West Mojave (WEMO) Route Network Project

Draft Supplemental Environmental Impact Statement

BLM

California Desert District, California

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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, alsoadministers 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 Draft West Mojave Route Network Project (WMRNP) and 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 Resource Management Plan 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 RMP revision process, the BLM conducted scoping to solicit input from the public and interested agencies on the nature and extent of issues and impacts to be addressed in the Draft RMP Amendment and Draft SEIS. Planning issues identified for this WMRNP Plan Amendment focus on transportation access for the public, commercial users, residents, associated recreational use, access 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 Draft EIS considers four 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 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, the Proposed Action, 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. This is not a final agency decision, but instead an indication of the agency's preliminary preference that 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 ROD for the RMP Plan 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. Comments are accepted for 90 days following the date on which the U.S. Environmental Protection Agency publishes the Notice of Availability for this Draft Plan Amendment and Draft SEIS in the *Federal Register*. Comments may be submitted electronically using the WMRNP revision website at: https://www.blm.gov/programs/planning-and-nepa/plans-development/california/west-mojave-plan-route-network

Comments may also be submitted by mail to:

California Desert District, Attn: WMRNP Plan Amendment, 22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553

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

January 2018

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United States Department of the Interior
BUREAU OF LAND MANAGEMENT
California Desert District
22835 Calle San Juan de Los Lagos
Moreno Valley, California 92553
www.blm.gov/california

In Reply Refer To:
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January 8, 2018

Dear Reader:

Attached for your review and comment is the West Mojave Route Network Project (WMRNP) and Draft Supplemental Environmental Impact Statement (SEIS), California Desert District. Through this Resource Management Plan Amendment, the BLM is amending the 1980 California Desert Conservation Area (CDCA) Plan, as amended. The WMRNP specifically amends the decisions in the 2006 West Mojave (WEMO) Plan Amendment to the CDCA Plan for the planning and management of a transportation and travel network and livestock grazing on public lands within the West Mojave Planning Area. The Bureau of Land Management (BLM) has prepared this document in accordance with the National Environmental Policy Act (NEPA), as amended, the Federal Land Policy and Management Act of 1976 (FLPMA), implementing regulations, the BLM's Land Use Planning Handbook (H1601-l), and other applicable law and policy.

The West Mojave Planning Area is located in southern California, in the northwestern third of the CDCA, and comprises approximately 9.4 million acres of land. Within the Planning Area, the BLM administers approximately 3.1 million acres of public lands.

The WMRNP also includes implementation-level decisions, including a transportation and travel network which designates specific routes of travel in the planning area, and related implementation strategies. When approved, the WMRNP will supplement the 2006 West Mojave Plan and will guide the management of transportation and travel management in the West Mojave Planning Area into the future. The WMRNP and Draft SEIS and supporting information are available on the project web site at:

https://www.blm.gov/programs/planning-and-nepa/plans-development/california/west-mojave-plan-route-network.

The BLM encourages the public to provide information and comments pertaining to the analysis presented in the Draft SEIS. We are particularly interested in feedback concerning the alternatives, associated goals and objectives, adequacy and accuracy of the analysis, and any new information that would help the BLM as it develops its plan and decision. If you wish to submit comments on the WMRNP and Draft SEIS, we request that you make your comments as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies, and reference to a section or page number.

Comments will be accepted for ninety (90) days following the Environmental Protection Agency's

(EPA) publication of its Notice of Availability in the Federal Register. The BLM can best utilize your comments and resource information submissions if received within the review period.

Comments may be submitted electronically at: blm_ca_wemo_project@blm.gov. Comments may also be submitted by mail to: California Desert District, Attn: WMRNP Plan Amendment, 22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553. To facilitate analysis of comments and information submitted, we encourage you to submit comments in an electronic format.

In developing the Final SEIS and CDCA Plan Amendment, which is the next phase of the planning process, the decision maker may select various components from among the alternatives analyzed in the Draft SEIS for the purpose of creating a management strategy that best meets the needs of the resources and values under the BLM multiple-use and sustained yield mandate. As a member of the public, your timely comments on the WMRNP and Draft SEIS will help formulate the Final SEIS and CDCA Plan Amendment. Comments which contain only opinion or preferences will be considered and included as part of the decision making process, although they will not receive a formal response from the BLM.

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

Public meetings to provide an overview of the document, respond to questions, and take public comments will be announced by the local media, website, and/or public mailings at least 15 days in advance. Copies of the Draft SEIS have been sent to affected Federal, state, and local government agencies. Copies of the WMRNP and Draft SEIS are available for public inspection at the BLM California Desert District Office and all BLM Field Offices within the California Desert District.

Copies are also available for public inspection at the following local library locations:

- Kern County Library, Ridgecrest Branch, 131 E Las Flores Ave, Ridgecrest, CA;
- Kern County Library, California City Branch, 9507 California City Blvd, California City, CA;
- San Bernardino County Library, 57098 29 Palms Highway, Yucca Valley, CA;
- Victorville City Library, 15011 Circle Dr, Victorville, CA;
- San Bernardino County Library, 777 East Rialto Ave, San Bernardino, CA.

Thank you for your continued interest in the WMRNP. We appreciate the information and suggestions you contribute to the planning process. For additional information or clarification regarding this document or the planning process, please contact Matt Toedtli, Project Manager, Barstow Field Office, 760-252-6026 or Craig Beck, Assistant Project Manager, Ridgecrest Field Office, 760-384-5440.

Sincerely,

Beth Ransel
District Manager

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EXECUTIVE SUMMARY

This Draft Supplemental Environmental Impact Statement (SEIS) 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 (2006 WEMO Plan), which was adopted through a Record of Decision (ROD) dated March, 2006.

The Draft SEIS considers four 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 SEIS revisits and updates the 2005 WEMO Final EIS analysis of environmental impacts associated with motor vehicle access 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 WEMO Planning area is located to the north of the Los Angeles metropolitan area (See Figure 1-1). The WEMO Planning area currently totals 9.4 million acres, of which approximately 3.1 million acres are BLM administered public lands. The current inventory of routes identified approximately 16,000 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.

ES.1 Introduction

CDCA Plan and Amendments

The conservation program established by the 2006 WEMO Plan and 2016 Desert Renewable Conservation Plan (DRECP) Land Use Plan Amendment (LUPA) apply to the BLM-administered public lands in the planning area. The WMRNP amendment to the Motorized Vehicle 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 of public land in southern California. The CDCA Plan includes 12 plan elements, including a Motorized-Vehicle Access (MVA) Element. The MVA Element of the CDCA Plan addresses both access and vehicular use of public lands in southern California, and identified management guidelines and objectives. The MVA Element of the CDCA Plan contains language that has been judicially determined to restrict motorized vehicle routes to those that existed in 1980, and 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 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 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 (FESA and CESA, respectively). 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 Open 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 Open routes as per the CDCA Plan. The ROD for the WEMO Plan approved the designation of 5,098 miles of motorized vehicle routes. The 2006 route network and other travel management decisions were remanded to BLM for reconsideration.

The 2006 WEMO Plan modifications of the 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]);
- 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;
- 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. Therefore, 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 as follows:

- 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 Section 2.1.1.
- The boundaries of OHV Open Areas were modified, and are now different from those that were analyzed in the Draft SEIS in 2015. The revised Open Areas are described in Table 3.6-2.

Additional modifications of the livestock grazing program were made in the 2016 DRECP LUPA. 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 current SEIS evaluates no action and three alternative route networks, as well as language changes within the CDCA Plan. The three action alternatives include variations in (1) the land-use plan level decisions in the Motor Vehicle Access 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.

Purpose and Need for Supplemental EIS

The purpose and need of the WMRNP is to provide a framework for transportation management, and specific travel management implementation strategies in Limited Access Areas of the West Mojave Planning Area. This framework and these strategies would (1) limit conflicts and threats to sensitive resources, (2) respond to current and anticipated future transportation and travel needs, (3) provide appropriate recreational access, and (4) consistency with the CDCA Plan, as amended by the 2006 WEMO Plan and 2016 DRECP LUPA. The MVA goal of the 2006 WEMO Plan is to provide appropriate motorized vehicle access to public lands for commercial, recreational, and other purposes in a manner that is compatible with species conservation. In addition, a modification to the livestock grazing program is under consideration, which would make all allotments in DT ACECs and other critical habitat unavailable for livestock grazing. The Draft SEIS also analyzes access 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. As discussed in the original NOI and the revised NOI, BLM needs to amend the CDCA Plan to modify language regarding the process for designating routes within the WEMO area, and to establish a route network based on the requirements of BLM policy and regulation, including 43 CFR 8342.1, the 2012 BLM Travel and Transportation Management Handbook (H-8342-1), and the 2016 Travel and Transportation Management Manual (BLM 2016). In addition, BLM needs to respond to specific issues related to the US District Court WEMO Remand Remedy Order issued in 2011, and update WEMO Plan baseline information where appropriate.

Scope of the Supplemental EIS

Plan Amendments

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 motorized access is allowed. All areas within the CDCA, including all lands within the West Mojave Planning Area, are designated as open, limited, or closed for motorized access, including all lands within the West Mojave Planning Area. The CDCA Plan amendment being considered for the West Mojave Planning Area in this Draft SEIS only applies to those areas that are categorized as limited motorized access. Within limited motorized access areas, routes may be designated as open, open with certain restrictions, or closed to motorized use.

The specific plan amendments, and their supporting rationale, are described in Section 2.1.2. 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 Chapter 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 motorized 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 based on 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 minimization criteria provided in the regulation;

- BLM Handbook 1610-1, Appendix C, Comprehensive Trails and Travel Management, which requires delineation of travel management areas and designation of Off-Highway Vehicle Management Areas as open, limited, or closed; and
- BLM Handbook 8342, Travel and Transportation Management Handbook, which describes how BLM is to comprehensively manage travel and transportation on public land.

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 to facilitate the implementation of proposed travel management strategies. This WEMO Travel Management Route Network 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 Draft SEIS.

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 DWMAs, with additional measures included for the allotments that are still available or potentially available for grazing. In addition, a mechanism for voluntary relinquishment of active leases was adopted in the WEMO Plan. In addition to these measures, the 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.

BLM implementation of the proposed amendment 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. The decisions that would be necessary to implement each alternative are listed in Chapter 2.

Relationship to Implementation Decisions

Plan-level decisions include the adoption of an overall travel management strategy and the designation of 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 activity-level implementation 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 activity-level implementation decisions are location or route-specific, including route designations, route-specific minimization measures, and specific area outreach strategies. Activity-level implementation decisions may be made concurrent with or subsequent to plan-level travel management strategies.

Concurrent activity-level travel management implementation plans are being developed for the West Mojave Planning Area. The activity-level travel management plans will be finalized after consideration of additional public input on the Draft SEIS 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 Draft SEIS and alternatives, a proposed TMP has been developed for each proposed TMAs from the Draft SEIS alternatives. The proposed implementation plans will be circulated with the Final SEIS. TMPs were constructed for each TMA per the BLM's Travel and Transportation handbooks and guidance to determine the implementation level decisions needed for route management. The TMPs serve as guidelines for the BLM Ridgecrest and Barstow Field Offices to prescribe management actions for ongoing route designation and other features related to routes such as: ground-disturbing activities, data/inventory management, restoration, signing, monitoring, adaptive management, closures, easements, provisions and processes, and standard operation procedures within the Planning Area (See Appendix G).

Future changes to the 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 and in each specific implementation plan.

Relationship to 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 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 partially vacated the 2006 WEMO ROD, citing the potential for unpredictable or irreversible environmental consequences if the full ROD were subject to complete vacatur. The general finding related to travel management was that complete vacatur of the OHV route network was not warranted.

Accordingly, BLM has determined that development of the current SEIS, tiered from the 2005 WEMO Final EIS, is appropriate. This SEIS has been developed 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.

ES.2 Supplemental EIS Goals

All alternatives incorporate the CDCA Plan goal to provide for the use and access to public lands, and resources within the CDCA, including economic, educational, scientific, and recreational uses, in a manner which enhances, wherever possible—and which does not diminish, on balance—the environmental, cultural and aesthetic values of the desert and of its productivity, as identified in Sections 601 and 103 of FLPMA. The CDCA Plan recognized the sometimes complex and conflicting mandates that provide for both use and protection of a variety of public resources, and the key role of access across public lands.

The adopted framework to update the MVA Element and specific travel management strategies would (1) limit conflicts and threats to sensitive resources, (2) respond to current and anticipated future transportation and travel needs, (3) provide appropriate recreational access, and (4) are consistent with the overall motor vehicle access goals of the CDCA Plan, 2006 WEMO Plan, and 2016 DRECP LUPA.

The Livestock Grazing Element of the CDCA Plan also 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.

CDCA Plan/2006 WEMO/2016 DRECP LUPA Goals

- Designate a transportation and travel system on public lands, and provide implementation strategies for the system;
- Provide for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners, and other public agencies;
- When designating or amending areas for motorized vehicle access, to the degree possible, avoid adverse impacts to desert resources;
- Use maps, signs, and published information, including electronic media, to communicate the motorized vehicle access situation to desert uses. Be sure all information materials are understandable and easy to follow;
- Continue to provide access and opportunities for exploration and development on public lands which are accessed or have potential for:
    i. Critical mineral resources (national defense; 50+% importer; net importer)
    ii. Potential energy resources (geothermal, oil, gas, uranium, and thorium)
    iii. Minerals of local and State importance (sand & gravel, limestone, gypsum, iron, specialty clays, zeolites)

CDCA Plan/2006 WEMO Plan/2016 DRECP LUPA Motor Vehicle Access Objectives

- In limited areas, designate a transportation system consisting of motorized-vehicular access routes. Users of the transportation system will be directed toward use of primary vehicular routes that form the backbone of the travel network. These routes are intended for regular use and for linking desert attractions for the general public. Secondary motorized, mechanized, and trail routes will be designated to meet specific user needs.
- When revising the route network, pay particular attention to tortoise critical habitat and identified sensitive locales.
- Routes not designated for vehicle access will be prioritized for elimination or modification through implementation strategies. Various methods such as obliteration, barricading, signing, conversion to non-motorized trails, or natural revegetation may be employed. Those routes that conflict with management objectives or cause unacceptable resource damage will be given priority.
- Route designation changes are anticipated within the transportation system as casual, authorized, and administrative uses change. Changes will be in compliance with applicable law. In all instances, new routes for permanent or temporary use would be selected to minimize resource damage and use conflicts, consistent with area goals and the criteria of 43 CFR 8342.1.

CDCA Plan/2006 WEMO/2016 DRECP LUPA Livestock Grazing Changes

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 DT ACECs 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 Ibs per acre (a change from the CDCA Plan 200 Ibs per acre threshold).
4. Discontinue the use of ephemeral grazing and temporary non-renewable grazing authorization within cattle grazing allotments located in DT ACECs.
5. Provide for voluntarily relinquishment of allotments located in DT ACECs 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 DT ACECs and CHU, unless and until the specific allotments are proposed for change through plan amendment, either in this document or through future amendment.

The DRECP 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 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 permanently eliminate livestock grazing on the allotments.

Current Travel and Transportation Management (TTM) Planning Goals

- Include "OHV Area" (i.e., Open, Closed, Limited Area) designations for all areas within the planning boundary, consistent with 43 CFR 8341 and 8342. For the CDCA, these designations were already made in the 1980 CDCA Plan and/or subsequent amendments.
- Delineate Travel Management Areas (TMAs) to address particular resource issues and prescribe specific management actions for a defined geographic area.

Current TTM Implementation Goals

Define the following elements to be included as part of Travel Management Plan implementation:

- Plan for signing;
- Education plan or strategy to communicate Transportation and Travel Management decisions to users;
- Enforcement plan;
- Rehabilitation plan for any routes closed or otherwise unauthorized;
- Development of maps, also to communicate Transportation and Travel Management requirements to users;
- Plan for maintenance intensity;
- Monitoring plan to evaluate the effectiveness of the WEMO Plan in achieving management objectives;
- Development of management objectives;
- Development of adaptive management principles, including means for making changes to the travel network;
- Definition of roadside camp and pull-off limitations; and
- Supplementary rules, if any.

Based on analysis and feedback from this Draft SEIS, BLM will adopt a proposed route network for each TMA that forms the basis for other elements of each site-specific implementation plan, including any additional minimization measures, signage, monitoring, mitigation measures and other implementation-level decisions. Separate decision records will be developed for each site-specific implementation plan.

ES.3 Alternatives

No Action and three other alternatives have been developed and are considered in the WMRNP SEIS. These alternatives are as follows:

Alternative 1—No Action

- CDCA Plan Goals and Objectives
- Area-wide increased minimization in critical habitat
- Case-by-case minimization

- Restoration focused implementation
- 6,074 miles of motorized routes

Alternative 2—Resource Conservation Enhancement

- Through-access oriented Goals and Objectives
- Area-wide increased minimization strategy across all public lands and case-by-case mitigation
- Closure-focused route designation strategy
- 5,231 miles of motorized routes

Alternative 3—Public Lands Access

- Destination- and Touring-access oriented Goals and Objectives
- Area-wide increased minimization strategy across all public lands and case-by-case mitigation
- Less emphasis on closure as a strategy, more emphasis on alternate measures
- Network-enhancement focused implementation
- 10,864 miles of motorized routes

Alternative 4—Proposed Action

- Destination- and Touring-access oriented Goals and Objectives
- Area-wide increased minimization across all public lands and case-by-case mitigation
- Balanced minimization strategy, emphasis on closure or avoidance
- 6,313 miles of motorized routes

As discussed in Sections 2.1.1 and 2.1.2, each of the alternatives is composed of RMP-level decisions and implementation-level decisions. The Proposed Action includes elements of each of the action alternatives evaluated in the Draft SEIS, as modified as described above. The Proposed Action includes measures to minimize impacts, and integrates some elements of Alternatives 1, 2, and 3 in order to enhance community values, address DAC issues, and respond to specific agency comments, consistent with the 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. The proposed action also reflects ongoing data collection, and GIS updates.

