plan, as well as other terms and conditions deemed necessary by the BLM Field Manager. These grazing prescriptions have eliminated ephemeral authorizations and temporary non-renewable (TNR) authorizations below 4,000 feet. They include key terms and conditions contained in previous grazing decisions related to cattle grazing in desert tortoise habitat. New range improvements or proposed changes in grazing management that would be

considered to be more than a minor change would require additional NEPA and ESA consultation.

Under the Proposed Action, livestock grazing would continue on the Ord Mountain Allotment located within the Ord-Rodman DT ACEC, with the additional mitigation measures for cattle grazing within a DT ACEC. These prescriptions ensure that there is sufficient forage available for tortoises to thrive and reproduce, and require that the grazing operation be consistent with recovery of the desert tortoise. The Ord Mountain Allotment and the associated grazing operation are not anticipated to be substantially impacted if required to exclude grazing from portions of the allotment in dry years (< 230 lbs/acre) for a three month period in the spring. The current grazing operation on this allotment has been substantially reduced in size and scope and this trend will continue into the foreseeable future.

Additional management actions in all allotments aimed at making positive progress toward achievement of the Native Species and Riparian/Wetland Rangeland Health Standards include deferment of grazing in specific portions of the affected allotments until summer and fencing off of spring sources, where feasible. There would be some additional cost to the lessees in terms of additional time and labor costs. It may take several years before improvement to native plant communities, in those areas deferred from grazing in the spring, can be detected.

There would be a positive, cumulative impact to grazing from the development of selected range improvements because these projects enhance livestock distribution and reduce grazing pressure in other portions of the allotments, including the allotments that contain critical habitat for the desert tortoise, and any areas in the allotments that currently are not achieving rangeland health standards.

The cumulative effects from all of these actions, including the WEMO Plan, allotment management plans, and the 2016 DRECP LUPA result in the following beneficial impacts to other resources: Air emissions, although minor from grazing operations would be reduced; impacts to soils from these operations, although confined, would be reduced; and any impacts to water quality from grazing operations would be reduced. Any long-term impacts to cultural resources that have not already been permanently compromised by grazing activities would cease to be impacted from these activities. The long-term impacts to native plant communities from nearly a century of livestock grazing would continue to be reversed, and the potential increase in non-native plant species from grazing in these allotments would be reduced. The long-term impacts to habitat for special status species and general wildlife within the allotment boundaries for the allotments would be beneficial. Impacts to recreation, ACECs, CDNCLs, national monuments, and Wilderness, although nominal would also be beneficial in most cases.

Generally, the cumulative effects of the plan amendment decisions, route designations and other past, present and RFF projects are nominal on grazing and would not have a substantial cumulative effect on grazing activities. As with recreation, the cumulative effects on grazing since the CDCA Plan was approved in 1980 are significant but are unrelated to travel access management strategies. There is one RFF project, currently known as XpressWest the preferred alternative transverse one grazing allotment within the WEMO Planning area. XpressWest would traverse 4.2 miles along the side of and 4.8 miles through this grazing allotment along an existing ROW on Highway I-15. This disturbance would occur within the median (preferred alternative) or directly next to the highway (within fencing) and is not anticipated to have any substantial impacts with the Stoddard Mountain grazing allotment.

On a more local basis, some network-wide minimization and mitigation measures and route designations may nominally affect grazing operations or require additional mitigation measures imposed on the grazing lessee. With respect to operation of the existing grazing allotments, Alternative 3 would have a beneficial impact by maintaining the largest mileage of OHV routes in allotments, which may be used by permittees and lessees to operate their allotments. Conversely, Alternative 2 would contribute, along with other actions which restrict OHV access or impact operations, to adverse cumulative impacts by reducing the mileage of routes available to operators, resulting in nominally higher operating costs. Generally, alternatives and minimization and mitigation measures are consistent with grazing operation goals to manage other use and users in their allotments, and therefore would be supportive of current best management practices.

Table 4.15-14. Grazing Cumulative Impacts WEMO Planning Area Projects

Project Name	Total Acres of Disturbance
West Mojave Route Network Project (Baseline) includes Restoration EAs	1,261,526
XpressWest	54 ¹

¹ Based on 9 miles of indirect disturbance

Energy Production, Utility Corridors, and Other Land Uses

Cumulative impacts to energy production have generally been beneficial. Prior to the recent solar and wind energy EIS and the 2016 DRECP LUPA, the CDCA Plan had targeted energy development in only two specific areas. Since that time, substantially more areas have been identified as suitable for energy development. Corridors for the transmission of energy and other utilities have remained fairly constant over time, but as needed, non-corridor areas have been authorized to transmit energy through the planning area.

The most substantial cumulative effects to other land uses have been to mining and mineral exploration. The 2006 WEMO Plan concluded that withdrawal of lands for resource protection would have at least a slightly negative impact on mineral development and other land uses. As with recreation and grazing, the cumulative impacts of closures since the original adoption of the CDCA Plan, including the 2006 WEMO Plan, are significant. As with recreation, some of the impacts from the CDPA designation of Wilderness were anticipated, and BLM recommendations on Wilderness factored into the assessments. However, actual Wilderness designations, expansions of National Park units, and expansions of military lands from Congress since adoption of the CDCA Plan as well as ACEC adopted or proposed mineral withdrawals, have substantially exceeded anticipated withdrawals in the CDCA Plan. Likewise, the cumulative availability of lands for exploration has been negatively impacted by the transition from “existing” routes to designated routes in the 2006 WEMO Plan. Exploration becomes cost prohibitive for most small miners if potential areas are too far from ground access points.

The alternatives proposed in this plan are not anticipated to substantially increase the negative impacts to mining or mineral exploration; however, Alternative 3 may moderately benefit mineral exploration. On a local scale, the effects of the designation of routes as transportation

linear disturbances under some alternatives may have a noticeable negative effect on a local level by increasing the mileage that miners and mineral explorers need to travel to reach their facilities or claims, or by placing time of day or seasonal restrictions on OHV access.

Overall, of the five alternatives evaluated in this SEIS, Alternative 2 would have the largest contribution to adverse cumulative impacts to other land users because it would result in designation of the largest mileage of routes as transportation linear disturbances, and application of the most restrictive minimization and mitigation measures. Conversely, Alternative 3 would be beneficial with respect to other land uses, as it would maintain the largest network of OHV routes, maximize access to other authorized land uses, and apply the least restrictive minimization and mitigation measures. On a site-specific basis, more limited access on some routes under this alternative may be consistent with the preferences of specific users and private landowners, who would desire to further restrict public access and uses. Generally, the contribution to cumulative effects from the WMRNP would be nominal. The WMRNP would not include any additional withdrawal of lands, and access to the WEMO Planning Area would be maintained, consistent with law, regulation, and policy.

Cultural Resources

Cultural resources are a finite and non-renewable resource so loss of the information they contain is a permanent loss for which there is no mitigation, restoration, or rehabilitation. 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 in 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.

In general, cultural resources have been adversely impacted over time by the implementation of the CDCA Plan, due to the limited cultural information that was available during the development of the plan, and the subsequent impacts of its implementation. However, the most well-known, important sites were recognized in the CDCA Plan, resulting in ACEC designations for cultural resources and management strategies to protect their significant resources. Other significant cultural resources have gained increased protection since the CDCA Plan as a result of major closures and Wilderness designations, but the overall scope of these beneficial impacts is unknown. Therefore, substantial loss of resources has occurred from planned actions as well as general strategies that provided for various authorizations and casual use activities.

Prior to the 1990s few authorizations required Class III surveys and mitigation as a standard measure prior to on-the-ground disturbance. Later authorizations have included such surveys and the results of these surveys serve as one of the primary cultural resource informational sources in the WEMO Planning Area. Two major land-exchange programs in the 1990s resulted in both beneficial and adverse impacts to cultural resources. Exchanges and acquisitions which resulted in protected Wilderness areas were beneficial. Other programs resulted in both beneficial and adverse impacts to resources, but the relative impacts, on balance, are unknown. Landscape level surveys have not addressed cultural resources that may be affected by these large programs or casual use activities.

The 2006 WEMO Plan concluded that cumulative public land impacts to cultural resources that would otherwise be significant would be mitigated through the Section 106 process. It was not clear whether the impacts of the plan would be beneficial or adverse, or how the Section 106 process would be utilized. Some of the impacts to cultural resources from the 2006 WEMO Plan would be beneficial. Area closures and withdrawals, and generally construction activities which restrict access or provide public information and keep the public on routes, would generally be beneficial. Ground disturbing activities are preceded by surveys and siting may be adjusted to protect cultural resources.

Some adverse impacts from the WEMO Plan may occur as a result of loss of resources that cannot be conserved. Land exchanges proposed in the WEMO Plan may have beneficial as well as adverse impacts, but are generally beneficial to cultural resources. Prior to exchange or sale out of public ownership, surveys are conducted and if significant resources are found, the affected lands may not be included in the exchange or disposal package unless management would be consistent with the protection of the resources. Land use allocation changes in general do not impact cultural resource protection. Authorized activities follow standard protocols regardless of location, and the land use allocation does not imply specific additional (or fewer) protections to cultural resources.

The 2006 WEMO Plan provided some limits on cultural resource impacts from the route network by eliminating the “existing routes” language, thereby clarifying the routes that would no longer be available for use, and which would no longer have impacts to cultural resources from casual use access. The overall degree of improvement is unknown, although decisions on specific routes did identify cultural resources as a factor for designation of routes as transportation linear disturbances. The impacts to known cultural resources from the designated WEMO network are unclear. Additional field work has been gathered for use in this planning effort and this information gathering continues. Two field teams have been engaged and are continuing this data collection, at substantial BLM expense. Even so, it is anticipated to take dozens of years for development of a comprehensive cultural data set.