The alternatives analyzed in Chapter 4 include four alternatives for each of the Plan Amendments and four route implementation strategies, including route networks. The proposed action in the Final Supplemental EIS and Plan Amendment may eventually provide a fifth alternative as a combination of the current alternatives, or may be an adoption of one of the current alternatives. BLM-proposed activity plans will be included as appendices within the Final SEIS, and will tier from the proposed WMRNP Plan Amendment.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Air Quality	The magnitude of air emissions is 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. Route closures under the No Action Alternative total 8,900 miles, resulting in a reduction in fugitive dust emissions and beneficial impact due to re-vegetation and rehabilitation of disturbed soil areas. Mileage of routes near sensitive receptors and residences is only slightly more than in Alternative 2, and grazing impacts do not appreciably differ.	The magnitude of air emissions is the same for all alternatives. 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. Route closures under Alternative 2 total 10,718 miles, resulting in the highest reduction in fugitive dust emissions among the alternatives. Alternative 2 has the lowest mileage of routes near sensitive receptors and residences, and grazing impacts do not appreciably differ.	The magnitude of air emissions is the same for 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. Route closures under Alternative 3 total 4,978 miles, resulting in the lowest reduction in fugitive dust emissions among the alternatives. Alternative 3 has the highest mileage of routes near sensitive receptors and residences, and grazing impacts do not appreciably differ.	The magnitude of air emissions is the same for all alternatives. 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. Route closures under Alternative 4 total 9,507 miles, resulting in a reduction in fugitive dust emissions which is roughly similar to the No Action Alternative. Mileage of routes near sensitive receptors and residences is approximately the same as Alternative 1, and grazing impacts do not appreciably differ.
Climate Change	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Geology, Soil, and Water Resources	The mileage of routes near desert washes and riparian areas in Alternative 1 is slightly higher than in Alternative 2. Soil and riparian impacts would decrease as a result of livestock grazing measures adopted in the 2006 WEMO Plan. The magnitude of erosion and compaction impacts would be higher for No Action than Alternative 2, and would be higher than under other alternatives if future grazing is authorized in vacant allotments under the 2006 WEMO Plan. Riparian impacts do not substantially vary between alternatives since most natural water sources used by livestock are excluded by fencing.	The route network under Alternative 2 would have the lowest mileage of motorized 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.	The route network under Alternative 3 would have the highest mileage of motorized 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. The magnitude of erosion and compaction impacts could be lower for Alternative 3 than for No Action, over the long term (if future grazing is authorized under No Action), and would be higher than Alternative 2. Riparian impacts are the same as No Action.	The mileage of routes near desert washes and riparian areas in Alternative 4 is approximately the same as Alternative 1. The magnitude of erosion and compaction impacts could be lower for Alternative 4 than for No Action, over the long term (if future grazing is authorized), and would be higher than Alternative 2. Riparian impacts are the same as No Action.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Vegetation	The mileage of routes in close proximity to sensitive vegetation communities, special status plants, and UPAs in Alternative 1 is slightly higher than in Alternative 2. Grazing impacts would be higher than under Alternative 2, even with measures adopted in the 2006 WEMO Plan, because more forage in sensitive species habitat would potentially be available for livestock grazing. Grazing impacts would not substantially vary between other Alternatives, in the short-term, and would be higher than under other alternatives if future grazing is authorized in vacant allotments under the 2006 WEMO Plan.	The route network under Alternative 2 would have the lowest mileage of motorized 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.	The route network under Alternative 3 would have the highest mileage of motorized 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 in the short term, but may be lower over the longer term.	The mileage of routes in close proximity to sensitive vegetation communities, special status plants, and UPAs in Alternative 4 is approximately the same as in Alternative 1. Grazing impacts are more than Alternative 2 and the same as Alternative 3.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Wildlife	The mileage of routes in close proximity to special status wildlife areas in Alternative 1 is slightly higher than in Alternative 2. Grazing impacts to wildlife are the same as impacts for vegetation; they would be higher under No Action than Alternative 2, and, over the long-term higher under No Action than under Alternative 3 or 4 impacts.	The route network under Alternative 2 would have the lowest mileage of motorized 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. Grazing impacts to wildlife are the same as impacts for vegetation; they would be lower under Alternative 2 than the other alternatives.	The route network under Alternative 3 would have the highest mileage of motorized 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. Grazing impacts to wildlife are the same as impacts for vegetation; Alternative 3 impacts would be lower than under No Action and higher than under Alternative 2.	The mileage of routes in close proximity to special status wildlife areas in Alternative 4 is slightly higher than in Alternative 1. Grazing impacts to wildlife are the same as impacts for vegetation; Alternative 4 impacts would be lower than under No Action and higher than under Alternative 2.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Socioeconomics	The mileage of routes available to support recreation and authorized users in Alternative 1 is slightly higher than in Alternative 2. 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 or 4, but would be lower than under Alternative 2.	The route network under Alternative 2 would have the lowest mileage of motorized 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. Impacts under Alternative 2 are higher than under the other Alternatives because it would result in an additional loss to individual lessees and the local tax base.	The route network under Alternative 3 would have the largest mileage of motorized routes available to support recreation and authorized users of BLM lands. The increase in the mileage of motorized routes would be a beneficial impact to recreation-focused businesses and other authorized users, as compared to the No Action Alternative. Impacts are the same as No Action.	The mileage of routes available to support recreation and authorized users in Alternative 4 is slightly higher than in Alternative 1. Impacts are the same as No Action.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Recreation	The mileage of routes available to support recreation in Alternative 1 is slightly higher than in Alternative 2. There are no substantial grazing impacts under any of the alternatives.	The route network under Alternative 2 would have the lowest mileage of motorized 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 motorized routes available to support recreation. The increase in the mileage of motorized 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 routes available to support recreation in Alternative 4 is slightly higher than in Alternative 1.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Livestock Grazing	The mileage of routes available to support authorized users in Alternative 1 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 West Mojave Planning Area. Grazing would be evaluated on a case-by-case basis on inactive allotments when new applications are received.	The route network under Alternative 2 would have the lowest mileage of motorized 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 and CHUs.	The route network under Alternative 3 would have the largest mileage of motorized routes available to support the operations of grazing permittees and lessees. By increasing the mileage of motorized 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 West Mojave Planning Area. Grazing would be evaluated on a case-by-case basis on inactive allotments when new applications are received.	The mileage of routes available to support grazing in Alternative 4 is slightly higher than in Alternative 1. Livestock grazing would continue on 19 active allotments under the terms and conditions contained in the Final Grazing Decisions for active allotments in the West Mojave Planning Area. Grazing would be evaluated on a case-by-case basis on inactive allotments when new applications are received.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Energy Production, Utility Corridors, and Other Land Uses	The mileage of the existing authorized or permitted routes are the same in all alternatives. There are no substantial grazing impacts under any of the alternatives.	The route network under Alternative 2 would have the lowest mileage of motorized 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 motorized 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 motorized 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 routes available to support authorized users in Alternative 4 is slightly higher than in Alternative 1.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Cultural Resources	The mileage of routes in close proximity to known cultural resources in Alternative 1 is slightly higher than in Alternative 2. Grazing impacts would be the same as Alternatives 3 and 4 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 and CHUs.	The route network under Alternative 2 would have the lowest mileage of motorized 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. 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 and CHUs would be eliminated.	The route network under Alternative 3 would have the highest mileage of motorized 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. Grazing impacts are the same as the No Action Alternative.	The mileage of routes in close proximity to known cultural resources in Alternative 4 is slightly higher than in Alternative 1. Grazing impacts are the same as the No Action Alternative.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Visual Resources	The mileage of motorized routes in the most sensitive VRM classes (Class I and II) is slightly higher than in Alternative 2, slightly lower than Alternative 4, but much lower than Alternative 3. There are no substantial grazing impacts under any of the alternatives.	The mileage of motorized routes in the most sensitive VRM classes (Class I and II) is lowest in Alternative 2. Although remaining motorized routes would continue to have an adverse impact on the visual character of the desert, closure of routes 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 No Action Alternative.	The mileage of motorized 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 closed routes, and would therefore have an adverse impact on visual resources, as compared to the No Action Alternative.	The mileage of motorized routes in the most sensitive VRM classes (Class I and II) is slightly higher than in Alternatives 1 and 2, but much lower than Alternative 3.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Special Designations	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs is slightly higher than in Alternative 2, slightly lower than Alternative 4, but much lower than Alternative 3. Grazing impacts would be higher than under Alternative 2, even with measures adopted in the 2006 WEMO Plan, because more specially designated areas would potentially be available for livestock grazing. Grazing impacts would not substantially vary between other Alternatives in the short-term, and would be higher under No Action than under the other alternatives, which eliminate the potential for future grazing in additional special areas.	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs 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 under this alternative than other Alternatives because DT ACECs would immediately become unavailable for livestock grazing or damage.	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs 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 are more than Alternative 2 and the same as No Action in the short term, but lower over the longer term.	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs is slightly higher than in Alternatives 1 and 2, but much lower than Alternative 3. Grazing impacts are the same as Alternative 3.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Noise	The mileage of routes near sensitive receptors and residences is only slightly more than in Alternative 2, and much less than in Alternative 3. There are no substantial grazing impacts or differences among the alternatives.	The route network under Alternative 2 would have the lowest mileage of motorized 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 motorized 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 routes near sensitive receptors and residences is only approximately the same as in Alternative 1.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Travel and Transportation Management	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 would maintain the current level of connections and access, and would therefore have no impact on travel and transportation management. There are no substantial grazing impacts to the alternatives. 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 access these areas. As a result, this alternative would have a slight adverse, direct impact to travel and transportation management. There are no substantial grazing impacts to the TTM alternatives. 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 motorized routes, 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. There are no substantial grazing impacts to the TTM alternatives.	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 specific comments regarding access to specific locations and users. As a result, Alternative 4 would be the most beneficial to travel and transportation management. There are no substantial grazing impacts to the TTM alternatives.

Table ES-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Paleontological Resources	The mileage of 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 and 4 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 and CHUs.	The route network under Alternative 2 would have the lowest mileage of motorized 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 the lowest magnitude of direct, 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 and CHUs would be eliminated.	The route network under Alternative 3 would have the highest mileage of motorized 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.	The mileage of routes in areas with High/Very High potential for paleontological resources in Alternative 4 is slightly higher than in Alternative 1. Grazing impacts are the same as the No Action Alternative.

CHAPTER ONE
INTRODUCTION

This Draft Supplemental Environmental Impact Statement (SEIS) 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 (2006 WEMO Plan), which was adopted through a Record of Decision (ROD) dated March, 2006. The Draft SEIS considers four alternatives, including a no action alternative, to evaluate the environmental impacts associated with the BLM's West Mojave Route Network Project (WMRNP). The 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.

Three action alternatives evaluated in this Draft SEIS include variations in (1) the land-use plan level decisions in the Motor Vehicle Access 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 as desert tortoise Areas of Critical Environmental Concern [DT ACECs]) within the West Mojave Planning Area. The proposed action has been determined to be a major federal action that requires preparation of an EIS pursuant to the National Environmental Policy Act (NEPA).

The analysis in the Draft SEIS revisits and updates the 2005 WEMO Final EIS analysis of environmental impacts associated with motor vehicle access 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 Desert Renewable Energy Conservation Plan Land Use Plan Amendment (DRECP LUPA), and the land use plan amendment and travel network alternatives evaluated are consistent with the land use designations and goals and objectives of the approved DRECP LUPA.

1.1 Overview of the Environmental Impact Statement

1.1.1 Site Location and Description

The West Mojave Planning Area is located to the northeast of the Los Angeles metropolitan area (See Figure 1.1-1). The West Mojave 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, 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 West Mojave Planning Area. The other changes analyzed in this SEIS would likewise apply only to the BLM administered public lands within the West Mojave Planning Area.

1.1.2 CDCA Plan, WEMO Plan, and DRECP LUPA Background

CDCA Plan

By map referenced in statute, the California Desert Conservation Area (CDCA) encompasses 25 million acres of land in southern California. The applicable land use plan, the CDCA Plan of 1980, addressed public-land resources and resource uses on 12 million acres of public land within the 25 million acres of CDCA land in southern California. The CDCA Plan includes 12 plan elements, including a Motorized-Vehicle Access (MVA) Element that establishes the travel management framework for the CDCA, and also includes some activity-level decisions for popular locations, and a Livestock Grazing Element that established geographic boundaries of livestock allotments, the types of forage use, and the upper limits on the stocking levels in each of the allotments. The other elements in the CDCA Plan include a Recreation Element, a Wild Horse and Burro Element, Cultural Resources and Native American Elements, Wildlife and Vegetation Elements, a Wilderness Element, a Land Tenure Adjustment Element, an Energy Production and Corridors Element, and a Geology, Energy and Mineral Resources Element. Since 1980, numerous amendments have been adopted which have changed the CDCA Plan. Unless otherwise noted, references in this document to specific text within the CDCA Plan are referencing the 1999 reprint version. Multiple amendments to the CDCA Plan have been approved since 1999, including the 2006 WEMO Plan and the 2016 DRECP LUPA.

The MVA Element of the CDCA Plan addresses travel management on public lands in southern California with a focus on recreational vehicular use of and identifies the travel management framework for those various public lands. The MVA Element also outlines the route designation process, specifically restricts motorized vehicle routes to those that existed in 1980 (CDCA Plan, 1999, p. 77), and includes goals that, either in practice or through amendment, have been updated since 1980 to implement current policy. The CDCA Plan considers non-motorized travel in the context of the motorized access necessary in order to reach non-motorized areas and activities within the planning area. The Recreation Element of the CDCA Plan also addresses an aspect of access outside of OHV Open Areas—the routes that can be used for, and adoption of specific courses for, competitive vehicle events.

The MVA Element of the CDCA Plan has been amended several times since the 1980 CDCA Plan was published, and many of those amendments have included some or all of the West Mojave Planning Area. The major amendments to the CDCA Plan regarding motorized vehicle access prior to the initiation of the 2006 WEMO Plan route network are summarized in the 1999 reprint of the CDCA Plan. Specific route designations have been previously published in the Federal Register for various areas within the West Mojave Planning Area between 1985 and 1987, and again in the 2003 West Mojave Desert Off-Road-Vehicle Designation Project and Environmental Assessment. The 2003 West Mojave Desert Off-Road-Vehicle Designation

Project and Environmental Assessment analyzed alternative networks for the Planning Area and selected and approved an interim West Mojave route network pending the completion of the 2006 WEMO Plan. For a complete description of the chronology of route designation in the West Mojave Planning Area, see Section 3.1 and Appendix E of the SEIS.

2006 WEMO Plan

In 2006, the BLM approved a comprehensive amendment covering the WEMO area of the CDCA, called the 2006 WEMO Plan, which was analyzed as BLM's component of the 2005 WEMO EIS. The 2006 WEMO Plan is a federal land use plan amendment to the CDCA Plan 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, and (2) a streamlined program for complying with the requirements of the federal and California Endangered Species Acts (FESA and CESA, respectively) (WEMO, 2006 p. ES-1). The 2006 WEMO Plan includes modification of the vehicle management program and livestock grazing program to promote the adopted conservation strategy for public lands. 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 Open routes as per the CDCA Plan, MVA Element (CDCA 1999, p.77).

The 2006 WEMO Plan Amendment approved a total of 12 separate decisions; most were focused on establishment or adjustment of Areas of Critical Environmental Concern (ACECs) and changes to multiple use classes.

The specific decisions related to Motorized Vehicle Use and route designations made in the 2006 WEMO ROD, are as follows:

- Decision 5: Recommendations made in the 1994 Rand Mountains-Fremont Valley ACEC Management Plan were adopted, including adoption of the proposed motorized vehicle access network to be managed with an educational permit system.
- Decision 6: The motorized vehicle access network in the Afton Canyon Natural Area ACEC was adopted.
- Decision 8: Regional Public Land Health Standards and Guidelines were adopted, subject to Secretarial approval, which is pending.
- Decision 9: The motorized vehicle access network in the remainder of the planning area was adopted, and included minor modifications of the 2003 route network, a redesign of the Juniper subregion, and route closures in the Lane mountain milkvetch ACEC, Barstow woolly sunflower ACEC, the Mojave monkeyflower ACEC, and the Red Mountain subregion. The approved network also included the opening of a 9-mile undesignated route east of Haiwee Reservoir, and establishment of competitive "C" routes northeast of the Spangler Hills Open Area.
- Decision 10: The Stopping, Parking, and Camping Section of the CDCA Plan Motorized Vehicle Access Element was modified to incorporate restrictions within DWMAs, including limiting camping to previously existing disturbed camping areas adjacent to

open routes and limiting stopping, parking, and camping to within 50 feet of the centerline of open routes.

- Decision 11: The portion of the Barstow to Vegas Race Course within the WEMO Planning area was eliminated.
- Decision 12: The Stoddard Valley to Johnson Valley Competitive Event (racing) Corridor was eliminated and replaced with a Connector Route to provide a motorized access link between the two OHV Open Areas.

The 2006 WEMO Plan modifications of the livestock grazing program include, among others:

- Elimination of the majority of ephemeral sheep grazing within sheep grazing allotments located in DWMAs;
- 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 DWMAs;
- Measures to remove grazing through temporary closures in cattle grazing allotments in DWMAs when forage is inadequate; and
- Measures to allow voluntarily relinquishment of allotments located in DWMAs and other special status species habitat.

The Record of Decision (ROD) for the 2006 WEMO Plan approved the designation of approximately 5,098 miles of motorized vehicle routes. Following a successful judicial challenge in a lawsuit filed in 2006, the 2006 WEMO route network and associated travel management decisions were remanded to BLM for reconsideration.

2016 DRECP LUPA

The 2016 DRECP LUPA was developed as an interagency plan by the BLM, the U.S. Fish and Wildlife Service (USFWS), the California Energy Commission (CEC), and the California Department of Fish and Wildlife (CDFW, collectively known as the Renewable Energy Action Team (REAT or REAT Agencies) to (1) advance federal and state natural resource conservation goals and other federal land management goals; (2) meet the requirements of the federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and Federal Land Policy and Management Act (FLPMA); and (3) facilitate the timely and streamlined permitting of renewable energy projects, all in the Mojave and Colorado/Sonoran desert regions of Southern California. BLM's component of the Interagency DRECP is a federal land use plan amendment to the CDCA Plan. The DRECP LUPA addressed a larger land area than the WEMO Planning Area, but the WEMO Planning Area is entirely encompassed within the DRECP LUPA area. If applicable to WEMO, the land use planning decisions made in the DRECP LUPA apply to the entire WEMO Planning Area.

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

- Lands were identified as California Desert National Conservation Lands (CDNCL), pursuant to the Omnibus Public Land Management Act of 2009 (Omnibus Act). The DRECP LUPA identified nationally significant landscapes with outstanding cultural, ecological, and scientific values to be managed for conservation purposes.
- 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 Section 2.1.1.
- Conservation and Management Actions (CMAs) were developed to establish allowable uses, management actions, stipulations, best management practices, and mitigation measures to reduce or avoid impacts on public lands.
- The boundaries of OHV Open Areas were modified, and are now different from those that were analyzed in the Draft SEIS in 2015. The revised Open Areas are described in Table 3.6-2.
- Additional modifications to the livestock grazing program were made in the 2016 DRECP LUPA. The DRECP LUPA 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 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.

2017 Temporary Street-Legal Route Designations

In January 2017, BLM initiated an effort to consider the designation of 148 miles of routes located on BLM lands that are maintained by the County of San Bernardino County Public Works Department. If approved, use of the routes would be open to street-legal vehicles only, as

defined by the California Department of Motor Vehicles. The potential street-legal designation by BLM would be temporary, pending finalization of designations under the WMRNP. In support of this effort, BLM held public open house meetings in Yucca Valley on April 19, 2017, in Barstow on April 20, 2017, and in Barstow on May 3, 2017. The public review period closed on May 12, 2017. An Environmental Assessment (EA) is anticipated to be released in spring, 2018, regarding the temporary restriction of street-legal only routes.

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 partially vacated the 2006 WEMO ROD, citing the potential for unpredictable or irreversible environmental consequences if the full ROD were subject to complete vacatur. 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 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 1.4 and 1.9 of this document.

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 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 Draft SEIS 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 current Draft SEIS considers public comments made during those review periods, and incorporates additional data and requirements associated with the 2016 DRECP LUPA.

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 (created in 2013) of all the open 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 of approximately 16,000 miles.

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 and Appendix E. 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 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 or tracing errors. Other routes were "in the wrong place", possibly the result of the equipment used in 2001, resulting in 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 clarify their designation, and will remain there until evidence of their use is substantially eliminated.

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 16,000 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 motorized 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 use for some time. The discrepancy between the 5,098 miles of routes approved by the 2006 WEMO Plan and the 16,000 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 16,000 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 16,000 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) to total 6,074 miles. This number, 6,074 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 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, the 2016 DRECP LUPA, and other amendments. 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 purposes 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. This alternative would make allotments in DT ACECs unavailable for livestock grazing as they become vacant. The Draft SEIS also analyzes access 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 wilderness and OHV boundary modification legislation; receipt of new information on routes, route impacts, and route uses; and the litigation on the 2006 WEMO Plan Amendment. These changes 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 needs to provide managers with a consistent way of implementing the CDCA Plan transportation management strategy that is adopted for the WEMO area, to achieve national and CDCA goals 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 motorized access is allowed. All areas within the CDCA, including all lands within the West Mojave Planning Area, are designated as open, limited, or closed for motorized access, including all lands within the West Mojave Planning Area. The CDCA Plan amendment being considered for the West Mojave Planning Area in this Draft SEIS only applies to those areas that are categorized as limited motorized access. Within limited motorized access areas, routes may be designated as open, open with certain restrictions, or closed to motorized use.

The specific plan amendments, and their supporting rationale, are described in Section 2.1.2. 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 Chapter 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 motorized 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 based on 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 minimization criteria provided in the regulation;
- BLM Handbook 1610-1, Appendix C, Comprehensive Trails and Travel Management, which requires delineation of travel management areas and designation of Off-Highway Vehicle Management Areas as open, limited, or closed; and
- BLM Handbook 8342, Travel and Transportation Management Handbook, which describes how BLM is to comprehensively manage travel and transportation on public land.

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 to facilitate the implementation of proposed travel management strategies. This WEMO Travel Management Route Network 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 Draft SEIS.

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 DWMAs, with additional measures included for the allotments that are still available or potentially available for grazing. In addition, a mechanism for voluntary relinquishment of active leases was adopted in the WEMO Plan. In addition to these measures, the 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 the designation of 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 re-designate routes as available for use or as closed, as deemed necessary and as consistent with regulations, plans, and NEPA requirements.

Concurrent implementation-level travel management implementation plans are being developed for the West Mojave Planning Area. The Travel Management Plans (TMPs) will be finalized after consideration of additional public input on the Draft SEIS 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 Draft SEIS and alternatives, a proposed TMP has been developed for each proposed TMA from the Draft SEIS alternatives. The TMPs will be circulated with the Final SEIS. TMPs were constructed for each TMA per the BLM's Travel and Transportation handbooks and guidance to determine the implementation level decisions needed for route management. The TMPs serve as guidelines for the BLM Ridgecrest and Barstow Field Offices to prescribe management actions for ongoing route designation and other features related to routes such as: ground-disturbing activities, data/inventory management, restoration, signing, monitoring, adaptive management, closures, easements, provisions and processes, and standard operation procedures within the Planning Area (See Appendix G).

Future changes to the 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 NEPA Process

1.3.1 Notice of Intent

The planning process was initiated by a Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement and Proposed Plan Amendment to the 2006 WEMO Plan that was published in the Federal Register on September 13, 2011, and clarified on May 2, 2013 to indicate the planning-level vs non-planning level decisions, and to clarify that the plan amendment would be an EIS-level amendment.

The clarified NOI served as notification of the intent to prepare an EIS as required in 40 CFR 1501.7, as well as of potential amendment to the CDCA Plan, and requested comments on relevant issues, National Historic Preservation Act (NHPA) (16 U.S.C. 470(f)) concerns, and initial planning criteria for the plan amendment. The NOI indicated that the Proposed Plan Amendment and SEIS would consider the following:

- Amend the Motorized-Vehicle Access (MVA) Element of the CDCA Plan to modify the language regarding the process for designating routes in the West Mojave Planning Area;
- Reconsider other MVA Element land-use-planning level guidance for the West Mojave Planning Area;
- Revisit the route designation process for the West Mojave Planning Area;
- Clarify the West Mojave Planning Area inventory for route designation and analysis;
- Establish a route network in the Planning Area consistent with current guidance and new information;

- Adopt travel management areas (TMAs) to facilitate implementation of the West Mojave route network;
- Provide or modify network-wide and TMA-specific activity-plan level minimization, mitigation, and other implementation strategies for the West Mojave Planning Area; and
- Respond to specific issues related to the US District Court WEMO Summary Judgment and Remedy Orders.

1.3.2 EIS Scoping

Following publication of the original NOI, BLM held two overview public scoping meetings on September 27 and 29, 2011, in Ridgecrest and Barstow, California. These were followed by eight public travel designation workshops held in January and February, 2012. The travel designation workshops were each focused on a single Travel Management Area, a BLM-defined sub-area of the 2006 WEMO Plan area. Appendix A presents a summary of the scoping comments. The issues to be addressed and the areas of controversy surrounding the proposed plan amendment were similar to those identified for the 2006 WEMO Plan Amendment. In the Scoping Report for the 2011 and 2012 meetings, BLM categorized the public comments as follows:

- NEPA process, and requests for maximizing public involvement in the process;
- Effects of the proposed action on livestock grazing;
- Type of route designation process to be used;
- Criterion A of 43 CFR 8342.1 (minimizing damage to air, soil, watershed, vegetation, or other resources of the public lands, and to prevent impairment of wilderness sustainability);
- Criterion B of 43 CFR 8342.1 (minimizing harassment of wildlife or significant disruption of wildlife habitats);
- Criterion C of 43 CFR 8342.1 (minimizing conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands);
- Criterion D of 43 CFR 8342.1 (prohibiting trails in officially designated wilderness areas or primitive areas);
- Definition of the purpose and need for the route network;
- The range of alternatives to be considered;
- The source of data for the route inventory being evaluated;
- Specific resource impacts, including air quality; biological resources; climate change; and cumulative impacts associated with alternative energy projects, expansion of military bases, and other planning efforts;
- Mitigation and minimization measures to be considered;
- Implementation and administrative actions including route signage, trail monitoring, enforcement, public education, trail enhancements, and other administrative actions; and

- Area and route-specific comments organized by the Travel Management Areas initially identified.

Three additional public workshops were held in January 2014, in Barstow, Bishop, and Ridgecrest, which issues of concern to tribal communities. The great majority of the scoping issues and comments were related to specific route designations in the Planning Area. One exception was the comment by many users to address the routes in the Ridgecrest and El Paso subregions through a separate route designation process. Many commenters also provided input on the network inventory, the needs that the network serves, and the route designation process. Primary NEPA considerations focused on cumulative effects to resource values, particularly soils and sensitive species, the cumulative effects of grazing, and to potential cumulative loss of recreational access opportunities. Primary user considerations focused on maintaining diverse recreational opportunities, providing access for specific users, including rock-hounders, motorcyclists, scientific and educational activities, and non-motorized users, dealing with conflicts between users, and maintaining commercial and private access needs. A more complete list of issues can be found in Appendix A of this Draft SEIS, the Scoping Report.

1.3.3 Draft SEIS

The Notice of Availability of the WMRNP Draft SEIS was published in the Federal Register on March 6, 2015 (FR Vol. 80, No. 44, Pgs. 12194 to 12195). The initial public review period began on March 6, 2015, and continued for 90 days until June 4, 2015. During that period, BLM held public meetings in Ridgecrest on March 31, in Victorville on April 2, in Lone Pine on April 7, and in Yucca Valley on April 15, 2015. BLM received 458 public comment letters within this comment period. These included six form letters that were signed by a total of approximately 4,000 individuals.

Based on comments requesting an extension of the public comment period, and the ability to review the Draft SEIS within the context of the DRECP LUPA, an additional public comment period was re-opened beginning on September 25, 2015. This additional comment period was open for 120 days, until January 25, 2016. During this period, two additional public meetings were held in Victorville on December 15, 2015 and in Ridgecrest on December 17, 2015. During this comment period, BLM received an additional 286 public comment letters. These included four form letters that were signed by a total of 74 individuals.

Following each of those public comment periods, BLM reviewed the public comments. Where appropriate, changes were made in the route designation alternatives, analysis, and/or text of the SEIS. Comments that were not route-specific were organized into categories, and responses were developed for each group of comments. The response–to-comment document is provided in Appendix I of this Draft SEIS. There were approximately 11,900 route-specific comments in which a commenter requested a change to the designation of a route or route segment. Where these comments identified a specific route, requested a change in its designation, and provided rationale for the proposed change, they were reviewed by resource staff, and changes to designations were made in the Alternative 4 route network, where appropriate.

1.3.4 Desert Advisory Council Subgroup

The Desert Advisory Council (DAC) is a citizen-based Resource Advisory Council that provides recommendations on the management of public lands in the BLM's California Desert District. The DAC operates under a Charter established under Section 309 and Section 601 (g)(1) of the FLPMA, as amended (43 U.S. Code 1739, 1761); and all other provisions of the law. In December 2011, in response to the WEMO Project, the DAC established the WEMO Route Network Project Subgroup (WRNPS), which provides input regarding route-specific and network issues pertinent to the WEMO planning area for BLM to consider. The WRNPS is composed of members representing industry, recreation, and conservation interests and the public at large and holds regularly scheduled meetings that are open to the public. The mission of the WRNPS is to prepare a report identifying and providing supporting documentation for a range of alternatives for the TMAs in the planning area.

1.4 Planning Issues

The planning issues addressed in this Draft SEIS 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 2006 WEMO goal to "provide appropriate 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.

1.5 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 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 (4) apply the regulatory criteria in designation of all public lands in the West Mojave planning area as open, limited, or closed to OHVs.
- 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 both opening and closing 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.

1.6 Relationship to Other Statutes, Regulations, and Policies

1.6.1 Federal

1.6.1.1 Other BLM Programs

The programs and management of two CDCA Plan Motor Vehicle Access designations are relevant to BLM's travel management program—closed and open areas. Closed areas include those areas closed under the CDCA Plan, as well as legislatively designated wilderness, and cover 17 percent of the planning area. In closed areas, no vehicle travel is allowed and access is limited to non-mechanized travel. Wilderness management and other closed area activities include signage, kiosks, fencing and step-over gates to manage the boundary ingress/egress points, and thereby prevent mechanized travel into the designated wilderness. Therefore, these access points are important considerations when designating the limited access route network.

There are eight Open areas designated as OHV Areas that have been designated in the CDCA Plan that are located within the WEMO Planning area, covering 7.8 percent of the planning area. In Open areas, vehicle travel is not restricted to routes, except as specifically closed or otherwise marked, such as within fenced ACEC or abandoned mine features. OHV Areas may have one or two main improved or well-maintained routes that provide primary access to the area. The OHV Areas also have staging areas that were designated in the OHV Open Area Plan or have been established by a long history of use. These staging areas are intensive-use areas, and may include surrounding OHV Area lands, particularly in adjacent hillsides. As vehicles move farther away from staging areas most users stay on well-established paths. These well-established paths lead to key ingress/egress points to the OHV areas from surrounding Limited Access lands, and link to the designated route network or a boundary road. Signage, kiosks, and selective fencing are utilized to manage the boundary ingress/egress points, and thereby prevent off-route travel outside of the OHV areas. The locations of these pathways are important considerations when designating the limited access route network adjacent to OHV Open Areas.

The current grazing program in the West Mojave Planning Area is managed consistent with allotment-specific Environmental Assessments (EAs) prepared between 2007 and 2013 for the renewal of active grazing permits and leases. These EAs contain resource- and geographic-specific analysis by allotment for the current grazing program in the planning area, and were tiered to the analysis presented in the 2005 WEMO Plan EIS. As noted in the court's remedy order (p.11), the grazing decisions are to remain in effect pending revisions of the FEIS and ROD during remand, and are to be re-considered within 6 months after the ROD is approved by the BLM.

National Monument Designations

The Mojave Trails and Sand to Snow National Monuments were designated by Presidential Proclamations 9395 and 9396, respectively, on February 12, 2016. The WEMO Planning Area includes portions of both national monuments. Decisions that apply to the lands within the national monuments will be consistent with care and protection of the objects described in the respective Proclamations. The Proclamation designating the Mojave Trails National Monument directs the BLM to prepare a transportation plan that designates roads and trails where motorized or non-motorized mechanized vehicle use will be permitted within the national monument. The WMRNP will meet this requirement for the portion of the national monument within the WEMO Planning Area. A separate plan will be prepared for the portion of the Mojave Trails National

Monument that falls outside of the WEMO Planning Area. There is no requirement to prepare a transportation plan within the Sand to Snow National Monument.

1.6.1.2 U.S. Fish and Wildlife Service

BLM's decisions as part of this planning effort will be consistent with the Biological Opinion (BO) previously developed for the 2006 WEMO Plan, except as specifically identified in a revised BO. The revised BO will incorporate effects to federally endangered or threatened species not previously considered or which may have changed since 2006, as well as any changes based on a proposed route network different from that proposed and adopted in 2006. A summary of the discussions of travel management and the route networks in the previous BOs is included below. A revised BO will be developed through re-initiation of formal consultation with the U.S. Fish and Wildlife Service (USFWS) in relation to this Draft SEIS.

January 9, 2006 BO

The BO developed to evaluate the effects of the proposed 2006 WEMO Plan considered the effects of each of the 12 separate CDCA Plan Amendment decisions made in the 2006 ROD. Effects were considered on four species (desert tortoise, Parish's daisy, Cushenbury milk-vetch, and Lane Mountain milk-vetch), and three types of critical habitat (desert tortoise, Parish's daisy, and Cushenbury milk-vetch). The USFWS considered the effects of each of the 12 CDCA Plan Amendment decisions proposed by BLM, including those that focused on travel management issues.

The manner in which the USFWS addressed the travel-related and grazing issues, decisions, and other strategies is summarized below.

- The USFWS evaluated the potential effects of the Rand Mountains-Fremont Valley Management Plan on the desert tortoise and its critical habitat. The BO concluded that the plan may benefit the tortoise, and may promote the conservation role and function of designated critical habitat. This conclusion was due to the reduction in the extent of the route network in this area.
- The USFWS evaluated the expansion of the boundaries of the Afton Canyon ACEC, and the adoption of the route network in the Afton Canyon Natural Area. The USFWS concluded that the effect of these actions on the desert tortoise would be beneficial.
- The USFWS evaluated the potential effects of the proposed route network on the desert tortoise and its critical habitat. The BO specified that the USFWS did not have any definitive information on the size of a route network that would have minimal effects on the tortoise, but concluded that the proposed network should have a net benefit to the tortoise by implementing route closures. The BO also evaluated the effect of the proposed network on the Lane Mountain milk-vetch, and concluded that the reduction in the route network would diminish effects of unauthorized motor vehicle use on the Lane Mountain milk-vetch. The BO concluded that the route network would not affect the Cushenbury milk-vetch or Parish's daisy, and therefore, the 2006 BO did not re-consider effects on these species.
- The USFWS evaluated the potential effects of the proposed stopping, parking, and camping restrictions on the desert tortoise and its critical habitat. The BO concluded that

the stopping, parking, and camping measures would reduce impacts to tortoise and critical habitat in DWMAs, and would not increase impacts in areas outside of DWMAs, and therefore, would not adversely affect tortoise or its critical habitat. The BO also evaluated the effect of the stopping, parking, and camping measures on the Lane Mountain milk-vetch, and concluded that the limitations on the distance of stopping, parking, and camping from the routes would reduce potential damage to the species from that currently existing. The BO discussed that the 2003 BO had concluded that the stopping, parking, and camping measures would not affect the Cushenbury milk-vetch or Parish's daisy, and therefore, the 2006 BO did not re-consider effects on these species.

- The BO concluded that because the regional standards of public land health and guidelines for grazing management are designed to ensure the maintenance of high quality habitat or to improve the condition of habitat that is not functioning properly, their implementation is not likely to adversely affect the desert tortoise or its critical habitat.
- The USFWS evaluated the potential effects of the proposed grazing program and concluded that the grazing program proposed by the Bureau is not likely to appreciably affect the reproduction, numbers, or distribution of the desert tortoise or compromise the conservation role and function of critical habitat of the desert tortoise.
- The BO concluded that the closure of the Barstow to Vegas Race Course would benefit the desert tortoise and its critical habitat.
- The BO concluded that the elimination of the Stoddard Valley to Johnson Valley Race Corridor would benefit the desert tortoise and its critical habitat.

The 2006 BO concluded with an incidental take statement. That statement superseded the previous incidental take statements issued by USFWS for livestock grazing, for the 1993 Rand Mountains-Fremont Valley Management Plan and the 2003 West Mojave Desert Off-Road-Vehicle Designation Project route designations. For the desert tortoise, the BO concluded that the number of desert tortoises that would be killed or injured as a result of BLM's actions could not be quantified because of the large size of the action area, the patchy distribution of tortoises, and the unpredictability of when the activities could cause injury or mortality. However, the BO estimated that relatively few desert tortoises would be injured or killed by BLM's action. The statement also listed mandatory terms and conditions to be followed, and made recommendations for additional conservation measures.

November 30, 2007 BO

An amendment to the 2006 BO dated November 30, 2007, was comprised of a revised desert tortoise incidental take statement that replaced the incidental take statement of 2006. The 2007 amendment included a quantitative estimate of the numbers of tortoises that could be killed or injured as a result of BLM's 2006 WEMO Plan decisions, including take as a result of livestock grazing, casual use and motorized vehicle use. The BO concluded that the estimated take was not likely to jeopardize the continued existence of the species. Other aspects of the January 9, 2006 BO were not changed.

June 8, 2007 BO

This is an amendment to the 2006 BO dated November 30, 2007, and Re-initiation of Formal Consultation Regarding the Proposed Grazing Lease Renewal for the Valley Well Allotment. This 2007 amendment included the Valley Well Allotment as part of the Incidental Take Statement and livestock grazing must adhere to the terms and conditions contained in the 2006 BO for the 2006 WMP.

May 6, 2011 Desert Tortoise Recovery Plan

This recovery plan superseded the original 1994 Desert Tortoise Recovery Plan. The plan contains 16 recovery actions that include restricting, designating. closing, and fencing roads and routes. In addition, the plan includes actions restricting OHV events within tortoise habitat, and minimizing impacts to tortoises from livestock grazing.

1.6.2 Relationship to Adjacent Jurisdictions and Plans and Programs

Because routes cross jurisdictional boundaries, the access needs that frame the route network within the WEMO planning area may be affected by route networks, access needs, and planning efforts associated with the adjacent jurisdictions. These other jurisdictions and planning efforts and programs are discussed below.

1.6.2.1 Bordering Jurisdictions

Public lands within the WEMO Planning area and adjacent to the Planning area boundaries are bordered on all sides by other jurisdictions. These include federal land managed by the USDA Forest Service, National Park Service, Department of Defense (DoD); state lands managed by the California Department of Fish and Wildlife (CDFW) (formerly California Department of Fish and Game, or CDFG), State Lands Commission, California Department of Parks and Recreation, and California Department of Water Resources; City lands inside the municipal boundaries of which BLM may manage small isolated parcels, and private lands and roads subject to state, County, or municipal jurisdiction. Travel management on adjacent lands is managed through various management plans, general plans, and regulations, as follows:

- Land outside of the West Mojave Planning area but under the jurisdiction of the BLM is subject to the CDCA Plan or other applicable Land Use or Travel Management Plans, as discussed below;
- 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 for Land Acquisition and Airspace Establishment To Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at the Marine Corps Air Ground Combat Center;
- Adjacent State-, County- or City-owned land is subject to agency or jurisdiction-specific regulations and requirements for travel on those lands;

- Adjacent routes on private land that are designated as part of a County or city network may be subject to the applicable General Plan for that County or city;
- Adjacent routes on private land that are not designated as part of a County or city network may not be subject to any jurisdiction, but will be considered by BLM in the network development process.

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; addressing access compatibility and consistency with local plans, and coordinating trespass issues with responsible local law enforcement and County agencies.

Specific information related to travel management on adjacent planning areas is provided below:

Northern and Eastern Mojave (NEMO) CDCA Plan Amendment

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 and directly abuts the West Mojave Planning Area to the east. The NEMO Plan amendment to the CDCA Plan was implemented in a ROD that 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 lies to the southeast of the western Mojave Desert, in the area that generally lies south of I-40, and adjacent to the eastern half of Joshua Tree National Park. 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". Some wash areas were designated open or closed such that all wash routes in those areas would be available or not available for use. The NECO Plan also left in place the portion of the Johnson Valley-Parker route within the NECO area because it lay entirely outside of DWMAs and had minimal species sensitivity issues. However, the Johnson Valley-Parker route has not been proposed and authorized for use for competitive events since the approval of the NECO Plan.

National Forest Plans

The National Forests which border the WEMO 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 National Forest and public lands as a major focal point for travel management, and BLM is working with the local and regional SBNF office to identify appropriate public access strategies and achieve shared goals along shared boundaries and watersheds. These strategies are being incorporated into the WMRNP to the extent consistent with public land laws. 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), and that include some routes adjacent to the WEMO route network.

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 area include Sequoia, Joshua Tree, and Death Valley National Parks and the Mojave National Preserve. The Sequoia National Park General Management Plan was finalized on September 14, 2007. 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 Corps Air-Ground Combat Center (MCAGCC), Edwards Air Force Base, and Naval Air Weapons Station China Lake. Each of these installations operates under an Installation Management Plan which address motorized vehicle 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 of Twentynine Palms MCAGCC includes development of a mechanism to allow limited motorized vehicle access on portions of the Expansion Area in a manner similar to access in BLM OHV Open Areas, when the land is not being used for military exercises. Legislation titled the Military Lands Withdrawals Act of 2013 was passed as an element of PL 113-66, which expanded the 29 Palms MCAGCC adjacent to the Johnson Valley OHV Open Area. Congress modified alternative 6 enabling the USMC to withdraw lands to the south and west of the current 29 Palms MCAGCC within an Exclusive Military Use Area (EMUA), and to also conduct Marine Expeditional Brigade level live–fire training while increasing the amount of land available for recreational use in a Shared Use Area (SUA). The MCAGCC Expansion includes approximately 79,000 acres to the west, and approximately 19,000 acres to the south, of the 29 Palms MCGACC that were withdrawn for the EMUA, and to be managed by the Secretary of the Navy.

In the legislation, approximately 53,000 acres is designated as a SUA to be managed by the Secretary of the Interior for public recreation during any period in which the land is not being

used for military training and as determined suitable for public use, as well as natural resource conservation. For two 30-day periods per year, the SUA will be used and managed by the Secretary of the Navy for military training. The SUA together with approximately 43,000 acres to the west of the authorized MCAGCC withdrawal boundary has been designated as the *Johnson Valley Off-Highway Vehicle Recreation Area* in PL 113-66, totaling approximately 96,000 acres.

Red Rock Canyon State Park

The California Desert Protection Act (1994) conveyed lands from BLM to the State to add to Red Rock Canyon State Park. The State did not accept some of these lands because they were encumbered with mining claims pursuant to the Mining Law of 1872. The California Department of Parks and Recreation and the BLM jointly manage these lands. BLM published a 20-year Segregation Order for Public Lands within Red Rock Canyon State Park that is in effect until May, 2017 (Public Land Order No. 7260, 62 Federal Register 26324, May 13, 1997). This order withdraws all BLM-managed lands in Red Rock Canyon State Park from operation of all public land laws and mineral laws subject to valid existing rights to protect the Park. Routes in and out of the Park cross BLM-managed public lands within the El Paso TMA and the Jawbone TMA.

Other State Lands

State Lands are intermingled with BLM public and private lands throughout the planning area and are managed by various State agencies. Generally travel management strategies on State lands are handled on a case by case basis. Most State Lands are managed by the California State Lands Commission (CSLC). The California Department of Fish and Wildlife (CDFW) also has land holdings or easements in the planning area. Other State agencies have very modest land holdings. CSLC generally does not identify travel routes on State lands, except where those lands have been identified or zoned for specific uses or for conservation purposes. The California Department of Fish and Wildlife has acquired mitigation lands for conservation of sensitive resources, and has otherwise obtained conservation easements on lands managed by third parties. When identified, BLM travel management strategies to address these conservation, mitigation, or easement lands respond to particular access needs or easement terms to the extent consistent with federal law and FLPMA.

County Route Networks

The WEMO Planning area covers parts of San Bernardino, Kern, Inyo, Los Angeles, and Riverside Counties. Each of these counties has a General Plan which includes a Transportation Element and maps of dedicated County Roads, some of which cross BLM-managed lands as well as County ordinances on private lands that directly or indirectly affect OHV use of the network. Although the General Plans are not applicable to activities on Federal lands, BLM coordinates with the Counties and associated Special Districts and strives to achieve consistency between federal and local plans, address unresolved issues and identify opportunities, maintain continuity of access across jurisdictional boundaries, and generally utilize the County Road system as a backbone for motorized access to OHV routes on public lands, consistent with Bureau policy.

Local Route Networks

The WEMO Planning area covers many municipalities. Generally, few BLM-managed lands are within these municipal boundaries and the lands within most municipalities are unclassified to facilitate management with surrounding lands. Municipalities generally have a General Plan which includes a maintained and unmaintained road network that links to surrounding County or BLM lands. Although the General Plans are not applicable to activities on Federal lands, BLM coordinates with the cities to assure appropriate through access on municipal routes and to address community needs and unresolved issues, consistent with Bureau policy. BLM also seeks to link its network to municipality networks to support their recreational goals and enhance their community recreational and economic opportunities, consistent with their plans and policies.

1.7 Coordination and 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 consultation associated with the 2006 WEMO Plan amendment to the CDCA Plan was completed. The USFWS previously issued three BOs in association with BLM's route network designations in the WEMO Planning area. The first BO was issued in 2003 in association with BLM 2003 Decision Record establishing the route network in the WEMO area. The second BO was issued in 2006, in association with the 2006 WEMO Plan amendment itself, and addressed travel and route network issues along with all other decisions considered in the 2006 WEMO Plan. The third BO, issued in 2007, revised the 2006 BO by quantifying potential tortoise impacts, and modifying terms and conditions with respect to transportation and other issues. BLM will evaluate whether re-initiation of consultation on the 2007 BO based on changes proposed in this SEIS is required, and, if so, such 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. The 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.

The BLM California currently utilizes *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* (Supplement) 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.

1.8 Organization of the Draft Plan and SEIS

The WMRNP Draft SEIS is organized as follows:

- Chapter One – ***Introduction*** provides an overview of the West Mojave Route Network Project, proposed plan amendment decisions and other proposals, and the scope of the SEIS; applicable regulations and policies; a brief history of WEMO planning and travel management planning, project purpose and need, the reasons for proposing the plan amendment, project scoping and issues, planning criteria; coordination and consultation considerations, and a table of the issues identified by the court that must be addressed.
- Chapter Two – ***Alternatives*** describes the four alternatives, including No Action, that are analyzed in detail for the WMRNP and Draft SEIS, including alternatives related to CDCA Plan amendment under consideration, planning criteria, adoption of the WEMO travel management areas, and network goals being considered for amendment of the CDCA Plan. In addition, the frameworks for implementation of the four alternative route networks are evaluated. The process and parameters utilized to develop and minimize impacts from the alternatives are explained. A tabular comparison of the alternatives is provided. This chapter also describes other suggested alternatives that were discussed during the planning process but ultimately eliminated from detailed consideration in the EIS.
- Chapter Three – ***Affected Environment*** describes the current management situation, summarizes key information from the 2006 WEMO Plan and 2016 DRECP LUPA, and calls out those aspects of the natural and human environment that are likely to be affected by the adoption of the alternatives described in Chapter 2. Affected aspects of the environment include the region's natural, recreational, and cultural resources, social and economic considerations in the western Mojave Desert, energy production and

transmission, other commercial uses, including livestock grazing, and motorized vehicle access to public lands.

- Chapter Four – ***Environmental Consequences*** presents an analysis of the effects that adoption of each of the alternatives could have on the natural and human environment, updating and enhancing the analysis from the 2005 WEMO Final EIS, including cumulative effects.
- Chapter Five – ***Statutory Sections*** addresses the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity, irreversible and irretrievable commitments of resources, growth inducing effects, energy consumption and conservation, and environmental justice considerations.
- Chapter Six – ***Consultation and Coordination*** provides a summary of BLM's consultation and coordination activities, as well as the List of Preparers of the Draft SEIS.
- Chapter Seven – ***Acronyms and Glossary*** provides the abbreviations and definitions of terms used in this document.
- Chapter Eight – ***References*** provides the reference materials used in the development of the SEIS.
- Appendix A presents a summary of comments received during the scoping process.
- Appendix B provides a description of the subregions, which served as the basis for analysis.
- Appendix C presents a summary of the vegetation and wildlife considered for evaluation in the SEIS.
- Appendix D provides an air quality analysis developed by the Mojave Desert Air Quality Management District in support of the WMRNP.
- Appendix E provides a summary of the history of the route designation process in the WEMO Planning area.
- Appendix F provides consultation and coordination letters related to BLM's interagency consultation efforts for the WMRNP.
- Appendix G provides the WMRNP Travel Management Plans for the TMA alternatives.
- Appendix H provides an assessment of the conformance of the WMRNP Proposed Action with the DRECP LUPA Conservation and Management Actions (CMAs).
- Appendix I presents an index of the public comments received on the Draft SEIS, and BLM's responses to those comments.