Within the West Mojave Planning Area there are approximately 1,928,926 acres of public land authorized for livestock grazing. Of this total, active livestock grazing operations are continuing on approximately 928,597 acres in the WEMO Planning Area. The Supplemental Procedures for Livestock Grazing Permit/Lease Renewals: A Cultural Resources Amendment to the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer allowed 10 years to complete cultural resource surveys of the grazing allotments. The agreement “allows for renewal of an existing grazing lease or permit as long as Protocol direction, the BLM 8100 Series Manual guidelines (Protocol Amendment F), and specific stipulations are followed. Field surveys pursuant to the Supplemental Procedures for Livestock Grazing Permit/Lease Renewals: A Cultural Resources Amendment to the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer for the WEMO active allotments are nearly completed. Areas with natural water sources, fence lines, salt licks, and other cattle congregation areas were the main focus of these surveys. The results of the surveys will be analyzed in conjunction with activities proposed under the existing allotment management plans and associated NEPA compliance.

The opportunities for the public to view cultural sites in their natural surroundings have decreased over time, both as a result of closure of areas and of vandalism of important cultural sites. Significant vandalism can occur anywhere and maybe the result of one action, rather than

the result of cumulative effects, although vandalism likelihood increases in more accessible or more well-known sites. Tribal access is relatively unaffected by route designations, because accommodations are built into the designation mechanisms; and access to sacred sites is addressed with tribes on a location by location basis as is additional research with universities and other archaeological professionals if not anticipated at the time of designations.

Of the five alternatives evaluated in this SEIS, Alternative 3 would have the largest contribution to adverse cumulative impacts to cultural resources because it would result in maintaining the largest network of OHV Open and OHV Limited routes within close proximity to more identified cultural resources, and is estimated to result in more impact to unknown resources. Alternative 2, by designation of the largest mileage of routes as transportation linear disturbances and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to cultural resources. However, where OHV Open and OHV Limited routes exist, the contribution of Alternative 2 to cumulative cultural resource impacts would still be adverse.

A programmatic approach to Section 106 compliance for BLM routes of travel within this planning area has been developed in consultation with the California Office of Historic Preservation, the Advisory Council on Historic Preservation, and Tribal and agency partners. The approach includes on-the-ground evaluation of representative cultural resources as part of the analysis of impacts for the alternatives, and measures to address cultural sites that cannot be assessed in a timely manner. Additional on-the ground survey activities began in September 2014 with two field teams.

Visual Resources

Visual resources are generally a finite and non-renewable resource so loss of the scenic landscapes is a substantial loss for which there may be no mitigation, restoration, or rehabilitation. Some changes to landscapes become scenic landscapes over time, and there is substantial subjectivity in determining and assessing impacts to scenic landscapes. However, overall, impacts to landscapes are lessened when areas are closed or otherwise protected from disturbances, or when those disturbances are minimized.

The cumulative impacts to landscapes prior to the WEMO Plan are difficult to assess overall but included some substantial beneficial impacts as a result of designations and expansions of National Park Units, Wilderness, and area closures, as well as BLM strategies to consolidate public lands in less disturbed areas with more scenic vistas. The cumulative adverse impacts are not evenly distributed in the planning area, and are focused on the viewsheds around urban landscapes, from the freeway and highway corridors, and near the major utility corridors through the planning area, as well as the cumulative adverse impacts to viewsheds resulting from project-by-project additions throughout the planning area, some of which may be more or less noticeable on the landscape.

Generally the impacts of the 2006 WEMO Plan are beneficial to visual resources by further limiting ground disturbances and identifying areas for rehabilitation over time. In addition, withdrawals to areas for protection of species will also protect scenic landscapes over time. Significant ground disturbances that would substantially impact viewsheds are not proposed in the WEMO Plan. The 2016 DRECP LUPA is not anticipated to directly affect viewsheds, but

proposals for development and conservation areas will indirectly result in increasing potential impacts to some viewsheds and decreasing impacts to others.

The impact of the route networks evaluated in this SEIS to visual resources are primarily based on the designation of routes as transportation linear disturbances, which would allow routes to re-vegetate and resume their original appearance. Of the five alternatives evaluated in this SEIS, Alternative 3 would have the largest contribution to adverse cumulative impacts to visual resources because it would result in maintaining the largest network of OHV Open and OHV Limited routes, and would also apply the least restrictive minimization and mitigation measures in those areas. As a result, Alternative 3 would result in continued use of routes, which would not be allowed to re-vegetate, and which would continue to present adverse impacts to visual resources. Alternative 2, by designation of the largest mileage of routes as transportation linear disturbances and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to visual resources. However, where OHV routes exist, the contribution of Alternative 2 to cumulative impacts would still be adverse. Nevertheless, all routes designated as OHV Open are designated from the baseline inventory of existing disturbed routes. All projects that occur within the planning area must use routes from the existing disturbance inventory and any new disturbance requires mitigation at the appropriate NEPA level in accordance with the latest LUPA. Thus, cumulative impacts from OHV use are seldom to none with respect to any other NEPA projects that may take place in the WEMO Plan Area.

Special Designations

The CDCA Plan is the initial source of ACEC special designations in the BLM, as well as the source for initial recommendations for Wilderness that became Wilderness study areas. ACEC route designations and prescriptions serve as specified management actions that are more protective than the general multiple-use class guidelines given in the CDCA Plan. Over time, ACEC designations have been modified and, in general, more special designations have been added and additional measures have been developed in support of protection of the resources singled out in ACEC Plans, thus enhancing their protection.