1.9 Court Issues Addressed in the Draft SEIS

The Draft 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 1.9-1.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Sufficiency of Description of No Action Alternative Summary Judgment Order, Pg. 43, line 28 through Pg. 44, line 5.	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.	Chapter 3.1 of the Draft SEIS 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 open 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.
Sufficiency of Description of No Action Alternative Summary Judgment Order, Pg. 44, line 11 through Pg. 45, line 1.	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.	The route network in the No Action Alternative is used consistently in the route analysis and discussion of impacts in Chapter 4 of the Draft SEIS. 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.
Inclusion of Post-1980 Routes in Alternatives Summary Judgment Order, Pg. 36, lines 13-18, and Pg. 43, lines 10-14.	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.	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 1610-1 (Appendix C), or BLM Handbook 8342. Therefore, this Draft SEIS proposes to revise that language to conform to current regulations and policy. This SEIS 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.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Criteria Used for Route Designations Summary Judgment Order, Pg. 24, line 20 through Pg. 25, line 11.	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.	The process used by BLM to evaluate impacts associated with the various route network alternatives is discussed in Section 2.3 of the Draft SEIS. 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. Section 2.3 of the Draft SEIS provides tables listing these resources, and 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.
Reasonable Range of Alternatives (Same Mileage of Routes in Each 2006 WEMO Alternative) Summary Judgment Order, Pg. 40, line 11 through pg. 42, line 4.	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.	Table 2.4-2 of the Draft SEIS shows the extent of the route network designated under each of the alternatives analyzed in the SEIS. 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 2.4-2, the Alternative objectives, sensitivity analysis for minimization, and particular strategies selected to minimize effects resulted in a wide range of network sizes.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Soils Summary Judgment Order, Pg. 48, lines 16-18.	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.	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 Draft SEIS. 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.
Grazing Summary Judgment Order, Pg. 48, lines 17-18. Pg. 42, footnote 33.	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."	Table 2.4-3 of the Draft SEIS shows the extent of the grazing program that would be authorized under each of the alternatives analyzed in the Draft SEIS. 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 Draft SEIS alternatives. Some of the allotments are now vacant or have been relinquished since 2006, making additional analysis of the possible impacts by livestock in those allotments moot at this time. 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 Section 4.4 Tables, by alternative.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Cultural and Historical Resources Summary Judgment Order, Pg. 50, lines 10-24.	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 NHPA and consultation with the 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.	One of the 32 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 Draft SEIS, 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: • 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). These measures are discussed in Section 3.9 of this Draft SEIS.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Unusual Plants Assemblages (UPAs) and Riparian and Water Resources Summary Judgment Order, Pg. 51, lines 15-19. Remedy Order Pg. 15	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.	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 those identified impacts.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Sensitive Species – Mojave Fringe-Toed Lizard Summary Judgment Order, Pg. 51, lines 13-20.	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.	Mojave Fringed-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 29 Palms MCAGCC. The results of the surveys are discussed in Section 3.4, and the results have been incorporated into the analysis of the route network.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Air Quality Summary Judgment Order, Pg. 53, line 24 through Pg. 54, line 1. Remedy Order Pg. 9, lines 19-22. Remedy Order Pg. 14.	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 open 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. 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 SIP. 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.	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 D). 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 SEIS, based on the additional information provided in the MDAQMD report, and the results are presented in Section 4.2 of this Draft SEIS.

Table 1.9-1. Court Issues Addressed in the Draft SEIS

Court-Identified Issue	Description	Action Taken in Current Draft SEIS
Cumulative Analysis Summary Judgment Order, Pg. 54, lines 11-16.	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.	The specific analysis deficiencies cited in the Court's Summary Judgment Order have been addressed in this Draft SEIS 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.

CHAPTER TWO
ALTERNATIVES

As presented in Chapter 1, the Purpose and Need for the West Mojave Route Network Project (WMRNP) is to adopt a comprehensive framework for transportation management and specific travel management network and other implementation strategies in Limited Access Areas of the West Mojave Planning Area that (1) limits conflicts and threats to sensitive resources, (2) responds to current and anticipated future transportation and travel needs, (3) provides appropriate recreational access, and (4) is consistent with the overall motor vehicle access and conservation goals of the 2006 WEMO Plan and 2016 Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA). Additionally, the Supplemental Environmental Impact Statement (SEIS) will analyze grazing impacts on specific resources in response to the Court's statements of inadequacy.

This SEIS supplements the 2006 WEMO Plan and has been developed to be consistent with the conservation goals of the 2006 WEMO Plan, 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.

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 California Desert Conservation Area (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 WMRNP plan amendment and adopted travel network must comply with FLPMA, Executive Orders 11644, 11989, and 13195, BLM's regulations that establish "minimization criteria" for Off-Highway Vehicle (OHV) routes found in in 43 CFR 8342.1, with policy direction found in BLM Handbook 1610-1, Appendix C, Comprehensive Trails and Travel Management, BLM Manual 1626, Travel and Transportation Management, and BLM's Travel and Transportation Management (TTM) Handbook (H 8342, BLM 2012), and BLM's Travel and Transportation Manual (BLM 2016) in order to provide an implementation framework for route designations in the WEMO Planning Area. This chapter describes the Land Use Plan (LUP)-level decisions and implementation-level activity decisions (including travel network alternatives and proposed changes to grazing allotments) that are analyzed in Chapter 4 of this SEIS.

The No Action Alternative (Alternative 1) and three action alternatives (Alternative 2, 3, and 4) are described in this chapter and analyzed in Chapter 4 of this SEIS. Alternatives 1 through 4 were developed for analysis and consideration in the Draft SEIS, 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 Proposed Action following BLM's adoption of the DRECP LUPA in 2016, and is evaluated, along with the other three alternatives, in this Draft SEIS. 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 Desert Tortoise Areas of Critical Environmental Concern (DT ACECs) and critical habitat in the planning area.

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

The development and description of alternatives in this chapter are organized as follows:

- Section 2.1 provides a summary of access management decisions, both at the land use plan and the implementation level to address the goals and objectives of the WMRNP;
- The Land Use Planning Proposed Action and Alternatives are described in Section 2.2;
- Section 2.3 summarizes all features of the Proposed Action and each alternative;
- Section 2.4 provides a comparative summary of the Proposed Action and alternatives;
- The alternatives considered, but not carried forward for detailed evaluation, are described in Section 2.5; and
- Procedures for modifying the Plan are provided in Section 2.6.

Definitions that are used throughout this document that the reader should be familiar with include the following:

- The term "access" may refer to any type of linear ground access, whether for motorized (including OHV use), non-motorized (e.g., mountain bike), or non-mechanized use (e.g., horse, hiking).
- A "transportation linear feature" is a linear ground disturbance that results from travel across or immediately over the surface of BLM-administered public lands. These features include engineered roads and trails, as well as user-defined, non-engineered routes, created as a result of public or unauthorized use.
- A "route" also includes all types of access, unless otherwise specified.
- A "transportation linear disturbance" is the term now used in BLM travel management guidance to indicate that a designated route is unavailable for motorized use—that it is essentially "closed", and has not otherwise been identified as a specialized trail, such as the Pacific Crest Trail. While there are nuanced differences, generally closed routes and transportation linear disturbances are equivalent, and are used interchangeably in this document.
- All routes available for use outside of OHV Open areas are now considered "limited" because they are located in Limited access areas. This document indicates whether and how each route is limited.

- The majority of "limited" routes in this plan are not restricted to any one type of use. Although these routes are indicated as "limited to motorized use" routes, they are also open to non-motorized and non-mechanized uses. These routes are roughly equivalent to "open" routes in the No Action alternative.
- Other "limited" routes do have restrictions. These restrictions have specified categories. Restrictions could include restricting use to specific vehicle types, to non-motorized travel, or to a specific type of non-motorized travel (such as bicycling), to seasonal use, to non-mechanized travel (equestrian/pack animal, canoe, hiking, skiing), or to one type of non-mechanized travel. May also include restriction of the route to administrative (agency) use or authorized (by permit or other signed approval) use.
- A "temporary route" is a transportation linear feature authorized or acquired for the development, construction, or staging of a project or event that has a finite lifespan.
- "Authorized use" includes travel related access for users authorized by the BLM or otherwise officially approved. Access may include motorized access for permittees, lessees or other authorized users, along with approved access across BLM-administered public lands for other state and federal agencies.
- A "trigger" is the term used to describe any one of the 29 factors used to signal the need to review a route for application of minimization or mitigation. These factors are based on the minimization criteria under 43 CFR 8342.1, and are defined in Table 2.3-4 (for Alternative 2) and Table 2.3-4 (for Alternatives 3 and 4).

See the glossary for other terms used in this document.

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. The Draft SEIS, published in March, 2015, evaluated a No Action Alternative (Alternative 1) and three action alternatives (Alternatives 2, 3, and 4). Each alternative consisted of a land use planning component, and an implementation component. The land use planning component of each alternative consisted of potential amendments to the CDCA Plan related to motorized vehicle access and to grazing. The implementation component of each alternative consisted of a designated route network. Development of TMPs, another component of the implementation, was deferred until a preferred route network was selected. As discussed in more detail below, both the plan amendments and the route networks associated with the previous Draft SEIS have been revised to incorporate BLM's adoption of the DRECP LUPA, as well as other land tenure adjustments and route network corrections identified based on public comments. In addition, Alternative 4 has been re-developed into the Proposed Action. Finally, the proposed TMPs, based on the Proposed Action, have been developed, and are included as Appendix G to this Draft SEIS.

2.1.1 Background to 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

http://www.blm.gov/ca/st/en/fo/cdd/wemo_court_mandates.html. 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 Motorized Vehicle Access (MVA) Element of the CDCA Plan. Thirdly, BLM has adopted a Bureau-wide Transportation and Travel Management (TTM) System which provides for more inclusive travel management decisions. Finally, the CDCA Plan includes some mitigation measures for access 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 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 Motorized Vehicle Access Element, and/or would support the goals and objectives of the CDCA Plan, 2006 WEMO Plan, 2016 DRECP LUPA, and WMRNP. 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.

In the CDCA Plan and 2006 WEMO, many allowable land uses and conservation measures related to both travel and transportation management and grazing were based on land use designations. As a result, many of the planning level decisions considered in the 2015 WMRNP Draft SEIS were based on the land use designations which were in effect at that time, and which have since been modified as a result of the adoption of DRECP LUPA. These changes have resulted in the need to modify some of the proposed plan amendments which were considered in the Draft SEIS. Specific discussions of these changes are found in Section 3.6 (Recreation), Section 3.10 (Visual Resources), and Section 3.11 (Special Designations). A summary of these changes is as follows:

- The previous designations of multiple use classes have been eliminated, and were replaced with an overlapping set of designations established for resource conservation, recreation, and development.
- The boundaries of previously existing ACECs have been modified. The designation of Desert Wildlife Management Areas (DWMAs), which had previously distinguished between ACECs established for protection of the desert tortoise and ACECs established

for protection of other resources, has been eliminated. ACECs established for protection of the desert tortoise are now referred to as desert tortoise ACECs (DT ACECs)

- Areas have been designated as California Desert National Conservation Lands (CDNCLs). Public Law 111-11, the Omnibus Public Lands Management Act of 2009, formally established the National Landscape Conservation System (NLCS), which is made up of BLM-managed nationally significant landscapes with outstanding ecological, cultural and scientific values, and is managed to conserve, protect and restore these values. Within the DRECP LUPA, components identified for inclusion in the NLCS as lands within the CDCA administered for conservation purposes are referred to as CDNCLs.
- Lands Managed for Wilderness Characteristics have been established. Wilderness values were previously evaluated in the Draft SEIS with respect to Wilderness Areas, Wilderness Study Areas (WSAs), and Lands Inventoried for Wilderness Characteristics. The Lands Inventoried for Wilderness Characteristics have now been eliminated and replaced, where applicable, by Lands Managed for Wilderness Characteristics.
- Visual Resource Management (VRM) classifications have been adopted across the entire CDCA.
- Special Recreation Management Areas (SRMAs) are managed for their recreation opportunities, unique value, and importance. Extensive Recreation Management Areas (ERMAs) have been established to address recreation use and demand.
- Development Focus Areas (DFAs) have been established as areas where renewable energy development is allowed and incentivized. Variance Process Lands (VPLs) are available for renewable energy development, but are not incentivized.

2.1.2 Planning Decisions

Specific planning decisions to be made in the WMRNP include LUP-level decisions which are amendments to the Plan. The Draft SEIS published in 2015 evaluated 11 proposed plan amendments, which were numbered I through XI. However, decisions made in the DRECP LUPA rendered four of those proposed plan amendments moot, and have resulted in changes in the scope of several others. These changes include:

- The DRECP LUPA changed the land use designations in the CDCA Plan, thus making PA II, which had been based on the CDCA Plan's previous multiple use classifications, no longer applicable.
- BLM determined that PA III, which was proposed to adjust the boundaries of OHV Open Areas to conform to legislative changes in wilderness and Department of Defense (DoD) land boundaries, was unnecessary, because the boundary changes in legislative actions take precedence over the Open Area boundaries in the LUP.
- The purpose of PA IV had been to establish thresholds through which the need for a Plan Amendment would be determined for future route designations. The DRECP LUPA ROD (Section I.4.8) specified that future route designations are implementation decisions, and not plan decisions. Therefore, PA IV is moot, and has been eliminated from the Draft SEIS.

- The DRECP LUPA adopted some of the changes that had been proposed to grazing allotments in the Draft SEIS, thus eliminating the need to consider those changes in the WMRNP. This has resulted in elimination of PA V, and modification of PA XI.

The revised LUP-level decisions are summarized in Table 2.1-1. The remaining seven plan amendments have been re-numbered, and Table 2.1-1 shows the correlation between the previous plan amendment number in the Draft SEIS and the new plan amendment number in this Draft SEIS.

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 Draft Amendment
Draft Plan Amendment Decisions to be Made Under All Action Alternatives		
PA I (PA I in Draft SEIS): 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 (PA VI in Draft SEIS): Designate Framework by adopting TMAs and associated objectives.	Not designated in current CDCA Plan	TMAs would be designated, in accordance with BLM's TTM Handbook, to facilitate travel management planning.
PA III (PA VII in Draft SEIS): 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 motorized vehicle events, and potentially eliminate the Johnson Valley to Parker Competitive Corridor.
PA IV (PA VIII in Draft SEIS): Modify general access 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 access to specific wash, dune, and dry lake areas.
PA V (PA IX in Draft SEIS): Change the 2006 WEMO Plan limitations on motorized access 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 access network in the Rand Mountains-Fremont Valley Management Area.
PA VI (PA X in Draft SEIS): Change the CDCA Plan and WEMO Plan limits on stopping and parking adjacent to designated routes in the WEMO Plan area.	Pg. 78, Stopping and Parking	The CDCA Plan's limitation on stopping and parking more than 300 feet from routes of travel would be modified to meet access and resource protection objectives.

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 Draft Amendment
PA VII (PA XI in Draft SEIS): Reallocate AUMs and modify allotment boundaries for those allotments in DT ACECs, USFWS designated critical habitat, or otherwise inactive.	Pg. 58, Allocations for livestock grazing	Eliminate remaining livestock grazing in DT ACECs and designated critical habitat units (CHU) 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 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 access 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 and critical habitat 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, and 4), 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 2.4, 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 Motorized Vehicle Access 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, and to provide a mechanism for designating, limiting, or closing routes 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 Travel and Transportation Management (TTM) Handbook (H-8342). 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 is consider 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 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 designate 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 Alternative 4 evaluates 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 Travel Management Guidance, 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, and 4, but would remain as it is under Alternative 1.

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 and modified in light of the current on-the-ground situation and the loss of acreage from the Johnson Valley OHV Open Area, and in reconsideration of all 43 CFR 8342.1 minimization criteria.

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

The 2006 WEMO Plan modified access parameters to allow motorized vehicle travel in washes only in those washes that are designated as "open routes" and signed as appropriate (2005 WEMO FEIS, p. 2-156). Previously use of washes was based on the MUC of the area within which they were located (CDCA Plan, 1999 rewrite, p. 78). This general 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 minimization 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 "open" or "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 (also northeast of Calico lakebed off of Chisholm Trail Road). Under Alternative 1, 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 Open, and Cuddeback, Coyote, and Chisholm Lake

Trail lakebeds would remain designated consistent with the surrounding area. Under Alternative 2, Koehn Lakebed would be closed to all motorized travel, and the other three lakebeds would remain "Closed to motor vehicle access, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit". Under Alternatives 3 and 4, Koehn Lakebed would remain "Closed to motor vehicle access, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit", and the other three lakebeds would be designated as "open" to motorized use, subject to specific minimization measures.

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 Alternatives 1 and 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 and 4, 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.

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 route. The 2006 WEMO Plan modified these parameters to further limit stopping and parking in DWMAs to within 50 feet of the route, and camping within DWMAs 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 Alternative 1, the parameters would remain the same as in the 2006 WEMO Plan, which includes a 50 foot limit within DWMAs (now DT ACECs) and 300 foot limit outside of DT ACECs. Alternative 2 would establish a limit of 50 feet in non-DT ACEC and CDNCLs. Alternatives 3 and 4 would establish a limit of 100 feet within non-DT ACECs and CDNCLs.

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 remaining DT ACEC and critical habitat. Under Alternative 2, livestock grazing would be discontinued in DWMAs and in CHU 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 DWMAs and CHU include portions of Ord Mountain, Cantil Common, and Shadow Mountain allotments. These allotments would have their boundaries adjusted to remove the DWMA and CHU lands from the allotments. The AUMs in the DWMA portions of the allotments would be reallocated from livestock forage to wildlife use and ecosystem functions. No changes would be made in Alternatives 1, 3, or 4.

2.1.3 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.
- Supporting activity plans, such as monitoring, law enforcement, and rehabilitation plans.
- 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 trails on public lands outside of OHV Open Areas that meet the goals and objectives of the LUP, consistent with 2006 WEMO Plan and 2016 DRECP LUPA 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 access on public lands within the WEMO Planning area outside of OHV Open Areas. The specific motor-vehicle 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 being made available for public review and comment in Appendix G.

CMA 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, 2006 WEMO Plan, and 2016 DRECP LUPA;
- 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 Travel Management Plans. 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 for mitigation, including rehabilitation of a required equivalent area in another location within the land unit.

2.1.4 Process for Development of Transportation Network Alternatives

The WMRNP is being undertaken, in part, to complete the required Transportation and Travel Management (TTM) planning process for the WEMO Planning area.

As discussed in BLM's TTM Handbook (H-1342-1), every acre of BLM-managed public land must be designated as "Open", "Closed", or "Limited" Areas for OHV use. These area designations were made for the entire WEMO Planning Area in the CDCA Plan, and have not changed since 1980. As part of the planning area's TTM planning efforts, each individual transportation linear feature within "Limited" areas must also be designated as either:

- A Road, Primitive Road, or Trail that is part of the designated travel network;
- Transportation Linear Disturbance (not part of the travel network, i.e., closed routes); or
- A Temporary Route (not part of the travel network, e.g., routes available exclusively to one or more right-of-way or easement holders over a specified timeframe).

Within the designated travel network, individual linear features are also further designated as either "Motorized", "Non-Motorized", or "Non-Mechanized". The travel network alternatives developed for evaluation in the WMRNP consist of different combinations of the "Motorized", "Non-Motorized", "Non-Mechanized", and "Transportation Linear Disturbance" designations, as needed to meet different access and resource protection objectives.

The required process in the TTM Handbook includes mandatory planning-level decisions, optional delineation of TMAs, and then implementation-level decisions, which can be made concurrent with the planning-level decisions, but must be completed within five years following the completion of the applicable LUP amendment. The general outline of the process is as follows:

- OHV Area Designations (mandatory planning-level decision);
- Identification of Travel Management Areas (optional planning-level decision);
- Designation of the travel management network consisting of roads, primitive roads, and trails (mandatory implementation-level decisions), temporary routes, and identification of other linear features as transportation linear disturbances.

In 43 CFR 8342.1, the preamble and the four components require designation of public lands and routes as open, limited, or closed based on 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 following minimization criteria:

a) 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 suitability.

b) 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.

c) 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.

d) 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 natural, esthetic, scenic, or other values for which areas are established. (Note: "Natural areas" and "primitive areas" are not terms used by BLM and thus these factors do not apply).

The above criteria served as the basis for identifying resources to be considered and establishing thresholds to trigger measures to minimize impacts for each linear feature identified in the current inventory under each alternative. These thresholds are referred to throughout this Draft SEIS as "minimization triggers". A detailed description of each step of the route designation process, including the current status and future plans, is provided in the subsections below.

OHV Area Designations

The designation of all acreage as Open, Limited, or Closed to OHV use is required as part of the Land Use Planning (LUP) process for each planning area. The CDCA Plan, which includes the WEMO Planning area, includes OHV area designations. No changes to these designations were proposed in the 2006 WEMO Plan or the recently adopted DRECP LUPA, and none are being considered in this current plan amendment effort.

Designation of Travel Management Areas

Designation of TMAs is an optional tool that BLM Field Offices can use to facilitate their overall TTM process. The designation of TMAs is a land use planning-level decision that must be addressed in the applicable LUP or amendment, which in this case would be an amendment to the CDCA Plan, as amended by the 2006 WEMO Plan and 2016 DRECP LUPA.

In the WEMO Planning Area, the feasibility of establishing TMAs and using them to facilitate TTM planning was evaluated as a result of the scoping process. Following the initial scoping meeting in September 2011, BLM held eight travel designation workshops within the identified TMAs, with the intention of conducting additional scoping that focused on the particular uses, resource issues, and areas of controversy that are specific to each TMA.

One purpose of the current planning effort is to establish TMAs as part of the Motorized Vehicle Access Element of the CDCA Plan. The BLM has identified three Alternatives related to establishment of TMAs, including:

- Alternative 1: No Action, which would include no TMAs being established;
- Alternatives 2 and 3: Establishment of eight TMAs, as developed during the scoping process; and
- Alternative 4 (Proposed Action): Establishment of nine TMAs, based on additional analysis following the scoping period.

Identification of Subregions

Similar to the designation of TMAs, the BLM's evaluation of public comments received during the scoping process led to the definition of subregions that were later used to facilitate the analysis of impacts and identification of route network alternatives. As the public comments were analyzed to identify issues, common issues were found to be grouped geographically based on proximity to population centers, topographical and geologic setting, presence of sensitive resources, historical land uses, and other characteristics. These areas were found to be similar to the geographic boundaries used by BLM's rangers to facilitate law enforcement efforts, and comprise 35 subregions throughout the WEMO Planning area. Based on the issues and similarity to BLM's law enforcement boundaries, BLM staff chose to evaluate the existing route network and develop route network alternatives on a subregion basis. The 35 subregions are defined in Table 2.1-2, and shown on Figure 2.1-1.