Wilderness Study Areas (WSA), those areas not designated as Wilderness and not released from Wilderness study by Congress, are managed per the regulations and subsequent legislation, rather than as a result of the CDCA Plan. However, the CDCA Plan did become the basis for maintaining “existing” primitive trails in Wilderness Study Areas.

The 2006 WEMO Plan concluded that ACEC management of tortoise DWMA's would constitute a significant beneficial impact relative to BLM management under the current habitat classifications. It would augment and refine protection ostensibly provided by the critical habitat designation or MUC L guidelines, and provide a BLM LUP basis for evaluation of potential impacts that may not be foreseen at this time, including to sensitive resources other than desert tortoise. Other ACECs designated in the WEMO Plan accomplish the same purpose for the specific resources for which the ACEC has been established, and address the threats to those resources. Specified prescriptions strengthen protection in places where the BLM MUC guidelines do not address the resources or do not address them in a manner appropriate to the specific threats identified. Other resources in ACECs also generally benefit from or are unaffected by the strategies and specific measures identified for ACECs in the WEMO Plan. Since the WEMO Plan did not make location-specific on-the-ground commitments of resources,

other resources, if they may be adversely affected by measures, are evaluated prior to surface disturbance and may be mitigated or otherwise avoided.

The Ord-Rodman DT ACEC overlaps approximately 117,000 acres or 86 percent of the Ord Mountain grazing allotment. Specific relevant features that formed the basis for ACEC designation are the moderate to high densities of desert tortoise, the presence of critical desert tortoise habitat, and the potential of the area to support desert tortoise populations over the long-term. These factors met the importance criteria for ACEC designation because of the historic declines in desert tortoise populations and habitat throughout the southwest that eventually led to its listing under the Endangered Species Act.

Livestock grazing has historically been present in the Ord-Rodman DT ACECs for at least 50 years, and was present at the time of ACEC designation in 2006. At the time of designation, grazing use did not adversely affect the basis for which this area met relevance and importance criteria for ACEC designation, and a strategy to manage the presence of livestock for the RFF has been included in the WEMO Plan as a component of the ACEC Plan. In addition to the Ord-Rodman DT ACEC there are several other ACECs, both cultural and biological, co-located within West Mojave grazing allotments. In most cases, relevant and important resources have been protected from the impacts of grazing in key locations (e.g., fencing, exclosures, cattle guards, etc.) consistent with the ACEC Management Plans for each area.

The contribution of the alternative route networks evaluated in this SEIS to cumulative impacts to Special Designation areas would be partially related to the size of the route network within the designated areas, and somewhat related to the use of the network and parameters on stopping, parking and camping. Of the five alternatives evaluated in this SEIS, Alternative 2, by designation of the largest mileage of routes as transportation linear disturbances and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to Special Designation areas. However, where OHV Open and OHV Limited routes exist, the contribution of Alternative 2 to cumulative impacts would still be adverse. The relative impact of the other alternatives to ACECs and CDNCLs is highly dependent on the individual ACECs and CDNCLs.

With respect to identifying primitive trails that would remain available for use in designated Wilderness Study Areas, Alternative 4 has the greatest impact on WSA (i.e. the most primitive trails would remain), while Alternative 2 has the least impact on WSA (i.e., some of the “open” routes in the 2006 WEMO network would be designated as transportation linear disturbances in Alternative 2).

Wilderness

Wilderness designations have increased over time and as additional lands have been set aside; overall the Wilderness character of these lands have been enhanced. The WEMO Plan, in providing additional disturbance caps adjacent to some Wilderness and in reducing the level of OHV use of Wilderness areas, generally enhances the Wilderness character of Wilderness lands. Generally, adverse impacts to Wilderness values did not result from the 2006 WEMO Plan. The 2016 DRECP LUPA did not adversely affect designated Wilderness, and development focus areas would, overall, indirectly reduce viewshed impacts from Wilderness in areas with strict disturbance limit caps.

Under cumulative effects, the impacts to designated Wilderness areas within West Mojave grazing allotments from grazing would be the same as what occurred prior to the passage of the CDPA. Based on low livestock numbers and limited seasonal use due to the lack of water, the effects of grazing are not considered substantial enough to adversely affect the Wilderness character of the designated lands.

The reduction in the utilization thresholds on perennial forage to 25 percent during the growing season would be beneficial to the naturalness of the affected Wilderness areas by protecting the natural composition of vegetation communities. Due to the lack of developed or perennial water sources these Wilderness areas are primarily grazed in the winter/spring and typically with light stocking rates. There are currently very few range improvements in designated Wilderness; however, the development of future range improvements or the hauling of water in close proximity to Wilderness boundaries would increase the magnitude and duration of livestock grazing in Wilderness areas. Since range improvements are driven by available water sources, it is reasonably foreseeable that at least one Wilderness area may be impacted due to the location of suitable perennial water adjacent to its boundary. This may result in a nominal increased impact to naturalness and the opportunity for solitude when cattle are present. Impacts to Wilderness from the development of a new range improvement would be documented and analyzed in the project specific EA that would be prepared prior to the development of any proposed project.