There are some distinct differences in the establishment of TMAs and subregions. TMAs are planning decisions used to establish common objectives and coordinate management actions throughout an area. The subregions were used as a tool to facilitate resource-specific analysis, but were not intended to act as administrative units for establishing land use planning objectives and coordinating management actions.

The number, configuration, and names of the subregions in this Draft SEIS have been modified from those evaluated in the previous Draft SEIS. This is due to the designation of two new National Monuments, the Mojave Trails National Monument and the Sand to Snow National Monument, within the WEMO Planning area. Each of these new monuments overlaps the boundaries of multiple subregions that had been used for analysis in the Draft SEIS, so the boundaries have been adjusted to allow each monument to serve as a stand-alone subregion. This

has allowed the BLM to specifically consider the objectives expressed in each national monument's Presidential Proclamation in route network analysis and decisions within these subregions.

Table 2.1-2. Summary of WEMO Planning Area Subregions Used to Support the Route Network Analysis and Development of Draft Implementation Strategies

Subregion	Indicator on Maps	General Location
Broadwell	BL	South third of TMA 1, bounded by Interstate 40 on south, Power line road on the east, Newberry Springs to west, Hidden Valley Rd to NW, and Cady Mountains to the NE.
Afton	AC	North third of TMA 1, bounded by Interstate 15 on NW and NE, Hidden Valley Rd on south west, Mojave National Preserve on the east, Union Pacific Railroad to the south east, Cady Mountains on the south central boundary, and Newberry Springs on the west boundary.
Barstow	BA	West third of TMA 1; directly east of Barstow, north boundary Hwy 15, south boundary Hwy 40. Majority land private, mixed development, military base, railroad, agriculture.
Darwin	DA	Northern end of TMA 2, bounded by Hwy 190 on the north, Death Valley NP on the east, China Lake NWS on the south, and Coso Range Wilderness on the west.
Sierra	SI	Western half of TMA 2, bounded by CDCA boundary and Hwy 190 on the north, China Lake and Darwin Subregion on the east, Hwy 178 on the south, and the Inyo NF and CDCA boundary on the west.
North Searles	NS	Northeastern end of TMA 2, 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.
South Searles	SS	Southeastern end of TMA 2, 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.
Joshua Tree	JT	In TMA 3, 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.
Wonder Valley	WV	In TMA 3, 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.
Rattlesnake Canyon	RC	In TMA 3, bounded by Highway 247 on the north and east, Sand to Snow National Monument on the south, and U.S. Forest Service land to the west.
Juniper Flats	JF	Southwest corner BFO; borders Hwy18 on east, SBNF to south, Mojave River on west & Hwy 247 to north.
Sand to Snow National Monument	SA	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& 28-33. The second area is in Morongo Valley bounded by the National Forest on the west, on the east is Joshua Tree National Park.

Table 2.1-2. Summary of WEMO Planning Area Subregions Used to Support the Route Network Analysis and Development of Draft Implementation Strategies

Subregion	Indicator on Maps	General Location
Mojave Trails National Monument	MT	Bounded by the WEMO planning boundary on the east, and the Union Pacific Railroad and Interstate 15 on the north, Afton Canyon, Broadwell, Twentynine Palms, and the Cleghorn Lakes Wilderness are on the west, and to the south is Joshua Tree National Park.
Jawbone	JB	Northern end of TMA 4, bounded by Hwy 178 on the north, Hwy 14 on the east, Township line 31S on the south, and the CDCA boundary on the west.
Middle Knob	MK	Central section of TMA 4, bounded by Township line 31S on the north, Hwy 14 on the east, Kern and Los Angeles county lines on the south, and the CDCA boundary on the west.
Lancaster	LA	Southern area of TMA 4, bounded by Highway 58 on the north, San Bernardino county line on the east, Angeles NF on the south, and the CDCA boundary on the west.
Fremont Peak	FP	Northwest corner of BFO; N boundary Ridgecrest OF, W boundary Hwy 395, S boundary Hwy 58 & BNSF, E boundary Harper dry lake.
Black Mountain	BM	Northwest portion, east of and similar to Fremont Peak. N boundary Ridgecrest, China Lake, W boundary Fremont Peak, S boundary Hwy 58 & BNSF, E boundary Coolgardie.
Harper Lake	HL	South central portion of TMA 5. North of Highway 58, including Harper Dry Lake.
Coolgardie	CG	North central portion TMA 5. Softer & rounded landscape, between Ft Irwin to north & City of Barstow to south; Calico to east & Black Mountain to west.
Mitchel Mountains	MM	Center of BFO, south center portion of TMA 5. Small pocket of low rugged mountains border north side of Barstow City.
Calico Mountains	CM	Central portion of TMA 5. Borders I15 on south, Ft. Irwin Rd to west & north, Alvord Mountains to east.
Cronese Lake	CL	North eastern portion of TMA 5. Borders I15 on south, Ft. Irwin to north; west from Coyote Dry Lake east to almost Baker.
El Mirage	EM	Pocket area north of El Mirage, west of Hwy395, east of LA county & south of Edwards.
Kramer Hills	KH	West center portion of BFO and northern portion of TMA 6. West boundary is Hwy 395 & east is Helendale Rd; north boundary is Hwy 59 & south boundary is Silver Lakes.
Victorville	VV	Southern portion of TMA 6 west of the Mojave River, and east of the Los Angeles County/San Bernardino County boundary.
Iron Mountain	IM	Area south of Hwy 58, east of Helendale, and north of Route 66.
Ridgecrest	RI	Northeastern portion of TMA 7, including the community of Ridgecrest, bounded by China Lake NWS on the north and east, Golden Valley Wilderness on the south, and Hwy 395 on the west.
El Paso	EP	Northwestern portion of TMA 7, bounded by Hwy 178 on the north, Hwy 395 on the east, Garlock and Redrock-Randsburg Road on the south and Hwy 14 on the west.

Table 2.1-2. Summary of WEMO Planning Area Subregions Used to Support the Route Network Analysis and Development of Draft Implementation Strategies

Subregion	Indicator on Maps	General Location
Rand	RA	Southwestern portion of TMA 7, bounded by Garlock and Redrock-Randsburg Road on the north, Hwy 395 and the Kern/ San Bernardino county line on the east, Hwy 58 on the south, and Hwy 14 on the west.
Red Mountain	RM	Southeastern portion of TMA 7, bounded by Golden Valley Wilderness and Township line 29S on the north, China Lake NWS on the east, Cuddeback Lake Road, Hwy's 395 and 58 on the south, and the Kern/San Bernardino county line on the west.
Stoddard Valley	SV	Area between Victorville & Barstow, south of Hwy 15; east boundary Hwy 247, west boundary Mojave River.
Ord Mountains	OM	Nearly geographical center of field office, center north of TMA. West boundary Hwy 247, east boundary Camp Rock Rd, north boundary I40 & Bartow, south is Lucerne Valley
Newberry Rodman	NR	Located within TMA 8. 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.
Johnson Valley	JV	In TMA 8, includes Johnson Valley OHV Area and public lands as far south and west as Hwy 247.

Development of Travel Network Alternatives in the Draft SEIS

Implementation-level decisions include the designation of individual roads, primitive roads, trails, and temporary route as part of the designated travel network. Roads, primitive roads, trails, and temporary routes to be included in the network would include motorized, non-motorized, and non-mechanized routes. Also, non-mechanized routes in wilderness or other OHV Closed Areas may be included in the network, consistent with current wilderness policies, plans, and minimum tool standards. Travel management plan decisions will ultimately identify selection of management prescriptions for individual routes in the network, including signage; speed limits; stopping and parking restrictions; or restrictions based on season, time of day, or weather.

The history of route designations in the WEMO Planning area was discussed briefly in Chapter 1 and is further discussed in Appendix E. Route designations that were evaluated and adopted in the 2003 Environmental Assessment for the Western Mojave Desert Off Road Vehicle Designation Project were the starting point for the analysis in 2006 WEMO Plan, and the adopted 2003 network, with some modifications as a result of public comment on the 2003 WEMO Plan DEIS, was proposed and analyzed in the 2005 WEMO Plan FEIS. The 2006 WEMO Plan ROD approved the FEIS route designations, with some minor modifications. The 2006 WEMO ROD was vacated by the Court's Summary Judgment order, which required BLM to reconsider the route designations, consistent with the 43 CFR 8342.1 regulations.

In response, BLM has re-developed the WEMO route designation process in accordance with the TTM Handbook. To develop travel network alternatives that provide for a coherent network and

include route designation criteria for consideration in the March, 2015, Draft SEIS, BLM implemented the following steps:

A. Conduct Inventory and Establish the Baseline

- The initial basis of the route network inventory was the 2006 WEMO Plan inventory, as corrected per the errata maps ordered by the Court, and provided by BLM.
- This initial inventory was taken from multiple sources, and its accuracy and completeness varied depending upon the source. BLM then updated the inventory of linear features by reviewing existing features and tracing additional features from USDA's one meter-resolution National Agriculture Imagery Program (NAIP) aerial photography into the Ground Transportation Linear Features (GTLF) geospatial database. The inventory consisted of the 2006 WEMO Plan network (as corrected and adjusted by the BLM pursuant to the Court's order), 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. It also reflects substantial improvement in technical accuracy—many of the previously unrecognized features are simply the result of better photography since 1980 and were not detected at that time, and many others are the result of subsequent land acquisitions and permitting activities.
- This data was ground-truthed during field surveys in 2012 that were conducted by the BLM in order to sign and monitor the open route network.
- The 2012-2013 inventory is intended to include all routes that still have some evidence of recent past or current use. Some routes may be included where recent use no longer is evident as a result of active or passive reclamation, and the inventory will be updated as new on-the-ground information confirms use levels. This is a continuing process that is reported in quarterly reports to the Court and copied to the plaintiffs. A sample review of earlier (2005) and later (2013) aerial photographs indicates that the inventory represents a combination of previously known and undocumented routes that have been on-the-ground for at least the last 8 years, and that the inventory is relatively stable (See Appendix E).
- The BLM identified and collected existing resource data, in Geographic Information Systems (GIS) format, to be considered based on the requirements of 43 CFR 8342.1, the Court's Summary Judgment and Remedy orders, and scoping comments.

B. Document Analytical Process

- BLM developed an Access database that was used to document the potential route segment baseline, the resources associated with each route segment, the preliminary route network recommendations resulting from application of the minimization trigger analysis using GIS, the public input and other non-GIS information captured for each route segment, and the rationale for the final staff recommendations for each preliminary alternative (e.g., documenting instances where professional judgement or other route-specific or resource-specific information may have overridden the GIS based analysis).

- Once alternative development was complete, the Access database was used to generate an analysis of impacts from the route network under each alternative to 43 CFR 8342.1 criteria.
- The Access database facilitates review of the coincidence between a route segment and one or more potential resource issues to clarify or quantify that coincidence, allows entering additional known route use or resource information that may affect the route network recommendation, and provides for the assignment of specific minimization and mitigation for each route segment within each alternative, and modification of the preliminary GIS-developed recommendation, where appropriate.
- This database was used to document adjustments to specific routes in the network based on identification and analysis of new issues and needs.

C. Identify Mechanisms to Use for Alternative Development

- The BLM identified the No Action Alternative, which, based on the Remedy Order, is the route network currently in use until a revised network is approved.
- The BLM identified specific resource values (e.g. riparian areas) that could adequately identify potential resource impacts based on the 43 CFR 8342.1 minimization criteria associated with the network and with individual routes and linear features.
- The Network-wide minimization measures, described in more detail in item D below, were identified for each alternative. The specific parameters for the following were elements of the potential minimization measures:
  - Stopping, parking and camping parameters were modified, specific to each alternative.
  - The approach to routes that had been designated as "Closed" in the 2006 WEMO Plan decision was determined for each alternative, subject to route-specific review.
  - The approach to routes which were undesignated in the 2006 WEMO Plan decision (i.e., features that were added in 2013 as a result of the GTLF inventory update and the on-the-ground signing and monitoring process) was determined for each alternative, subject to route-specific review.
  - The approach to competitive-event routes outside of OHV Open area.
  - The approach to designated parking, staging and camping areas in sensitive locations.
- Staff identified resource minimization triggers that would identify the potential need for minimization and mitigation of resource impacts on the network and on each specific route segment (referred to herein as minimization measures), for criteria in 43 CFR 8342.1. Some of the minimization triggers were based on a distance between the route and the resource (e.g. route within 50 feet of a riparian area), while others were based on co-location of any portion of the route with a resource (e.g., route within a desert wash). In most cases, the comparison of the route to the resource was based on a GIS analysis. In cases where the resource data were not available in GIS,

such as tribal areas, the comparison was done based on the resource specialists' working knowledge of the local area, supplemented with additional field visits and tribal consultations, as needed.

- The BLM developed objectives to be considered as part of the framework for the route network alternatives, considering overall goals in the CDCA Plan, 2006 WEMO Plan, and 2016 DRECP LUPA, as well as public scoping comments.
- BLM adjusted the minimization triggers by alternative, reflective of the objectives for each alternative.

D. Issues and Assumptions Used to Develop Alternatives

- All action alternatives utilize the 43 CFR 8342.1 minimization criteria, as well as factoring in the issues of network connectivity, pertinent resource issues not identified in the 43 CFR criteria, and information on the use of the network and of specific routes, including information provided by the public.
- The specific initial minimization measures and mitigation responses in each alternative vary, and the minimization trigger for closure as the initial minimization measure, is lower for Alternative 2 (closure is more readily triggered) than in Alternative 3 (closure is less readily triggered with mitigation more readily triggered). In Alternative 4, the selection of either initial minimization through closure or other mitigation measures, as a response to conflicts was more sensitive to existing uses and needs.
- Minimization and mitigation measures fall into three categories: (1) network-wide; (2) site- or use-specific; and (3) designation changes to a route segment or entire route.
- Network minimization measures minimize impacts of the network on a network-wide basis. Identifying some of these at the outset of the process helped focus other potential minimization and mitigation.
- The site- and use-specific mitigation responses were developed to specifically respond to the sensitivity and location of the conflict. These are outlined in Section 2.3.
- Designation changes to minimize impacts included route closure or further limitation of motorized and other uses of a route by vehicle type (such as closure to OHV use), by authorized user, or by season of use. These terms are defined in the glossary. For the purposes of this analysis, the following assumptions were made with respect to vehicle use:
  - Narrower routes (single-track motorcycle routes), and then quad routes, are considered less impacting than 4-wheel drive routes;
  - Two-wheel drive improved routes are considered less impacting than 4-wheel drive routes, other factors being equal;
  - Non-motorized routes and primitive trails (in Wilderness Study Areas) are considered less impacting than motorized routes;

  - Non-mechanized routes are considered less impacting than non-motorized routes;
  - Hiking routes are considered less impacting than non-motorized routes and primitive trails; and
  - Seasonal-use routes are less impacting than motorized routes, other factors being equal, and may be less impacting than other routes and trails.

- Other minimization measures address impacts through the development of post-designation implementation strategies, as outlined in the TMPs. These can include, but are not limited to, strategies for:
  - Monitoring patrols;
  - Route improvement, upgrade, or reroute;
  - Law enforcement patrols;
  - Fencing, gates, vehicle exclusion barriers, or other vehicle control mechanisms;
  - Water erosion control structures; and
  - Measures to abate fugitive dust.
- Also, the following assumptions were made with respect to users:
  - General public user routes (not available for competitive events) are less impacting than public user routes that are also available to competitive event users;
  - Authorized use and temporary routes are generally less impacting than routes open to the public; and
  - Administrative routes are less impacting than either authorized or public-use routes.

E. Summary of the Alternative Development

The minimization triggers and measures that were developed by alternative are included in the alternative-specific discussions.

1. The most current resources data was overlain on the 2013 inventoried routes to create a computer-generated Geographic Information Systems (GIS) layer and BLM ran a comparative GIS analysis of the inventoried route segments to identify specific locations of potential resource impacts, based on network wide and resource-specific minimization triggers.
2. Three sets of network-wide measures were identified to focus and minimize impacts, depending upon the alternative: a) No Action; b) Alternative 2; and c) Alternatives 3 and 4.
3. BLM staff reviewed the results of the GIS analysis and other resource comparisons to assure that the minimization triggers would adequately identify impacts to sensitive resources. Where impacts were not adequately identified, the minimization triggers were adjusted accordingly, and the analysis re-run.

4. Based on the types of impacts to sensitive resources, route-specific conflicts with the 43 CFR 8342.1 criteria, the objectives of the each alternative, and the overall resource goals of the WEMO Planning area, the BLM refined the minimization triggers to establish the framework for identification of the initial route network alternatives that would incorporate standard minimization measures (e.g., closures and route limitations) and also identify routes that may need additional mitigation measures or other minimization.
5. For Alternatives 2 and 3, a preliminary alternative was then generated through the GIS exercise that included initial assignment of a preliminary designation and sub-designation of each route segment based on resource impacts. Maps of each of the subregion networks in a particular TMA for each of the alternatives were generated. These maps were integrated with additional resource, recreational, and other information to provide context for the route-specific review and development of the alternative.
    a. Each feature was then reviewed and additional site-specific information applied. In addition, the level of conflicts and issues was assessed.
    b. Initial connectivity needs were identified where the minimization triggers result in routes with some route segments recommended for closure and other segments recommended to stay open.
    c. Conflicts in use were identified where the resulting preliminary alternative results in routes where one or more of the alternative objectives would recommend consideration of different approaches to minimization and mitigation.
    d. Conflicts in analysis were identified where the resulting preliminary alternative results in a route segments that include different approaches to minimization and mitigation.
    e. Connectivity issues and conflicts were addressed based on the relative sensitivity of affected resources, known uses and needs of the route segment, the objectives of the alternative, additional resource and recreation goals for the area, where identified, and other information from staff, other agencies, and the public, to determine if a feature is included within the alternative travel network as Motorized, Non-mechanized, Non-motorized, or else closed and classified as a Transportation Linear Disturbance, and any appropriate additional mitigation measures are identified.
    f. Specific minimization measures were identified by resource, as needed.
6. BLM staff then began the development of the alternative from the preliminary GIS alternative. The maps with the initial designations were reviewed by BLM staff, and adjusted based on the identified conflicts and issues, public or other agency input, site-specific knowledge, and to ensure that the network would be complete and link to adjacent subregions seamlessly to create a travel management area network.
7. For No Action and Alternative 4, Steps 6 and 5 were reversed in order. BLM began with the No Action alternative. The No Action alternative was adjusted only to correct errors and add known rights-of-ways that had been overlooked. Alternative 4

was then developed from the No Action alternative, as corrected. Alternative 4 factored in additional site-specific knowledge, conflicts and issues, public input from scoping and from the subsequent WMRNP Desert Advisory Council (DAC) Subgroup recommendations to the BLM District Manager (the reports are posted on the DAC website at http://www.blm.gov/ca/st/en/info/rac/dac/wmrnp.html), and input from other agencies and from staff, to develop the preliminary Alternative 4 network. Then, as with alternatives 2 and 3, a GIS exercise generated maps in each subregion within a TMA that showed remaining areas of conflict. The GIS exercise was used for the No Action alternative as well, to identify remaining conflicts and issues as well, as a basis of comparison with the other alternatives. No changes were made. Alternative 4 maps indicated which of the preliminary routes and route-segments in the initial Alternative 4 would need site-specific review for additional minimization measures (closure or use limitation) and mitigation measures, and other route options to address unmet needs and continuity of the network where conflicts had been identified.

8. The preliminary identification of a route under all alternatives was modified to (1) complete the network, (2) ensure inclusion of authorized rights-of-way that were known, (3) incorporate other staff or public input, and (4) address level of sensitivities. Where conflicts were identified during these changes, additional minimization measures could be identified for the route. Where sensitivities were known not to exist (false positives) or to be less problematic that the GIS indicated, routes may have been opened.

9. Input on specific types of uses other than motorized use was taken into consideration in development of the alternatives, including non-motorized and non-mechanized trails, and motorcycle routes. One or more alternatives may have been adjusted, based on the overall goals of each alternative, to provide a reasonable range of alternatives for routes that are particularly sensitive, in consideration of network continuity, in consideration of different resource values, or for routes that received a wide range of feedback from the public during scoping.

10. For routes ending at a jurisdictional boundary or private property, the following preliminary designations would generally be made, subject to agency consultation, the need for a reasonable range of alternatives, and potential mitigation measures:

    a. For the Department of Defense, the route would be identified as a transportation linear disturbance (closed) from the last intersection, unless the route leads to an official gated access.

    b. For the National Park Service, US Forest Service, California Parks, or California Fish and Wildlife, route access would be matched to the corresponding designation by the other jurisdiction, unless impacts were further minimized based on the minimization criteria, or site-specific input was provided by the agency. For example if the route on US Forest Service land was motorized, BLM would allow for connection by identifying the route as motorized, or, if the route was subject to an authorization, it would be designated as limited. Otherwise, the route would be identified as a transportation linear disturbance (closed) from the last intersection.

c. For a route entering private property or land of the California State Lands Commission, the route would be designated as motorized to allow for access to the private parcel, to the extent feasible with the current network, and consistent with a review of the minimization criteria. If the property boundary was known to be fenced, or BLM was contacted by owner and asked to not provide access, the route was designated as a transportation linear disturbance (closed) from the last intersection, consistent with network connectivity in at least one alternative, consistent with the minimization criteria.

d. For a route that runs adjacent to other jurisdictions or private property, no specific approach was taken. These routes were addressed based on site-specific factors and the objectives of each alternative.

e. For a route which intersects a nationally designated trail, if the route provides access to a trailhead, it was identified as motorized, unless there is no parking or staging area or the route is located some distance from the designated trail, consistent with the minimization criteria. If the route conflicts with trail use, such as traveling parallel to the trail, then it was generally identified as a transportation linear disturbance (closed). These designations may be adjusted in the Final SEIS, to achieve consistency with the draft DRECP Plan setbacks from designated trails (see http://www.blm.gov/ca/st/en/prog/energy/DRECP/policy.html).

11. After the route-specific review, these administrative draft alternative designations went through a preliminary impact analysis process and additional adjustments may have been made based on the results of the initial analysis of impacts and the overall goals of the alternative.

12. The results of the analysis are documented in an Access Table by route or route segment, referred to as a WEMO ID. These WEMO IDs were used to break apart routes in order to allow more detailed, site-specific analysis of the impacts of its various parts. Each WEMO ID is cross-referenced back to the route name, and includes data for the route, who input data, how the route is being used, adverse impacts, recreational assets, public comments, the alternative designation (transportation and travel uses) under the alternative, and whether mitigation measures are identified.