In the Ord Mountain Allotment, the stipulation that requires a threshold of 230 lbs/acre ephemeral forage production or greater to authorize grazing in portions of the DT ACEC would also be beneficial to the naturalness of the portions of the affected designated Wilderness that overlap DT ACECs. The threshold would help protect native vegetation and consequently native wildlife by helping to prevent excessive use in dry years. During years when the threshold is not met, cattle would be substantially removed from the entire Rodman Mountains Wilderness areas from March 15th to June 15th. Wilderness visitors would have greater opportunity to experience an area without evidence of man during this time period.

For allotments that have been relinquished, or made unavailable to livestock grazing by the DRECP, the Wilderness areas would benefit due to the increases in naturalness discussed above. The naturalness of the areas would no longer be impacted by the presence of a non-native species (cattle). The opportunity to experience an area without evidence of man would not be impacted by the presence of cattle. The Wilderness character and the opportunity for solitude would not be affected by the sights and sounds associated with range improvement maintenance including occasional motorized equipment use in Wilderness. In addition, there would not be any future potential to graze cattle in the area and range improvements could be removed to improve the areas' naturalness and provide a greater opportunity to experience an area without evidence of man. These beneficial impacts are not considered substantial, because the impacts of grazing did not substantially adversely affect the Wilderness qualities at the time of area designations.

There are no direct impacts to Wilderness from the alternatives, and therefore no direct cumulative impacts. The indirect impact of the route networks evaluated in this SEIS to Wilderness are based on the designation of routes as transportation linear disturbances and parking areas along the boundaries of Wilderness, which would eventually allow routes to re-vegetate and resume their original appearance and thereby increase the viewsheds of the areas immediately within the boundaries of the Wilderness. These impacts are quite nominal; it is likely some footpaths or equestrian trails would remain to provide access and use to these

viewsheds. Of the five alternatives evaluated in this SEIS, Alternative 3 would have the largest contribution to adverse cumulative impacts to Wilderness because it would result in maintaining the largest network of OHV Open and OHV Limited routes in proximity to the boundaries of Wilderness areas. However, designated parking areas that may be identified under Alternative 3 may result in better focusing impacts and targeting education to specific trailheads and reducing impacts elsewhere. Alternative 2, by designation of the largest mileage of routes as transportation linear disturbances and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to Wilderness. However, where OHV Open and OHV Limited routes exist, the contribution of Alternative 2 to cumulative impacts would still be adverse.

Noise

The CDCA Plan did not explicitly address noise impacts, and noise impacts are difficult to address on a landscape level since the sources of noise are so diverse and measuring and enforcing noise impacts are difficult. Overall, large areas of the WEMO Planning Area are quiet because much of it is rural backcountry. Exceptions would be along busy, major freeway and highway corridors and within the Victor Valley urban area. However, a major significant source of loud intermittent noises occurs throughout much of the planning area—sonic booms that are the result of military fly-overs. A major strategy approved in the 1990s and implemented in the following fifteen years to enhance desert tortoise habitat, also indirectly facilitated continued noise impacts by providing for military overflights to continue unimpeded. This acquisition and exchange program consolidated and protected public lands with sensitive resources, and also prevented facilities that would extend into the airspace for these low-level military overflights.

The relative concentration of military overflights throughout the southern two-thirds of the planning area are the result of the location of four military facilities that “surround” the planning area within the east, west, and north-central areas of WEMO, and associated flight corridors between these bases and from these bases to other parts of Southern California and Nevada. No other noise approaches the decibel levels of intermittent noise that result from military overflights, and these noise levels are not substantially cumulative.

Other noises on public lands in conjunction with authorized activities are evaluated and addressed on a case-by-case basis. No general noise standards have been applied to all authorizations on public lands. The WEMO Plan did not explicitly evaluate or address this impact, but the general impacts of the WEMO Plan are anticipated to be beneficial in conservation areas, by further discouraging developments that result in off-site noises, and by constricting the route network and the relative number of noise sources. The 2016 DRECP LUPA supported the general direction of WEMO in reducing noise impacts in conservation areas, and potentially exacerbating them in some parts of the development areas.

Of the five alternatives evaluated in this SEIS, Alternative 3 would have the largest contribution to adverse cumulative impacts due to noise because it would result in maintaining the largest network of OHV Open and OHV Limited routes in close proximity to sensitive receptors and residences. Alternative 2 would result in the least adverse impact among the alternatives, as it would result in designation of the largest mileage of routes as transportation linear disturbances in close proximity to sensitive receptors and residences. However, Alternative 2 would result in the greatest impact from motorcycles, which is generally the loudest vehicle source of noise off-

route. Generally, intermittent noise impacts from OHVs is nominal, and the regulations limiting noise levels on motorcycles have resulted in a reduction in these impacts.

Travel and Transportation Management

In addition to public land transportation management, most adjacent jurisdictions have adopted transportation plans and route networks. Federal and state networks provide the backbone for all other transportation networks in WEMO, and both have responded to and shaped development patterns in the planning area. County Plans generally recognize County maintained roads and other relatively well used access routes that emanate from the federal and state roads and extend through and connect to local jurisdictional roads. The County General Plans include a transportation component that provides strategic transportation guidance. Local jurisdictions have adopted their own transportation plans that include the routes within their borders as well as limited strategies for future road developments and upgrades to serve their communities. Over time, these plans have responded to public demands, primarily focusing on needed upgrades and connectors between existing major routes, or to new community developments. A few routes that provide access to the major recreational destinations (OHV Areas) have also been singled out. Generally these local plans are not designed to restrict or direct access so much as to respond to access needs as they become evident.

The rest of the transportation network has primarily been overseen by federal agencies with the cooperation of other potentially affected jurisdictions. The military, Forest Service and National Park units have designated routes and route purposes for the networks on lands under their respective jurisdictions, within or adjacent to WEMO public lands. Their land management strategies, over time, have restricted and directed transportation access in significant ways.

On BLM lands, the CDCA Plan did not inherently recognize a specific route network on public lands, other than an “existing” route network that has been difficult to define. Since the CDCA Plan, route designations have been crafted out of a patchwork of authorized routes for site-specific projects, sensitive area route designations under ACEC Plans, location-specific route designations to coordinate with adjacent jurisdictions or for route-specific designation of routes as transportation linear disturbances, specific project access decisions, and field office subregion route designations for portions of areas. In 2000, the first districtwide comprehensive route designation network began to be crafted under various bioregional plans, including the WEMO Plan.

The WEMO Plan route network is one of several in the CDCA which have been developed for routes on public lands since 2000. Public OHV access networks have now been adopted on public lands adjacent to the WEMO Planning Area in four adjacent areas in the CDCA, including the NEMO, NECO, Coachella Valley, and the Western Colorado Desert (WEC) deserts, as well as on adjacent lands to the north of the CDCA in the Bakersfield District. There are an unknown number of additional linear features on the ground within these planning areas, and additional designations will continue to be carried out for newly identified features, as well as to capture routes under mining plan, permit, right-of-way, or lease that may have been excluded, consistent with current policy and guidance.

The WEMO Planning Area’s public land base is approximately 31 percent of the public lands located within the CDCA, and the physical extent of those public lands is higher, covering 9.2-million acres of the 25-million acre CDCA (36.8 percent). The large expanse of the planning

area coupled with the multiple-jurisdictional interface of the transportation network has resulted in a substantially larger route network in the WEMO Planning Area than in other parts of the CDCA. Before the new inventory, 43.1 percent of the open routes were estimated to occur within the WEMO Planning Area, based on the inventories available at that time. Following adoption of all six route network planning efforts, approximately 37.6 percent of the CDCA's open routes were believed to be located in the West Mojave Planning Area. Approximately 60.6 percent of designation of routes as transportation linear disturbances were estimated to occur within the WEMO Planning Area. The relative percentage of routes designated as transportation linear disturbances would be substantially higher using the new inventory information, but it is likely that estimates of routes designated as transportation linear disturbances are low elsewhere.

Generally, the route figures reflect the much higher historic usage of WEMO public lands, due to their location immediately adjacent to the Los Angeles metropolitan area and the rapidly urbanizing Antelope and Victor Valleys, the continuing urban interface issues that affect the planning area, and the multi-jurisdictional transportation networks that have arisen out of many different needs.

The West Mojave route network under each alternative has been designed to provide access to recreation venues and to meet commercial and other access and use needs, in a manner compatible with sensitive species conservation. The WEMO network should connect seamlessly with the networks in adjacent planning areas and on Forest Service lands, and be consistent with the transportation goals of adjacent federal, State and local jurisdictions to the extent feasible. Ultimately, the regional travel and transportation network goal must function as an effective whole. This is difficult to address in an area that includes such diverse transportation goals, needs and outcomes, and each of the alternatives is proposing a different approach for public lands to get us to this regional network.

Under all alternatives, including No Action, cumulative impacts on regional OHV access and use are significant. The public lands network forms the basis of the regional network off of main highways in the entire planning area except the southwestern and Wonder Valley portions which contain few public lands. The public land network serves as the glue that connects resources, private land owners, jurisdictions, agencies, commercial users, recreational users, through travelers, and management strategies in most of the WEMO Planning Area. In moving to a network with specific connections and limitations of access, the region is shaping access, and also development and recreational use patterns in both specific and strategic ways that are outlined under each alternative.

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CHAPTER FIVE

STATUTORY SECTIONS

Chapter Five discusses the following topics that are required to be addressed by environmental impact statements by federal and/or California statutes, regulations, or policy:

- Relationship Between Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity
- Irreversible and Irrecoverable Commitment of Resources
- Growth-Inducing Effects of the Proposed Action

5.1 Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

In the short term, the project alternatives allow dispersed commercial and recreational uses to be made of desert lands, including off highway vehicle recreation, mining, livestock grazing, filming and other uses. Closure of off highway vehicle routes that do not contribute to the network goals, closure and limitation of those routes that affect sensitive resources, and minimization of routes with regional network-wide and location-specific measures, in the long term would enhance habitat quality and maintain landscapes and watershed condition, including soils and water quality. It would also minimize the loss of cultural sites, preserving their information and heritage values.