The alternative networks were displayed on maps and reviewed to verify that the resulting route network within each alternative was viable, met the objectives of the alternative, and was consistent with the 43 CFR 8342.1 minimization criteria, the goals and objectives of the CDCA Plan, as modified herein, and the additional goals and objectives of the 2006 WEMO Plan. Adjustments were made in highly sensitive areas based on issues that were not identified through the GIS analysis and preliminary review. Management reviewed staff recommendations, made adjustments to alternatives, and developed the Draft SEIS Proposed Action.

Modification/Development of Travel Network Alternatives in Draft SEIS

The process described in steps A through E above was used to develop the alternative route networks for Alternatives 1 through 4, which were evaluated in the WMRNP Draft SEIS published in March, 2015. BLM received and evaluated public comments on the route networks

associated with Alternatives 1 through 4 in the Draft SEIS during two rounds of public review in 2015, ending in January, 2016. However, by January 2016, BLM was proposing to make other changes in land use designations and associated conservation goals in the DRECP LUPA, and made the decision to delay consideration of route networks in the WMRNP until the changes associated with the DRECP LUPA became final. The DRECP LUPA was adopted in September, 2016, and its land use designations, modified conservation goals, and Conservation and Management Actions (CMAs) now serve as the framework for consideration of the route network alternatives in this Draft SEIS. As a result, the original route networks associated with Alternatives 2, 3, and 4 have been revised, including re-development of Alternative 4 into the Proposed Action, to incorporate BLM's adoption of the DRECP LUPA, as well as other land tenure adjustments and route network corrections identified based on public comments on the 2015 Draft SEIS.

The changes and updates used to modify Alternatives 2 and 3 and to re-develop Alternative 4 as the Proposed Action, included:

- The route inventory was updated following publication of the Draft SEIS, to include authorized routes which were not previously included in the inventory evaluated in the Draft SEIS, to incorporate the results of field observations and monitoring by BLM staff, and to incorporate public comments on the presence or absence of specific routes. Changes made in response to field observations included elimination of washes that were later determined to not be actually used as routes. BLM continued to update the inventory on an ongoing basis, as staff working in the field identified changes in conditions. The revised inventory was incorporated into modifications of the route networks for Alternatives 1 through 4, and in the development of the Proposed Action.
- BLM conducted detailed review of all alternatives to ensure continuity of the route network. This included identification, review, and, if necessary, correction of designations for small route segments which had been designated as transportation linear disturbances within a longer open route, and vice-versa. It also included review of route designations along single linear features that crossed off and then back onto public lands, to ensure that designations on either side of the adjacent land parcel were consistent.
- The universe of available route designations was expanded to allow designation of some routes as "Competitive", or "C-routes", to be used during authorized competitive events. The Alternative 2 through 4 route networks were reviewed and the C-route designation applied, where applicable. The C-route designation was also applied, where applicable, to routes in the Proposed Action.
- Global changes in designation were made in specific geographic areas, or for specific types of routes. These changes vary by alternative, depending on the objectives of that alternative:
  - Routes within lands acquired by the Department of Defense (DoD) for management as a conservation easement as compensation for the expansion of the Fort Irwin National Training Center. These routes are designated globally as transportation linear disturbances under Alternative 2. Under Alternative 3, the backbone network has been designated as open routes. Under Alternative 4, the designation in these areas is the same as under WEMO 2006 (the No Action

Alternative), except for specific routes on which public comments were considered.

- Routes within the China Lake expansion area. Under Alternative 2, all routes in this area were designated as transportation linear disturbances. Under all other alternatives, the routes are designated as they were under WEMO 2006 (the No Action Alternative).
- Routes within Special Districts (CSA 70 and road districts in San Bernardino County). Under Alternative 2, these routes were designated globally as street-legal use only. Under Alternative 3, the route designations under WEMO 2006 were applied. Under Alternative 4 (the Proposed Action), the street legal designation was applied to San Bernardino County Public Works roads only, and all other roads were designated as they were under WEMO 2006.
- Routes within the Mojave Trails and Sand to Snow National Monuments. Under Alternatives 2 and 3, all routes remained designated as they were in the Draft SEIS. Under Alternative 4, the routes are designated the same as the Alternative 3 routes in the Draft SEIS, but the network will be refined in future work efforts.
- Routes within Lands Managed for Wilderness Characteristics. Under Alternative 2, routes remained designated as they were in the Draft SEIS, and the network will be refined in future work efforts. The same designations apply to the Proposed Action. Under Alternatives 3 and 4, the routes are designated as they were under WEMO 2006.
- Routes with authorized rights-of-way. Under Alternative 2, these routes are globally designated as "authorized only". Under Alternatives 3 and 4 (the Proposed Action), these routes are designated as "motorized", with no sub-designation. Due to the digitization of many rights-of-way into GIS over the last few years, Alternative 1 was updated to reflect necessary access to these rights-of-ways (i.e., routes were changed from "transportation linear disturbances" to "motorized"), which increased the overall mileage of open routes under this alternative from the previous baseline.
- Routes within Small Tracts Act parcels. Under Alternative 2, these routes are globally designated as "street-legal only". Under Alternative 3, these routes are designated as motorized, with no subdesignation. Under Alternative 4 (the Proposed Action), these routes are designated as motorized, with no subdesignation, unless the route overlaps with a San Bernardino County Public Works road. If the route overlaps with a San Bernardino County Public Works road, then it was designated as "street-legal only".

- BLM reviewed and made appropriate changes to route designations under all alternatives based on updated resource and route use information. Based on public comments and efforts associated with the DRECP LUPA, BLM staff identified additional geographic-based resource data associated with soil erosion and biological resources, and incorporated these additional GIS layers into the analysis. Route designations were also modified in response to the identification of actual resource impacts, use conflicts, and/or use requirements through field monitoring, and as reported by the public in route-specific

public comments. Responses to the generic (non-route specific) public comments are attached as Appendix I.

- In the Draft SEIS, the alternative route networks were developed to meet the management objectives associated with the applicable Multiple Use Class and/or special designations such as ACEC, DWMA, and other designation categories. Following the changes in land management classifications implemented through the DRECP LUPA, the designation of the Mojave Trails and Sand to Snow National Monuments, and other mechanisms, the route networks for Alternatives 2, 3, and 4 have been revised, and the route network for the Proposed Action has been developed, to meet the new management objectives.
- The DRECP LUPA implemented CMAs on a Land Use Plan Area-wide basis, as well as specifically for each of the different land management classifications. Newly authorized activities, such as authorization for new motorized routes, would be required to comply with those CMAs. Under WEMO 2006, a disturbance cap limit of 1 percent was applied in DWMAs. Under the DRECP LUPA CMAs, disturbance cap limits have been developed for all ACECs, not just those established for protection of the desert tortoise. In addition, the disturbance cap limits on the areas which were previously designated as DWMAs have been revised, and now range from 0.1 to 1.0 percent. Areas where existing development, including the route network, exceed the disturbance thresholds require mitigation, consistent with DRECP LUPA, unless the routes are currently authorized for use.

The process used to revise the route networks associated with Alternatives 2 and 3 and to develop the network associated with the Proposed Action, was as follows:

- A preliminary analysis of disturbance from the existing GTLF inventory was conducted to identify areas where disturbance cap limits had already been reached.
- For Alternatives 1 through 3, each alternative network was reviewed against disturbance caps in areas where the DRECP LUPA adopted new or modified existing caps, and the analyses re-performed with updated information compiled after the release of the Draft SEIS. Routes not currently authorized for use by the public were identified in areas with exceedances, to identify and apply area-wide mitigation measures, as needed. Authorized routes not yet included in the Draft SEIS were added to the system, for authorized users only.
- A preliminary Proposed Action was then generated through the GIS exercise, which included initial assignment of a preliminary designation and sub-designation of each route segment based on resource impacts, uses, and the disturbance parameters in a particular area. Maps of each of the subregion networks in a particular TMA for each of the alternatives were generated. These maps were integrated with additional on-the-ground, resource, recreational, and other information to provide context for the route-specific review, consideration of public input, and development of the Proposed Action.
- BLM continued to use the database to document potential resource impacts and user conflicts associated with the various alternative route networks. However, modifications were made to incorporate newly available resource inventory data, changes in land management designation, and changes to the available route sub-designations. These modifications were used to revise the previous analyses of the route networks for

Alternatives 1 through 3 with respect to resources and user conflicts, as well as to serve as the basis for the analysis of the route network for Alternative 4.

- An additional assumption was made to support the analysis of impacts. In the analysis of Alternative 4 (the Proposed Action), it was assumed that street-legal use only routes are less impacting than routes also available for OHV users.

The Draft SEIS includes the Alternative 1 through 4 implementation strategies from the previous Draft SEIS, as updated. Route network and implementation strategy changes to Alternatives 1 through 4 are limited to those generated based on new information and analyses completed after the release of the Draft SEIS, unless otherwise indicated. Within Alternative 4, a Proposed Action has been generated in each proposed TMA in response to public input on the Draft SEIS alternatives, new analyses, and additional information. A draft of each of nine proposed TMPs was developed to implement the Proposed Action, including proposed implementation strategies and a map of the proposed routes for each TMA. Each TMP was reviewed to verify that the resulting proposed route network is viable, that the implementation strategy meets the objectives of the Proposed Action, that route designations and minimization measures are consistent with the 43 CFR 8342.1 criteria, with the goals and objectives of the CDCA Plan, as modified herein, and with the additional goals and objectives of the 2006 WEMO Plan and the 2016 DRECP LUPA. TMP adjustments were made based on area- and route-specific issues and public input that were not already identified and addressed through the GIS analysis and preliminary review. Management reviewed staff recommendations, made adjustments, and selected a Proposed TMP for each area. Proposed TMPs are included with the Draft SEIS, and are being made available for a 45-day public review, prior to adoption of Final TMPs.

Resource-Specific Minimization Mitigation Measures

The BLM developed potential network-wide minimization and mitigation measures which varied based on alternative-specific objectives. The network-wide measures addressed area and route-specific impacts, and were the first response to the 43 CFR 8342.1 criteria to minimize impacts in the designation of routes, whether or not additional route-specific measures would be applied. The network-wide minimization measures are outlined under each alternative in Section 2.3.

Table 2.1-3, below, provides a list of resource-specific concerns and has site and/or route specific measures that may be implemented on a case-by-case basis as determined appropriate by the BLM. The minimization measures listed below are examples of potential actions that may be taken when determined appropriate for the particular location and resource/concern that is present along with determined cause(s). The minimization measures employed will be based on a case-by case analysis, based on the implementation strategies in the TMPs. This is not a comprehensive list and additional adaptive management actions may be implemented as needed to address conflicts as they occur or if they increase, and may be based on changing use patterns. The specific measure(s) employed may require additional site evaluation, and are included in the Access Table as they are identified. The Access Table can also be used to track the minimization actions to completion.

In addition to these actions, the BLM will continue to monitor the WEMO Plan Area and as additional information becomes available, the BLM will continue to evaluate the designated road and travel network to ensure it continues to meet the objectives of 43 CFR 8340, the applicable land use plan goals and objectives, the pertinent travel management plan, and applicable laws

and regulations. Route designations or minimization and mitigation action in this plan may be modified based on monitoring results, or to accommodate land use proposals, following appropriate analysis under NEPA.

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Soil Resources	• Select alternative route to minimize off-route disturbance; • Select an alternative route to minimize erosion potential; • Implement seasonal restrictions, designated as motorized only by permit, or designate closure under certain conditions (such as when route is wet); • Limit the route to lower intensity use or prohibit Special Recreation Permitted 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; • Construct and/or install educational information such as signs; • Monitor the route for signs of increasing impacts; • Route closure; and • Determinate that no additional site-specific minimization and mitigation measure is needed based on area or site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Air Quality	• Modify access to direct use to areas with a lower impact; • Harden the surfaces of access route to reduce windborne dust emissions; • Apply water or similar application during high use periods; • Limit the route to lower intensity use or prohibit Special Recreation Permitted use; • Install/Implement Best Management Practices for controlling fugitive dust from vehicular travel; • Install signs; • Route closure; and • Determinate that no additional minimization and mitigation measure is needed based on area or site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Noise	• 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; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on area or site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Cultural Resources – including Tribal Areas	• 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 exclosure of a cultural resource; • Monitor the route for signs of increasing impacts to a sensitive area; • Route closure; • 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).
Grazing	• 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; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Safety	• Remediate abandoned mine land features or other safety hazards; • Install fencing; • Install signs; • Temporarily close 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; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Tortoise Habitat - DT ACECs	• Install wildlife bypass; • Install Wildlife Safety Zone signs; • Modify access to a less impacting designation; • Seasonal use restriction; • Install access type restrictor; • Re-align route to avoid designated area; • Restrict stopping/parking/camping; • Add parking/camping area; • Install barriers and maintain or upgrade existing barriers; • Remove attractants; • Construct or install educational information such as signs; • Install fencing; • Narrow route; • Maintain berms so that they do not adversely impact the movement of desert tortoise; • Monitor the route for signs of increasing impacts to a sensitive resource; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Riparian Areas	• 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; • Install barriers and maintain existing barriers; • Remove attractants; • Construct or install educational information such as signs; • Install step-over; • Install fencing; • Narrow route; • Install/Implement Erosion Prevention Best Management Practices; • Harden water crossing; • Seasonal closure during bird nesting season; • Monitor the route for signs of increasing impacts to a sensitive resource; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Protected Vegetation Resources	• 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; • Consider pollinator plants when conducting restoration activities, in accordance with IM-2016-013; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate) .
Protected Wildlife Resources	• Construct wildlife bypass; • Restrict stopping/parking/camping; • Install barriers; • Maintain existing barriers; • Remove attractants; • Seasonal use restriction; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Desert Washes	• Re-align route to avoid environmentally sensitive area; • Install barriers and maintain existing barriers; • Remove attractants; • Construct or install educational information such as signs; • Install step-over; • Install fencing; • Seasonal or complete closure; • Monitor the route for signs of increasing impacts to a sensitive resource; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Golden Eagles – active nests	• Seasonal closure during nesting season; • Install access type restrictor; • Re-align route to avoid environmentally sensitive area; • Limit the route to lower intensity use or prohibit Special Recreation Permitted use; • Restrict stopping/parking/camping; • Install barriers; • Remove attractants; • Construct or install educational information such as signs; • Monitor the route for signs of increasing impacts to a sensitive resource; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Mohave Ground Squirrel - core areas	• Construct wildlife bypass; • Install Wildlife Safety Zone signs; • 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 parking/camping area; • Install barriers and maintain or upgrade existing barriers; • Remove attractants; • Construct or install educational information such as signs; • Install fencing; • Narrow route; • Monitor the route for signs of increasing impacts to a sensitive resource; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Wildlife Corridors	• Construct wildlife bypass; • Install Wildlife Safety Zone signs; • 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 parking/camping area; • Install barriers and maintain or upgrade existing barriers; • Remove attractants; • Construct or install educational information such as signs; • Install fencing; • Narrow route; • Maintain berms so that they do not adversely impact the movement of desert tortoise; • Monitor the route for signs of increasing impacts to a sensitive resource; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on area evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Springs	• 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; • Construct or install educational information such as signs; • Install step-over; • Install barriers; • Narrow route; • Install/Implement Erosion Prevention Best Management Practices; • Seasonal closure during bird nesting season; • Monitor the route for signs of increasing impacts to a sensitive resource; • Route closure; and • Determine that no minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Rare and Special Status Plant Species	• 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; • 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; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Multiple User Conflicts	• 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 (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).
Visual Resource Management (VRM) Class	• Modify access to a less impacting designation; • Restrict stopping/parking/camping; • Install barriers and maintain or upgrade existing barriers; • Remove attractants; • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate) .

Table 2.1-3. Potential Resource-Specific Minimization and Mitigation Actions

Resource Concern	Possible Minimization and Mitigation Action(s)
Special Designation Areas (ACECs, CDNCLs, Lands Managed for Wilderness Characteristics, National Monuments, Wilderness Study Areas)	• 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 the route for signs of increasing impacts to a sensitive resource; • Other resource-specific mitigation, depending on the nature of the impacted resource(s); • Route closure; and • Determine that no additional minimization and mitigation measure is needed based on site evaluation (i.e., ground truthing of GIS data indicates no resource impact or existing minimization and mitigation is adequate).

2.2 Plan-Level Goals and Objectives

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. Section 2.2 outlines plan-level goals and objectives for each alternative, and include both travel management and grazing program management. 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 West Mojave 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. They also provide one of the key minimization measures for potential impacts from the route network.

2.2.1 Alternative 1: No Action LUP-Level Goals, Objectives, and Strategies

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 Motorized Vehicle Access (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, to the degree possible, avoid adverse impacts to desert resources.
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 use and enjoyment of desert recreation opportunities by special populations.

Neither the 2006 WEMO Plan, nor the 2016 DRECP LUPA provided additional objectives specific to travel management. 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 to the CDCA Plan's Recreation Element objectives made in the 2016 DRECP LUPA include:

1. 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.
2. Protect road, primitive road and trail access to SRMAs, ERMAs, 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 DWMAs 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 cattleguards would be designed and installed to prevent entrapment of desert tortoises. Existing cattleguards would be modified to prevent entrapment of desert tortoises.
9. Establish designated livestock exclusion areas when ephemeral production is less than 230 Ibs/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 make 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 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 permanently eliminate livestock grazing on the allotments.

2.2.2 Alternative 2: Resource Conservation Enhancement LUP-Level Goals, Objectives, and Strategies

Alternative 2 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 and modify the livestock grazing program to provide for additional species conservation and desert tortoise recovery in the DT ACEC and CHU. The transportation management goals and objectives of the Resource Conservation Enhancement alternative have an increased focus on the use of two minimization measures: (1) route closure 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. The Motorized Vehicle Access (MVA) Element of the CDCA Plan goals would be modified as follows:

1. Provide for constrained motorized vehicle access in a manner that recognizes the overall sensitivity of the West Mojave Planning area, while addressing the needs of all desert users, private landowners, and other public agencies.
2. When designating or amending areas or routes for motorized vehicle access, to the degree possible, avoid adverse impacts to desert resources.
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. 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 Alternative 2 and associated TMPs.

5. 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.
6. Further 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.
7. Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.
8. Adjust management approach to accommodate changing access needs, visitor use patterns and preferences.
9. Make available the use and enjoyment of desert recreation opportunities by special populations, non-mechanized, and non-motorized users, as well as motorized and motor-dependent users, as resources permit.
10. Further limit stopping, parking, and camping outside of DT ACECs and CDNCLs to 50 feet, which would be equivalent to the 2006 WEMO Plan limitations within DWMAs.
11. In addition to the Parish's Phacelia lakebed closures, close one additional dry lake to vehicular use (Koehn Dry Lake) that was designated as "Open" in the 2006 WEMO Plan.
12. Eliminate the Johnson Valley to Parker Competitive Event Corridor in addition to the Barstow-to-Vegas Competitive-Event Corridor which was already eliminated in the 2006 WEMO Plan. Also, 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.
13. 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. The specifics of these plan-level parameters are outlined in Section 2.3.3 of this chapter, along with other elements of Alternative 2.
14. Eliminate livestock grazing from all portions of the DT ACECs and CHU. Adjust allotment boundaries and reduce the permitted use (AUMs) allocated on the remaining portions of those allotments outside of the DT ACEC and CHU.

Key changes to the CDCA Plan Access and Recreation Elements made in the 2006 WEMO Plan included adjustments to network-wide motor vehicle stopping, camping and parking parameters within DWMAs, to vehicle use of washes and on of specific lakebeds, and to competitive use of routes and designated competitive-event corridors. Alternative 2 would further constrain these objectives.

2.2.3 Alternative 3: Public Lands Access LUP-Level Goals, Objectives, and Strategies

Alternative 3 would supplement the 2006 WEMO Plan to adopt a comprehensive transportation and travel management strategy for the WEMO Planning Area. The transportation network under the Public Lands Access alternative places an increased focus on strategies that maintain access to serve existing management activities, provide access on historic motorized 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 route closures, 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 route closures and management of a larger network. The Motorized Vehicle Access (MVA) Element of the CDCA Plan goals would be modified as follows:

1. Provide for a wide range of dispersed motor-vehicle access opportunities in the West Mojave 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.
2. When designating or amending areas or routes for motorized vehicle access, to the degree possible, avoid adverse impacts to desert resources.
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. 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.
5. 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.
6. 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 the same as the No Action Alternative.
7. Where needed, designated camping, parking, and staging areas, and trailheads would be identified on previously disturbed areas that connect with the designated route network, with appropriate signing and access restrictions. Staging areas, parking areas, trailheads, and other facilities that support these goals and objectives would stress partnerships and joint management and implementation strategies. Sensitive areas, connectivity with OHV Areas, and supporting recreational opportunities would be stressed.

8. 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.
9. Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.
10. Adjust management approach to accommodate changing access needs, visitor use patterns and preferences.
11. Make available the use and enjoyment of desert recreation opportunities by special populations, non-mechanized, and non-motorized users, as well as motorized and motor-dependent users, as resources (i.e., funding, staffing) permit.
12. Retain the Parish's Phacelia lakebed closures adopted in the 2006 WEMO Plan, and close one additional dry lakebed to vehicular use (Koehn Dry Lake) that is currently designated as "Open".
13. Open three other lakebeds (Cuddeback, Coyote and Chisholm Trail Lakes), which are currently restricted to designated routes across the lakebed.
14. Eliminate the Johnson Valley to Parker Competitive Corridor in addition to the Barstow-to-Vegas Competitive-Event Corridor which was already eliminated in the 2006 WEMO Plan.
15. Allow for designation of competitive-use "C" routes outside of OHV Open Areas, consistent with adopted ACEC parameters, TMA goals, and route designation parameters.
16. 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.

Key changes to the CDCA Plan Access and Recreation Elements' Objectives made in the 2006 WEMO Plan included adjustments to network-wide motor vehicle stopping, camping and parking parameters, vehicle use of washes and of specific lakebeds, and competitive use of routes and designated competitive-event corridors. Alternative 3 would further constrain some of these objectives and loosen restrictions on others, on a site-specific or subarea-wide basis.

The alternative would not amend the livestock grazing element contained in the CDCA Plan, as amended by the 2016 DRECP LUPA, and would not eliminate 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.