Transferring impacts from the most sensitive biological areas to less sensitive biological areas further contributes to landscape, habitat and watershed enhancement in DT ACECs and other sensitive areas over the long-term as well; however, long-term productivity closer to urban centers may continue to deteriorate as more use is directed to these areas, including the loss of cultural sites, semi-rural character, and intact habitat. More remote areas that are less sensitive may also experience some level of deterioration of productivity over the long-term. Working closely with local jurisdictions to coordinate strategies on outreach, education, key closures and limitation of routes to types of use that are less impacting, as well as minimization of routes with regional network-wide and location-specific measures, in the long term would minimize deterioration of habitat quality, landscapes, and watershed condition.

Long-term productivity of landscape, watershed and biological resources, as well as cultural resources in sensitive areas, will be enhanced by continuing implementation of other actions in the 2006 WEMO Plan and the DRECP. Long-term productivity will also be enhanced by actions taken in conjunction with ongoing cultural surveys and response actions throughout the planning area. The short-term uses associated with project alternatives, with appropriate implementation strategies, are consistent with the goals of long-term productivity as outlined in these two Plans.

Appropriate access and use to some sites visited by the public would be maintained, thus minimizing losses of recreation and commercial access in other locations and maintaining the long-term recreational potential of the landscape. This would be accomplished by the design of a network that provided appropriate access and use in a manner that avoided sensitive resource sites, limiting how the public uses routes near sensitive sites that remain accessible, directing use away from specific areas with significant habitat loss or watershed damage, and providing

specific strategies in areas that have evidence of proliferation which are not closed. OHV access would continue to be provided for a variety of activities, including equestrian staging areas, recreational touring, motorcycling, hiking, rockhounding, mineral exploration, and other recreational uses. Commercial uses would continue to be provided appropriate access, and to the extent feasible, would generally be directed to the approved network to minimize impacts to long-term productivity.

5.2 Irreversible and Irretrievable Commitment of Resources

Resource impacts associated with OHV use can be irreversible, or can take such a long period of time to be reversed that they are, in the timeframe of the WEMO Plan, effectively irreversible (Iverson and others 1981). In some cases, active re-vegetation efforts on closed routes can be effective in reducing the time needed for recovery. However, re-vegetation in desert environments is a slow process, and recovery of some resources, such as biological soil crusts (Belnap 1993), are expected to be irreversible long beyond the timeframe of the WEMO Plan and CDCA Plan.

The impacts of motor vehicle use on cultural resources also can be irreversible and irretrievable as well (Lyneis et al. 1980). In some cases data recovery may be possible. A decision to mitigate impacts to cultural resources by data recovery, instead of avoidance, constitutes a residual impact to a site. Sites are rarely, if ever, completely excavated. Mitigation by data recovery results in a steady loss of archaeological sites, and reduces opportunities for interpretation in their natural context. Data recovery may also negatively impact Native American values that cannot be mitigated.

Future undertakings to implement route designations that involve ground disturbing activities would require site-specific resources and cultural analysis that may include surveys, recording of historic and prehistoric sites, consultations, and determinations of eligibility of sites to the National Register of Historic Places. Potential impacts to Native American values would be analyzed. Such ground disturbing activities may also be subject to ESA Consultation with USFWS. Mitigation measures would be identified and implemented if necessary and avoidance is not achievable.

5.3 Growth-Inducing Effects

Population growth in the West Mojave is projected to range between 1.59 percent and 2.21 percent per year for the 30-year term of the West Mojave Plan. Based on previous growth figures and associated use estimates, population growth and economic activity are primary drivers of each other. Major access and use of various areas also helps drive growth. However, the OHV access network is not a major driver of growth. It is rather responding to the growth by serving the recreational and commercial access needs brought by the increasing population needing commercial infrastructure and with leisure time.

One exception could be an enhancement of opportunities for the growth of the tourism industry on public lands. Establishment of a viable route network, publication of the opportunities it offers, and implementation of a desert user education program could increase use of certain areas of public lands near recreation areas of particular interest to visitors. This could have a spillover effect on nearby desert communities, which would be well positioned to provide services, information and supplies to desert users.

CHAPTER SIX CONSULTATION

6.1 Consultation

Federal Endangered Species Act (FESA)

The USFWS has jurisdiction to protect threatened and endangered species under the federal Endangered Species Act (ESA) [16 U.S.C Section 1531 et. seq.]. Formal consultation with the USFWS under Section 7 of the ESA is required for any federal action that may adversely affect a federally-listed species. The BLM intends to initiate formal consultation with the USFWS in April 2019. Furthermore, consultation shall be completed prior to the signing of any Record of Decision associated with the proposed changes.