2.2.4 Alternative 4: Proposed Action LUP Goals, Objectives, and Strategies

Alternative 4 would supplement the 2006 WEMO Plan to adopt a comprehensive transportation and travel management strategy for the WEMO Planning Area. Alternative 4, the Proposed Action, provides for motorized vehicle 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 alternative utilizes

the No Action Alternative as its basis, responds 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. The Motorized Vehicle Access (MVA) Element of the CDCA Plan goals would be modified as follows:

1. Provide for a wide range of dispersed recreation opportunities and diverse experiences in the West Mojave Planning area outside of designated OHV Open Areas considering local community and regional goals and objectives, relative resource sensitivities, current uses, and implementation strategies.
2. When designating or amending areas or routes for motorized vehicle access, to the degree possible, avoid adverse impacts to desert resources.
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. 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.
5. 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 the same as the No Action Alternative.
6. Where needed, designated camping, parking and staging areas, and trailheads would be identified on previously disturbed areas that connect with the designated route network, with appropriate signing and access restrictions. Staging areas, parking areas, trailheads, and other facilities that support these goals and objectives that would be utilized would stress partnership management and implementation strategies. Connectivity with OHV Areas would be a priority.
7. 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.
8. 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.
9. Manage recreation use to minimize user conflicts, provide a safe recreation environment, and protect desert resources.

10. Adjust management approach to accommodate changing access needs, visitor use patterns and preferences.
11. Make available the use and enjoyment of desert recreation opportunities by special populations, non-mechanized, and non-motorized users, as well as motorized and motor-dependent users, as resources permit.
12. Retain the Parish's Phacelia lakebed closures, adopted in the 2006 WEMO Plan, and close one additional dry lakebed to vehicular use (Koehn Dry Lake). Open three other lakebeds (Cuddeback, Coyote, and Chisholm Trail Dry Lakes) that are currently restricted to designated routes across the lakebed.
13. Eliminate the Johnson Valley to Parker and the Barstow-to-Vegas Competitive-Event Corridor.
14. Allow for designation of competitive-use "C" routes outside of OHV Open Areas, consistent with adopted ACEC parameters, consistent with TMA goals. Consider another competitive route corridor to replace the Johnson Valley to Parker Corridor, if one can be located that does meet the minimization parameters for sensitive resources.
15. 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.

Key changes to the CDCA Plan Access and Recreation Elements' Objectives made in the 2006 WEMO Plan included adjustments to network-wide motor vehicle stopping, camping and parking parameters, to vehicle use of washes and of specific lakebeds, and to competitive use of routes and designated competitive-event corridors, on a site-specific or subarea-wide basis. Alternative 4 would further constrain some of these objectives and loosen restrictions on others.

The alternative would not amend the livestock grazing element contained in the CDCA Plan, as amended by the 2016 DRECP LUPA, and would not eliminate 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.

2.3 Description of Route Network and Network Implementation Alternatives

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. Land-use planning level alternatives are outlined in Section 2.2 of this Chapter. Section 2.3 outlines implementation-level decisions, including the specific route designations under each alternative and other implementation components, and provides minimization measures for the alternatives. The Proposed Action includes a combination of minimization measures outlined under the other alternatives, as well as additional considerations based on the adopted DRECP LUPA strategies and new data. The Proposed Action has taken into consideration comments on the Draft SEIS from local jurisdictions, other agencies, tribes, and the public, as well as further consultation with USFWS and the SHPO and ACHP, and reflects ongoing data collection and GIS updates. The specific route selections and implementation strategies proposed are provided in the nine Proposed TMPs, each included as a stand-alone document within Appendix G of this Draft SEIS.

2.3.1 The Use of the "Baseline" of Routes in the Development of Alternatives

As discussed in Section 1.1.4, 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 status quo, the BLM began two efforts in 2012 that would provide a comprehensive baseline of routes for 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 improve mapping accuracy. At the same time, high quality 1:2000 aerial photography from 2009 was being reviewed by GIS personnel and was to provide a digital record of all the open routes and any unauthorized routes that intersected the open routes. The result of these two concurrent inventories is a baseline of primitive routes (ground transportation linear features) in the planning area that totals approximately 16,000 miles.

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 8,000 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 and Appendix E, 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 closed to all motor vehicles 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 closed unless they are signed as "open". Based on these assumptions the miles of actual route closures 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 route closures 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 Draft SEIS will be incorporated into the Final SEIS.

Routes that are discovered or developed after adoption of this amendment will be evaluated for addition, exclusion, and limitation at the time of identification, 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 by the 2006 WEMO Plan and 2016 DRECP LUPA, applicable travel management plans and other pertinent area plans, and include compliance with other laws and regulations including but not limited to ESA and National Historic Preservation Act (NHPA) compliance.

Each of the alternatives analyzed in the Draft SEIS were developed by identifying the resource protection and transportation access 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 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.

2.3.2 Implementation of the WEMO Route Network

This section provides general and specific strategies for the implementation of the each alternative and the continued management of travel and transportation in each TMA, including maintenance intensities and legal access needs, needed improvements, education and outreach, monitoring and restoration.

2.3.2.1 Maintaining the Transportation Network

Adaptive management measures will be implemented on an appropriate route-specific or area-wide basis to address ongoing transportation needs and issues. Several network maintenance activities may result in changes to or new specific route designations. These maintenance activities include route monitoring, NHPA Section 106 historic property identification efforts pursuant to the Programmatic Agreement, rehabilitation, land acquisitions and disposals, new land use authorizations, adjacent land uses, and changing vehicle types and public land use patterns. Resource-specific measures that may be applied are described in Table 2.1-3. Alternative-specific measures that may be applied are described in Tables 2.3-5 (Alternative 2), 2.3-8 (Alternative 3), and 2.3-9 (Alternative 4).

As route network monitoring proceeds, additional information will verify the existence and condition of the routes in the 2012-2013 inventories. If linear features in the WMRNP route inventory show evidence of natural rehabilitation and are not readily apparent to the casual passerby on-the-ground, documentation of such conditions will be recorded and then these linear features may be removed from the inventory. Closing a route in the route network based on

previously inaccurate or incomplete information on its status will not require additional NEPA compliance.

If linear features are found on the ground that show signs of use but were missed in the inventory process, and through document review can be determined to have existed at the time of initial project development, they will be added to the route inventory, and evaluated through the route designation process to determine whether they should be designated as available for use or not, with appropriate NEPA and Endangered Species Act compliance, as well as compliance with the cultural resources laws and the adopted Programmatic Agreement for the WMRNP.

As lands are newly acquired, transportation linear features would be inventoried and designation would comply with applicable federal regulations and statutes. Once designated, these routes would be incorporated into the overall Transportation System, with appropriate NEPA and Endangered Species Act compliance, as well as compliance with cultural resources laws and the adopted Programmatic Agreement for the WMRNP. The route network on acquired lands will be consistent with conservation programs and area objectives, the adopted Programmatic Agreement and Historic Properties Management Plan, and complement the existing Transportation System.

When a route in the Transportation System is no longer available for its intended use (e.g., if lands are disposed of, or a project disrupts the use of the route), alternative access may be identified and analyzed for potential inclusion in the route network. Other adjustments may also be made to the system to maintain the intended level of access through the affected area.

As future inventory activities and additional information becomes available within the WEMO planning area, adjustments to the route network may be necessary for the protection of cultural and natural resources, to address safety concerns or other conflicts, or to manage changing use patterns or vehicle types. Factors that will help determine if a change in the route network is needed include risk level, the potential reduction in impacts to resources, the sensitivity of the route's location, and the levels or types of use a route receives.

Resource conflicts will be identified via monitoring, and will include evaluating effects on current and future land uses, as well as impacts to resources such as noise and air pollution, soil erosion, stream sedimentation, nonpoint source water pollution, and landowner property rights. Monitoring would also identify impacts to listed and sensitive species habitats, wildlife, cultural resources, and historic properties listed or eligible for listing to the National Register of Historic Places, special areas, and recreational asset values.

BLM will continue to evaluate the designated route network, to ensure it meets the objectives of 43 CFR 8340, CDCA Plan goals and objectives, and other applicable laws and regulations. The network will be reviewed to assess its effectiveness at meeting current travel management objectives and at addressing current and changing land use plan goals and objectives. All required legal compliance (NEPA, ESA, and NHPA Section 106) would precede needed modifications to the Transportation System.

2.3.2.2 Ground-Disturbing Activities

1. Ground-disturbing activities in ACECs and NCLs are subject to disturbance caps. In ACECs and NCLs, for ground-disturbing activities occurring outside of the current route

prism, the area of disturbance needs to be calculated and included in future disturbance totals.

2. Prior to conducting ground disturbance in areas that have exceeded disturbance caps, a strategy for mitigation of disturbance and timeline for implementation of the minimization measures need to be developed, except in the following cases:
    a. Any portion of the proposed activity is located on land previously disturbed by an existing, valid authorized/approved action.
    b. Land use authorization assignments and renewals with no change in use.
    c. BLM activities designed and implemented to reduce existing disturbance, such as ecological, cultural, or habitat restoration or enhancement activities.
3. Ground-disturbing activities that enhance the values of the ACEC and CDNCL are exempt as outlined in the 2016 DRECP LUPA.

2.3.2.3 Data / Inventory Management

1. All data pertaining to linear transportation features will be stored in the National GTLF dataset. This dataset is the daily, up-to-date working version of the BLM's Transportation System.
2. As changes to the Transportation System occur, it will be the responsibility of the authorizing division/program to ensure the GTLF dataset is updated in a timely fashion with new information and/or decisions regarding the linear travel feature. The BLM will update decision data as new decisions are made, overwriting previous decisions if appropriate. The BLM state offices will regularly maintain the data and synchronize it with the national dataset to keep it up to date.
3. For restored linear travel features, the features shall be moved to a proprietary dataset of restored travel features, and removed from the route inventory.
4. As much of the data was collected by interpretation of aerial photography, efforts would be made to upgrade any incomplete or unknown attributes (e.g., surface type, drivability) in the GTLF through field investigation. This workload may be completed with formal Federal Asset Management System (FAMS) condition assessments (primarily for Road: Collector routes), through partnerships, volunteers, or internship arrangements, or with site-specific projects, as funding and resources allow.

2.3.2.4 Ghost Routes

Over time, travel patterns change, resulting in designated routes no longer being used. If a route is not used over a long enough period of time, the route could become naturalized and indistinguishable from the surrounding natural environment to the casual observer. These types of routes are often called "ghost routes".

1. If "ghost routes" are discovered during implementation and monitoring efforts, their condition would be documented and then they would be removed from the designated route network and inventory.

2.3.2.5 Restoration

Restoration activities (i.e., active efforts to facilitate the rehabilitation of routes that are classified as transportation linear disturbances), may be pursued based on site-specific factors. Routes for active restoration are prioritized and pursued based on two general principles, as well as planning area and TMA-specific priorities. The two general principles governing response to, and active restoration of, transportation linear disturbances are Rapid Response and Damage Avoidance/Abatement. These two principles are applied in conjunction with the restoration priorities discussed in the rest of this section.

Rapid Response: The concept of the rapid response approach is to actively eliminate evidence of new illegal linear features before they become burned into the ground through continued use and when, generally, active restoration involves a minimal amount of resources and effort. For a rapid response system to be successful, on-the-spot addressing of disturbances that take a minimum of effort and only hand-equipment to repair, is provided for in conjunction with network maintenance activities. In addition, a system to communicate and follow-up on field observations and monitoring results is proposed, to monitor rapid response activities and to provide for efficient follow-up when restoration cannot be addressed on-the-spot or in conjunction with Sensitive Resource Damage Avoidance and Abatement.

Sensitive Resource Damage Avoidance and Abatement: The concept of the sensitive resource damage avoidance and abatement approach is, where identified, to prioritize and pursue active restoration of transportation linear disturbances to avoid or abate imminent damage to sensitive resources, reduce safety hazards, and otherwise to pursue restoration as further described here:

1. Transportation linear disturbances may be actively restored through human intervention or allowed to passively rehabilitate through natural environmental processes.
2. Routes classified as transportation linear disturbances on BLM land will typically be allowed to reclaim naturally. Most transportation linear disturbances are lightly travelled routes that do not contribute to the continuity of the overall travel network. Therefore, the standard method of restoration shall be to remove the route from public access maps (including geographic data, e.g., shape files, interactive maps). The route shall then be left to restore passively.
3. “Closed” signs will be posted as needed, in higher priority areas first (see item 5), where continued use occurs or is likely.
4. The BLM recognizes that posting a “closed” sign may not be adequate to affect user behavior in all cases. Where signing and removal of routes from maps are not effective in deterring use, restoration techniques are applied to obliterate evidence of the transportation linear disturbance from public view – to at least the visual horizon, as seen from the intersection with a route designated for public use. The application of restoration techniques to transportation linear disturbances is also used where necessary to speed the rehabilitation process and minimize the impact on visual resources. Monitoring results are used to determine the need for additional restoration actions.
5. Active route rehabilitation work is utilized where the first phase has not proven to be successful or where route conditions are clearly beyond the capability of the first phase to be addressed. When active restoration is pursued, transportation linear disturbances are generally restored based on the following priority guidelines – although advantage will be

taken of opportunities for restoration in conjunction with other projects or authorizations. Furthermore, funding for restoration would be sought based on these priorities. The priority guidelines for restoration are:

a. Any new transportation linear disturbances discovered through routine patrol and monitoring that can be immediately addressed, consistent with the Rapid Response approach.

b. Transportation linear disturbances within critical habitat (including ACECs designated to protect critical habitat), that may affect listed cultural sites or are resulting in significant erosion impacts.

c. Priorities for restoration specific to each TMA include:

- Routes that are resulting in trespass into designated Wilderness Areas.
- Transportation linear disturbances and other surface disturbances that are within core population areas.
- Routes that are impacting cultural sites listed on the National Register of Historic Places.
- Items that are affecting the visual resource classification for an area.

d. Other transportation linear disturbances within ACECs, CDNCL lands, or national monuments.

6. Options for active restoration may include, but are not limited to:

a. De-compaction of route trail tread surface using hand tools or by heavy equipment using ripping attachments.

b. Soil pitting to contour the soil to direct water flow and draw wind-blown seeds to focal spots creating micro-sites to increase seed germination and small plant growth.

c. Soil imprinting by raking small trenches to roughen the texture of the surface soil to facilitate collection of wind-blown seed.

d. Raking, sweeping, or blowing away the evidence of tracks when little or no vegetation trampling or soil compaction has occurred.

e. Re-texturing disturbed soil surfaces with small rocks and gravel.

f. Terracing with berms to contour slopes of hill climb areas to slow and disperse water flow.

g. Use of wood, rock, straw wattles and/or sterile (certified weed free) rice straw bales as water-control features and to assist in erosion control.

h. Vertical mulching (the installation of dead plant material) at the beginning of transportation linear disturbances up to the line of sight to disguise the transportation linear disturbance and deter additional use.

i. Installation of hard barriers such as fences, rocks, boulders, wooden barriers, or bollards.

j. Re-vegetation using native species plantings or through the scattering of native seeds gathered from live plants, seedpods still attached to plants, or other sources include commercial vendors. Vegetation maybe transplanted from other nearby sites; sensitive plants identified in the *California Desert Native Plants Act* should not be transplanted unless their loss is imminent (e.g., during new project construction) and/or any appropriate permit is obtained.

k. Signing to educate visitors about the area and management of the area including recreational, directional, special designation, or informational signs as needed.

l. Removal of litter and other unsightly or potentially dangerous manufactured materials or structures. Removal may include large structures and materials of non-historical value such as abandoned automobiles, fences, and buildings, including those built in trespass, and particularly those that are operating as "attractive nuisances" encouraging vehicle travel off of the designated route system.

7. Active restoration activities will be consistent with requirements of the Biological Opinion and the Programmatic Agreement.
8. Site-specific minimization measures may be developed at popular and sensitive destinations that are experiencing substantial impacts from access, where appropriate. All NEPA and consultation requirements will be followed. If measures are taken in wilderness areas, BLM would perform a minimum requirements analysis to determine if the action is the minimum necessary to protect wilderness character.
9. In addition to restoration techniques, minimization and mitigation measures (e.g., signing, fencing, education, closing routes where appropriate) will be used to address known safety issues, conflicts between users, and impacts to resources.
10. Vegetation removed during the construction of new projects, roads or trails may be transplanted to some or all of a disturbed area to disguise transportation linear disturbances and/or facilitate restoration.
11. Weed treatment and control measures may be implemented in conjunction with restoration activities to promote re-vegetation with native plants and prevent any new weed establishment and/or control of existing weed sources, as needed.

2.3.2.6 Route Numbering

Each route in the Transportation System is to be assigned a meaningful route number to facilitate implementation. Wherever feasible, consistency with the current route numbering system will be maintained, to facilitate public recognition of the route network on the ground and on maps, consistent with the principles listed below.

All routes also have an associated WEMO ID, including both routes that will be included in the Transportation System and routes that will not be included in the Transportation System such as transportation linear disturbances. Transportation linear disturbances do not have a route number, so are exclusively identified by their WEMO ID. WEMO IDs have been used internally to distinguish route segment features for planning and analytical purposes. The WEMO IDs will remain in the GTLF system to facilitate and track implementation of the TMP.

The current WEMO ID planning numbers are not always intuitive because they have been assigned to features throughout the inventory process and are not preceded by a subregion identifier; for instance, a linear travel feature with a WEMO ID number 3250 could be intersected by a feature with WEMO ID number 5836 as a result of the two segments being added to the inventory at different times in the inventory process.

The following route numbering protocol is to be used for all roads, primitive roads, and trails that are designated as available for travel purposes, and will be reflected on future route signing and maps:

1. Route numbers are given a two letter prefix that correlates with the geographic subregion where the route occurs (e.g., Ridgecrest Subregion is RC).
2. Route numbers have been carried forward for designated routes that were assigned numbers prior to the WMRNP, wherever possible. Newly designated route segments that connect with and could serve as extensions of these previously designated routes are generally assigned the established route number. There may be circumstances, such as a change in use, where a unique route number is more appropriate.
3. The establishment of route numbers for routes that were not previously designated will be done by first reviewing which route segments (WEMO IDs) could be joined together to allow more continuous traffic flow and less confusion for the visitor. These groups of route segments would then be given a route number that coincides as much as possible with the already established route numbering system in the region.
4. Routes that have a subdesignation of "Motorcycle" only will have the letter "M" added to the end of the route number (e.g., JF350M).
5. Routes that have a subdesignation of "Competitive" will have the letter "C" as their prefix instead of the usual prefix that correlates to the geographic subregion.
6. As needed, temporary routes will be numbered in an identical fashion as other routes except that a "T" will be appended to the end of the route number (e.g., SE789T) to distinguish them from routes in the Transportation System (also see exceptions noted below).
7. The following exceptions to this numbering technique may be used:
    a. Routes that are associated with a ROW and are restricted to authorized use only (have "authorized/permitted" as the subdesignation) may be numbered with the ROW number (e.g., CACA123654).
    b. If a route originates from a US Forest Service route (and is numbered with a US Forest Service route number), the US Forest Service route number may be used on the BLM portion of the route with the replacement of the "FS" in the number with "BLM" to indicate the change in jurisdiction.
8. Route numbers are to be recorded in the BLM ground transportation linear features (GTLF) GIS layer and associated with planning numbers (WEMO IDs) to ensure they can be traced back to the decisions in the TMPs or subsequent implementation decisions. However, in general, once route numbering as described herein is completed, only route numbers will be used to refer to routes on public maps, signs, and in other official publications.

2.3.2.7 Education and Outreach

Education and outreach is primarily to be achieved through on-the-ground signing, maps, strategically placed kiosks, electronic information, and through partnerships with other organizations, as described below. Furthermore, routine BLM patrols (Park Rangers, volunteers, and Law Enforcement Rangers) would serve to educate visitors with regard to the Transportation System. On-the-ground signing is a key transportation network implementation priority. Currently, open routes that remain open have already been signed and remain available for use. Newly designated routes are not available for use until they are initially signed as such. Likewise, signs must be removed on newly closed routes to facilitate compliance and enforcement.

Signing

1. Signing is designed to provide the public with clear and correct information to avoid off-network travel, to prevent damage to sensitive resources and areas, to prevent use conflicts, and to direct the public to popular destinations. Signage focuses on the open route network to increase the visibility of open routes, thus discouraging interest in closed routes. The signing of closed routes will be done as needed, consistent with the signing strategy. Signage will conform to guidelines in Appendix 7: BLM Travel and Transportation Management Signage of the *BLM Travel and Transportation Handbook, H-8342* in addition to the *BLM Sign Manual, M-9130*, or other current guidance. New open routes will not be available for use until they are initially signed as such.
2. Under the signing strategy, initial signing updates will proceed by subregion, and include "open" routes (i.e., any route not classified as a transportation linear disturbance).
3. Signing of routes will be completed after publication of the WMRNP ROD.
4. All open routes will be signed at all intersections, including intersections with identified transportation linear disturbances, if clearly visible, according to current BLM signing standards. Specific sign or communication/engineering, per BLM policy, currently includes:
    a. Designated routes are marked with brown flexible markers with standard decals.
    b. "Open" routes are marked with route identification letters and numbers and arrow decals at intersections and along the route as necessary to indicate routes that are "open" for vehicle travel.
    c. Routes designated as "non-motorized" and "non-mechanized" are marked with standard symbol decals indicating what mode(s) of transportation is allowed.
    d. "Limited Use Only" routes are marked with specific limitation symbol and/or other appropriate information indicating the type of restriction (subdesignation) for that route, for example, if the route is available to specified vehicles such as motorcycles, or authorized users.
5. Removal of signs on newly closed routes (i.e. routes that were open under the 2006 WEMO Plan, but are now designated as transportation linear disturbances) is a priority.

6. Priorities for signing routes within each subregion are based on resource values, access, and proximity to urban areas or highways.
7. Signing related to specific projects, resource concerns, destinations, or re-routes would be accomplished in conjunction with project authorizations.
8. Routes will be signed in a manner consistent with the desired setting for the area (e.g., the frequency of signing in-between intersections is lower in backcountry areas than in front country areas). The numbers of signs and additional types of signing may vary based on subsequent activity-level planning, but the standard signing required is a brown fiberglass marker placed along the side of the route indicating the allowable uses and the route name and/or a route number (or just route number for unnamed routes).
9. Temporary routes with the subdesignation of "authorized/permitted" will be signed at their intersection with routes available for public use. The standard signing method will be one brown fiberglass marker placed along the side of the road with an "Authorized Use Only – [Route Number]" vinyl sticker. The responsibility for this signing may rest with the BLM, or may rest with the authorized user depending the type and fashion of authorization provided. Should access along these routes be restricted with a gate, the gate will also be signed "Authorized Use Only" and provide at a minimum the telephone number to the BLM office, but may include a telephone number for the authorized user.
10. When staff installs route signs, a GPS unit will be used to record the location of each route sign installed. This GPS data will then be used to both develop maps with accurate and up to date route information and also assist in future monitoring, maintenance, and enforcement efforts.