National Historic Preservation Act (NHPA)

Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108) requires Federal agencies with jurisdiction over a proposed Federal project to take into account the effect of the undertaking on cultural resources listed or eligible for listing on the National Register of Historic Places, and requires that the agencies afford the Advisory Council on Historic Preservation (ACHP) with an opportunity to comment on the undertaking. Section 106 of the NHPA implementing regulations at 36 C.F.R. Part 800 also requires that Federal agencies consult with the State Historic Preservation Office (SHPO), affected Indian tribes, and other consulting parties on undertakings. The BLM is utilizing and coordinating the NEPA commenting process to partially satisfy the public involvement requirements for Section 106 of the NHPA, as provided for in 36 C.F.R. § 800.2(d)(3).

BLM initiated the Section 106 consultation process with a letter to the California SHPO on February 16, 2012. In a 2012 agreement, BLM and the SHPO cooperatively developed initial data acquisition and analysis needs in support of the current planning effort. The ACHP was invited to participate in consultation by letter dated June 2, 2014 and elected to participate by letter response dated June 24, 2014.

In coordination with the California SHPO and the ACHP, the BLM is complying with Section 106 through the implementation of the *Programmatic Agreement among the Advisory Council on Historic Preservation, the Bureau of Land Management-California, and the California Office of Historic Preservation Regarding National Historic Preservation Act Responsibilities for the West Mojave Plan Environmental Impact Statement and the West Mojave Route Network Project* (September 2015) (Agreement). The Agreement was developed following the regulations at 36 C.F.R. §800.14 (b) and is consistent with BLM guidance (IM-2012-067) for cultural resource considerations in off-highway vehicle designations and travel management efforts. The Agreement was developed in consultation with the ACHP, SHPO, Indian tribes, and other consulting parties identified by the BLM, between June 2012 and September 2015.

To date, BLM has completed a Phase I records-review for the Supplemental EIS, updated GIS cultural resources location layers, and conducted field monitoring of specific sites as outlined in the 2012 agreement with SHPO. In compliance with the provisions of the Agreement, BLM has used the Phase I information to develop a GIS-based sensitivity analysis and predictive modelling program (Model), and is currently working on field verification of the Model. The

Model will be used to inform the implementation of the Historic Properties Management Plan (HPMP), as required by the Agreement. The Model and HPMP will guide the BLM in designing inventory strategies for the WEMO Planning Area; in evaluating identified resources for NRHP eligibility; in assessing effects to historic properties; in the application of appropriate avoidance, minimization, or mitigation measures and adjustments to the travel network where adverse effects to eligible historic properties are occurring; and in following all other stipulations established in the Agreement.

The travel management decisions in the WMRNP will include the designation of off-highway routes in the West Mojave Desert and portions of the Great Basin Transition Zone. Pursuant to 36 C.F.R. §800.14(b)(1)(i) and (ii), the effects on historic properties are likely to be similar and repetitive, cross multiple regions, and cannot be fully determined prior to the approval of the undertaking. As allowed under 36 C.F.R. §800.4 (b)(2), the Agreement includes procedures for phasing the implementation of the HPMP for the identification and evaluation of historic properties after the Record of Decision is signed. The Agreement also specifies programmatic procedures for addressing effects to eligible historic properties, including effects from routes that are open and would remain open, routes that would be newly opened or closed, and routes that are unauthorized.

BLM currently utilizes the Supplemental Procedures for Livestock Grazing Permit/Lease Renewals: A Cultural Resources Amendment to the State Protocol Agreement between California Bureau of Land Management and the California State Historic Preservation Officer to address the NHPA Section 106 compliance for processing grazing permit renewals for existing livestock allotments. The Supplement calls for BLM to address impacts of grazing on cultural resources through a Class II sampling and reconnaissance survey strategy. Inventory is focused on areas of high cultural resource sensitivity that overlap areas of livestock congregation, including springs, water courses, meadows, and range improvement areas such as troughs and salting areas. Class I records searches and tribal and interested party consultation is to occur with each grazing permit renewal. Standard protective measures have been developed to address impacts to resources from livestock activities and an annual monitoring protocol is incorporated into the agreement. The Supplement applies to the continued use of a grazing allotment at or below the authorized levels. Under the Supplement, range undertakings, including improvements and increases in AUMs allowed within the allotment will be reviewed on a case-by-case basis by BLM Cultural Resources Specialists.

Tribal Consultation

Tribal consultation is being conducted in accordance with applicable laws, regulations, and policies. Tribal concerns, if any, are given due consideration in evaluation of Plan amendment alternatives and in the implementation of the Programmatic Agreement. Consultation was initiated in 2011 with Federally- and non-Federally recognized tribal groups. Five tribal outreach open house meetings were held in early 2014 to hear additional input from the tribes, in advance of the SHPO meeting to initiate development of the Agreement. Tribes were invited to participate in the development of the Agreement, and tribal representatives participated in the consultation, held between June 2012 and September 2015, including providing comments on multiple drafts of the Agreement. Tribal representatives also participated in the consultation to develop the HPMP between April and October 2016. Consultation is ongoing and will continue throughout the development and implementation of the West Mojave Route Network Project and

throughout the implementation of the Programmatic Agreement. Six annual consulting parties meetings have been held since 2016.