Maps

1. The planning maps associated with the TMPs label the routes with the planning number (WEMO ID). Once a route network is adopted, these numbers will no longer be used on maps for the public.
2. Initial mapping will include maps posted on the BLM website and on existing kiosks located at key entrance points to the subregions.
3. Future maps may include both traditional hard copy maps that are provided through BLM and non-BLM outlets and partners, and electronic media versions. These may include downloadable maps that can be utilized by an electronic device, web-downloadable maps and interactive maps from the BLM or non-BLM sites that provide information on such features as specific destinations, trailheads, campsites or other items of importance and interest to the public.
4. All new public maps created for the purpose of identifying routes of travel, will, at a minimum, use the route number to identify the routes, will indicate public land boundaries, and will include some geographic locational system for orientation. Maps may include a route name (if produced at sufficient scale) or some other identifying symbols, but should also include the route number in parenthesis.
5. Transportation linear disturbances will not be mapped on public access maps. This does not preclude the mapping of transportation linear disturbances for the purpose of

identifying and monitoring restored routes, or documents relating to projects implementing the restoration of routes, and provided them to other agencies, the public, partners and other organizations assisting in monitoring and restoration projects.

6. Maps of the approved network will be provided to other mapping agencies and commercial mapping companies to facilitate providing consistent information to the public.

Kiosks

Kiosks are distributed throughout the WEMO planning area to help with education and outreach. Each kiosk includes a subregion map, area rules and regulations, and may include additional site-specific information.

Priorities for new and/or additional kiosk placement will be driven by the need for public education. Areas without available information will be the highest priority to receive a new kiosk. Additional consideration for kiosk placement will be based on major access points, areas with sensitive resources that are experiencing significant impacts from access, and popular destinations. Final decisions regarding kiosk placement will occur after a site-specific review has been conducted to ensure no adverse impacts to cultural or other resources would occur from kiosk placement.

Outreach and Education Program

An outreach and education program is a tool to facilitate the public education effort and enlist public support and assistance in maintaining the route network. The outreach and education program includes collaboration with federal, State, and county entities, established and emerging organizations and programs, and with public participation, and includes area-specific elements for the TMPs.

1. Key messages to communicate may include the following:
    a. Tread Lightly (Leave No Trace);
    b. Help Heal the Desert (Vegetation/Soils, Respect Closed Signs);
    c. Respect Private Property;
    d. Safety (Training Opportunities/Use of Vehicles/Respect Others on the Road);
    e. Enjoy the Public Lands Responsibly (Staying on Designated Routes, Take Only Pictures, Leave it for Others to Discover as well);
    f. Recreational Opportunities to Enjoy in the Area (Climbing, Hiking, OHV Use, Equestrian, Star Gazing); and
    g. Who Came Here Before Us (Cultural Resources).
2. Targeted methods of communication to enhance access to information may include:
    a. Visitor Center programs and information, freeway and Stateline visitor centers and rest stops, other public agencies, local hotels, and other outreach facilities;

b. School partnerships and presentations and tours promoting BLM messages and outdoor multiple land uses, land ethics, leading to invitations for field tours;

c. Development and distribution of traditional maps, brochures and guides to specific areas, and for various resources and uses; and

d. Distribution of materials, attendance, and presentations at fairs, special events, partnership and user gatherings, local and regional interest group meetings, and OHV and other public lands events.

3. Electronic media

a. BLM website informational materials, including downloadable items such as maps, recreational destinations and directions, land use ethics, rules, historic and cultural settings, air quality alerts, and fire prevention restrictions;

b. Posting of Quick Response (QR) codes on kiosks and maps that allow import of route data to mobile applications; and

c. Provision of information on partner websites and traditional travel websites.

Partnerships

Sustainable partnerships are essential to the successful implementation of the TMPs. These partnerships need to be coordinated, and include organizations that bring various interests and resources to the table, including non-profit and other private groups, governmental jurisdictions and organizations, educational groups, private landowners, users and user organizations, local law enforcement, utilities and private businesses.

1. Key tasks that partners can assist on include the following:

a. Maintenance of the route network: Individuals and volunteer groups can work with Field Offices to assist with replacement of signs, raking closed routes that receive use, updating kiosk information, and other activities that help the public use and enjoy the route network appropriately. The following resources are needed in addition to the maintenance materials to facilitate these partnerships:

- Development and implementation of a database system to keep track of locations, activities, and materials used.
- Smartphones or similar devices with appropriate apps, to record locations of activities and keep track of materials used.

b. Restoration activities: Organizations can work with the Field Office with minimal oversight to assist with restoration activities.

c. Public education and outreach activities: Individuals, volunteer groups, and organizations can work with BLM to assist with presentations, training, development and distribution of materials, hosting activities, being campground hosts, and similar types of outreach.

d. Monitoring program assistance.

e. Addressing disturbance hotspots and reducing unauthorized use, as appropriate.

f. Having route designations in place enhances the availability of funds, and will allow the BLM to pursue external sources of funding, such as State OHV Grants, the National Fish and Wildlife Habitat Fund, and contributions of volunteer labor from local, state, and national interest organizations.

2.3.2.8 Law Enforcement

Enforcement for travel management can be broken down into two discrete but interrelated sections: law enforcement and administrative enforcement. Law enforcement primarily deals with public use of the Transportation Network and, when needed, the authorized uses; whereas administrative enforcement generally deals with only authorized users.

1. Law enforcement over a 16,000-mile network of linear travel features spread over a 9.2-million acre area (approximately 3.1 million acres of BLM administered public lands) is a challenge. As such, although opportune patrols would always (at the officer's discretion) deal with travel management issues, the following priorities for law enforcement are established;
    a. Routine patrol and response to issues relating to the unauthorized use of restored transportation linear disturbances.
    b. Routine patrol of targeted areas to monitor public use and swiftly respond to route proliferation issues that arise.
    c. Routine patrol of easily accessible (adjacent to designated routes) wilderness, WSAs and lands managed for wilderness characteristics.
2. Beyond the three priorities outlined above, and the opportunistic enforcement during other patrol activities, law enforcement will respond as needed to travel management issues and concerns identified during monitoring or by resource specialists.
    a. Law enforcement patrols are conducted and reported by patrol sector. A patrol sector is a geographic area that is assigned to a Law Enforcement Ranger for patrol, enforcement, and monitoring. Law enforcement issues are documented in the law enforcement reporting system (IMARS). The IMARS reporting system is a confidential law enforcement reporting system that is not publically available. The Chief Law Enforcement Rangers provide reports from IMARS to their respective Field Managers. These reports allow each Field Manager and Chief Ranger to review the frequency of patrol and types of incidents documented in order to collaboratively monitor and direct further patrol and law enforcement activities.
    b. To enforce the WEMO route network, interdisciplinary cooperation among staff is important. As part of this interdisciplinary team approach, Law Enforcement Rangers work closely with resource, recreation, and maintenance staff to capture information, statistics and maintenance needs and specific locations. Once trends or needs are assessed, the Field Office Manager prioritizes resources and directs additional law enforcement patrol in specific subregions as needed.
    c. Law enforcement patrol efforts are both proactive and preventive, along with being responsive to complaints. Patrols are conducted on a periodic basis

depending on priorities throughout each TMA. The goals of law enforcement within each TMA will be listed:

d. Administrative enforcement would principally focus on the Transportation System, including review, monitoring, and enforcement of ROWs and other authorizations as routine monitoring identifies issues. In the absence of specific law enforcement issues and activities, routine patrol priorities are generally the same as restoration priorities.

2.3.2.9 Maintenance of Routes within the Network

Maintenance of routes includes on-the-ground activities that support the appropriate use of the network.

1. Routine maintenance may include actions such as:

    a. Maintaining route travel surface using hand tools or heavy equipment for such purposes as, but not limited to, smoothing trail tread, pulling in berms, filling in of potholes and ruts, as well as the importation of road base and fill material such as sand and gravel.

    b. Installation and maintenance of water control and erosion prevention features such as rolling dips, out slopes, culverts and drainage leadouts.

    c. Removal of brush and vegetation to increase travel visibility, reduce safety hazards or to improve passage along a route.

    d. Vegetation management activities, such as seeding, planting, invasive plant removal, installation of erosion control devices (e.g., mats, straw, chips), and mechanical treatments, such as crushing, piling, thinning, pruning, cutting, chipping, mulching, mowing, and prescribed fire when the activity is necessary for the management of vegetation on public lands.

    e. Installation and maintenance of trail markers, traffic counters, information kiosks, visitor registers, special designation or information signs.

    f. Placement of recreational, special designation, or information signs, visitor registers, kiosks, and portable sanitation devices.

    g. Removal of trash, structures and materials such as scattered refuse, abandoned automobiles, fences, buildings and other man-made structures with no historical value.

    h. Installation of grates across, and fences around, mining features to protect wildlife and/or for human health and safety.

    i. Installation of retaining structures to assist in maintaining route tread and/or as an erosion control feature.

    j. Installation of signs or hard barriers such as rocks, boulders, wooden railings, bollards, guard rails, or fences (less than 1 mile in length), to delineate route edges, camping area boundaries, or parking area limitations.

k. Installation of signs, gates, cattle guards, enclosures, or hard barriers such as rocks, boulders, wooden railings, bollards, guard rails, or fences (less than 1 mile in length), to protect natural and cultural resources.

l. Installation of vehicle width limiting or step over structures to limit the types of vehicles or modes of travel that may access a specially designated trail, such as a motorcycle or hiking trail.

m. Dust abatement activities on routes, such as applications of watering, other dust suppressants, or surface hardening agents.

n. Routine route sign replacement or additional route sign placement on designated routes.

o. Routine repair of kiosk damage or replacement or upgrade of maps and brochures.

p. Ongoing damage repair.

q. Planned actions in response to wildfires, floods, weather events, earthquakes, or landslides that threaten public health or safety, property, and/or natural and cultural resources, and that are necessary to repair or improve lands unlikely to recover to a management-approved condition as a result of the event. Such activities are limited to: repair and installation of essential erosion control structures; replacement or repair of existing culverts, roads, trails, fences, and minor facilities; construction of protection fences; planting, seeding, and mulching; and removal of hazard trees, rocks, soil, and other mobile debris from, on, or along roads, trails, campgrounds, and watercourses.

2. Relatively few routes on public lands are maintained with vehicles such as graders or similar heavy equipment. Routes that are targeted for this level of maintenance would be reflected in asset classification of the route (i.e., roads would be maintained to allow for the continual use by all appropriate vehicles and primitive roads would be maintained as needed) and the setting in which the route occurs (i.e., there is limited use of heavy equipment in primitive settings).

3. Where vehicular maintenance is deemed appropriate, routine maintenance may occur on roads and primitive roads without further site-specific review, so long as maintenance is consistent with the existing character of the route and is taking place within the prism of the route or a previously designated width that has been evaluated and legal compliance has been completed, or, appropriate mitigation, if any, has been identified and applied. Any maintenance that would result in a change in character of the road (e.g., surfacing, widening) would require additional NEPA analysis and site-specific reviews.

4. On routes not previously subject to NHPA review, the BLM will conduct a Class III inventory of the area of potential effect (the area of proposed direct and indirect effects plus a 50 foot buffer surrounding the disturbance) prior to vehicular maintenance activities. However, no additional identification efforts are required if the area of potential effect is entirely within areas that have been previously inventoried, though the BLM archaeologist must determine that the previous identification efforts represent a reasonable and good faith effort and conform to the prevailing professional survey standards for the geographic region, provided that the regional standards meet or exceed the Secretary's Standards and Guidelines.

5. Vehicular maintenance of routes may also be done to minimize soil erosion and other resource degradation. This maintenance will be done on a case-by-case basis, depending upon annual maintenance funding and consistent with the adopted Programmatic Agreement for the WMRNP.
6. Maintenance activities may be carried out using the most efficient and economical tools for the situation including hand, mechanical, or power tools along with motorized vehicles and heavy equipment, consistent with the above parameters.
7. The trimming, brushing and/or masticating of roadside vegetation to maintain clearance will occur on both roads and primitive roads to the minimum level needed to keep free passage of the roadway open, eliminate safety hazards, and reduce the risk of fire.
8. Most non-motorized trails are not physically maintained. Trail maintenance activities generally will occur when needed, and trails may be maintained in partnership with one or more interested stakeholder groups.
9. Maintenance of the route network will center around three priorities corresponding to the time frames and types of actions needed. These are:
    a. **Phase I Actions** - maintenance issues that pose an immediate safety threat to the user. Maintenance actions require immediate attention and are often associated with some sudden change in the character of the route. These actions will be scheduled for implementation as soon as feasible, ideally not later than five working days from the time of discovery and could include activities such as:
        - temporary/emergency route closure,
        - road repair following flash flooding events,
        - temporary signage, and/or
        - re-routing of routes to avoid the hazard.
    b. **Phase II Actions** - maintenance issues that, if left unattended, will allow additional damage or create a problem over time. Maintenance actions require attention but do not pose an immediate hazard to the user. These actions will be scheduled for implementation as soon as feasible, ideally within 30 working days from the time of discovery. These actions could include:
        - route repair,
        - barrier installation, and/or
        - vegetation removal.
    c. **Phase III Actions** - maintenance issues that may be resolved at the time of discovery or will not cause appreciable damage or safety hazard by waiting until a maintenance team visits the area. Routine maintenance actions include:
        - replacement of signs, maps and other route information;
        - repair or replacement of route features that are damaged (e.g., grates, fences);

- activities covered by existing plan and environmental documents;
- upgrades or repairs to maintenance actions addressed as urgent issues previously; and/or
- funded maintenance actions with targets for completion within the current or next fiscal year.

10. Routine maintenance activities may be performed during the normal monitoring of designated route networks.

2.3.2.10 Monitoring

A major component of the CDCA Plan MVA Element is the monitoring of use and impacts resulting from vehicles, and other uses facilitated by the transportation network. Monitoring and adaptive management responses are an integral part of the implementation of the TMP. Responses to emergencies and safety issues are not part of this regular monitoring program and receive priority over monitoring activities. Monitoring is typically conducted by driving designated routes and documenting the condition of each route, documenting any unauthorized routes, and documenting the impacts that use of these unauthorized routes are having on the resources in each subregion, and if broader, within the TMA. The primary objectives of the monitoring program are to:

1. Identify and document when unacceptable levels and impacts occur on natural, cultural, and historic values identified in the area.
2. Identify when impacts will preclude corrective or rehabilitative actions.
3. Identify the type of vehicle and/or related use that is causing or is likely causing impacts.
4. Provide the information necessary to make immediate and long-range decisions on the continued use or prohibitions of vehicles on designated routes, and other options to provide needed access.

    a. Recommendations of monitoring efforts must be specific to each individual area, taking into consideration such issues as access needs, use levels, user conflicts, and impacts to resources. Monitoring efforts may vary. Monitoring techniques can include field observations, remote sensing, on-the-ground photographs, and environmental study plots.

    b. Options to further limit, designate, or close specific routes or areas will be available to the local field manager. These options will be invoked when monitoring reveals that TMP objectives are not being met because of identified adverse effects resulting from the travel network, based on the net benefit of the actions.

    c. The WEMO route network is divided into TMAs, which are further divided into subregions. Monitoring of routes and follow-up actions are generally implemented at the subregion level. In general, the focus of monitoring is on the subregion(s) that receive higher use and therefore have a higher potential for impact.

d. The following intervals and standards for monitoring and evaluation have been set, based on the sensitivity of the resource decisions involved for specific areas in each TMA. This does not preclude monitoring at a frequency unique to the situation, for any designated route or area undergoing active travel management. Generally in these cases, monitoring occurs immediately after a corrective action is taken, and remains at an elevated level for a period of months to years (Standard B or higher), depending on the situation.

e. The Transportation System would be monitored for usage, route condition, and noncompliance with designations including unauthorized route creation/proliferation.

f. Populating missing route attributes in GTLF is considered monitoring. As new aerial photography becomes available, field monitoring for route non-compliance should focus on areas of intensive public use within the respective subregions and ACECs (other areas as time allows). Review of new aerial photography is considered monitoring and should be documented appropriately with new information added as appropriate. Any new linear transportation features added to GTLF as a result of this monitoring should be labeled "Undesignated" until the following monitoring feedback loop has been completed.

g. With specific regard to monitoring for newly identified unauthorized routes, no matter the method of monitoring resulting in the discovery, the following procedure should ensue:

    - Determine if the route is truly new, or was simply missed in the previous inventories. This determination would be made based on three factors:
        - does the linear travel show evidence of prolonged use (i.e., little to no vegetation, or heavily compacted soils)?
        - does the linear travel feature appear on old aerial photographs?
        - does the linear travel feature appear on any USGS map for the area?
        - is there substantial evidence that this linear feature was a previously closed and rehabilitated route that is now experiencing new use?
    - If the answer to any of the first three questions is "yes" and the answer to the fourth question is "no", the route should be considered "missed by the previous inventory" and evaluated through the adaptive management process to determine whether the route should be designated as available for use or not, consistent with other parameters for the area, including adopted disturbance caps.
    - If the answer to the first three questions is "no" or the answer to the fourth question is "yes", the route would be automatically designated a transportation linear disturbance. Should additional methods of restoration be needed beyond the standard described previously in this document, the route may require a site specific NEPA compliance analysis and documentation.

h. Monitoring for route condition would specifically identify areas where designated routes need maintenance work – this information could be added or updated in GTLF and may be included in FAMS, and would aid in the development of site-specific projects.

i. Monitoring for use and non-compliance would specifically target restored routes or other areas of intensive public use. This monitoring would provide information to be used in establishing or adapting enforcement procedures or identifying additional measures to attempt to curtail these issues.

j. Monitoring for cultural resource impacts would be conducted:

- consistent with the strategies outlined in the Programmatic Agreement and Historic Properties Management Plan according to standards and processes identified therein;
- based upon the intensity and type of OHV use, the density and sensitivity of cultural resources in the area, and the potential for adverse indirect and cumulative impacts, including from new unauthorized routes;
- to include monitoring measures that identify adverse effect to sites from route usage, and trigger additional needed avoidance, minimization, and mitigation measures. These measures are outlined in the Programmatic Agreement, including rerouting, reconstruction, new construction, or closure.
- in areas where an intensive Class III cultural resource inventory has not occurred, route monitoring will occur using best available methodologies including targeted monitoring based on GIS predictive modeling, systematic sampling, and landscape-level sensitivity analysis, and in conjunction with ongoing cultural inventory efforts.

k. Transportation linear disturbances that have been restored using the standard restoration methods as described above would be specifically monitored for unauthorized use during regular monitoring intervals laid out for sensitive areas above or during incidental monitoring that is documented. Incidental monitoring of these disturbances may occur during routine patrol or during monitoring of other resources. Should a barrier need to be installed, the frequency of monitoring will increase if evidence of use dictates. Monitoring of restored routes would continue until there are no easily detectable physical signs of the route on-the-ground.

l. Transportation linear disturbances that have man-made barriers and/or have been actively restored will be monitored in the fashion described herein, or where appropriate, in the separate decision authorizing the project.

2.3.2.11 Implementation Priorities

Based on funding, staffing, and partnership opportunities, the priorities for TTM implementation actions may vary within each TMA.

Adaptive Management

1. Adaptive measures will be implemented on an appropriate area-wide basis based on the 43 CFR 8342.1 minimization criteria, the evaluation factors and thresholds identified in the monitoring plan, specific on-the-ground factors that indicate a substantive need, unknown information that becomes available at a later date in time, and new opportunities and partnerships that are established. The appropriate area of application for adaptive measures may be the WEMO planning area, TMA, subregion, or more specific area based on the data collected and the adaptive management approach identified. Resource-specific measures that may be applied are described in Table 2.1-3. Alternative-specific measures that may be applied are described in Tables 2.3-5 (Alternative 2), 2.3-8 (Alternative 3), and 2.3-9 (Alternative 4).
2. The inventories for this project have identified approximately 16,000 miles of routes in the WEMO planning area. This is over 7,200 miles of additional on-the-ground linear features (i.e., routes) identified through the 2012 field monitoring and aerial photo review that had not been previously addressed, but appear to have been identifiable at the time of the 2006 WEMO Plan. A complete inventory of the WEMO planning area was conducted for the WMRNP in 2012-2013 to provide a useful baseline for analysis and implementation of the TMP. A designation determination was made for each route in the inventory, based on the minimization criteria, alternative goals and objectives, and the analysis of impacts.
3. The 2006 WEMO Plan indicated that some features could not be located on the ground (10-13 percent). As monitoring proceeds, additional information will verify the existence and condition of the routes in the 2012-2013 inventory. If linear features in the WMRNP inventory show evidence of natural rehabilitation and are not readily apparent to the casual passerby on-the-ground, or are washes with no evidence of use, documentation of such conditions will be recorded and then these linear features may be removed from the inventory.
4. Route designation mapping errors may be corrected without further NEPA review, if site-specific compliance reviews verify that no sensitive resources were missed. Errors generally consist of routes that were identified on maps, but missed in the documentation process and vice versa, including:
    a. Short segments that were designated as transportation linear disturbances, but are really located within a larger/longer designated open route and should also be designated as open to preserve continuity of the route.
    b. Routes that are designated open, but do not connect to the designated, mapped network and therefore should be designated as transportation linear disturbances.
    c. Routes that are misidentified on the ground, e.g., two parallel, adjacent routes where the wrong route was designated as a transportation linear disturbance for rehabilitation.
    d. Non-existent routes.
5. If linear features are found on the ground that show signs of use and were missed in the inventory process, and through document review can be determined to have existed at the time of initial project development, they will be added to the Transportation System and

evaluated through the route designation and NEPA processes to determine whether they should be designated as available for use or not, consistent with the parameters for the area they are within. Linear features that did not exist at the time of initial project development will be added to the Transportation System as transportation linear disturbances and managed consistent with other transportation linear disturbances in the area, except if effectively addressed under the Rapid Response program.

6. Additionally, on newly acquired lands, transportation linear features would be inventoried and designation would comply with applicable federal regulations and statutes. Once designated, these routes would be incorporated into the overall Transportation System. New routes on acquired lands would be required to be complimentary to the existing Transportation System and objectives for that TMA.

7. As additional information becomes available within the WEMO planning area, the BLM will manage the designated routes for the protection of cultural and natural resources, and the special values in each area. As areas of resource conflicts are identified via monitoring and future inventory activities, the BLM will continue to evaluate the designated route network, to ensure it continues to meet the objectives of 43 CFR 8340, the applicable land use plan goals and objectives, and applicable laws and regulations. The network will be reviewed to assess its effectiveness at meeting current travel management objectives and at addressing current and changing land use plan goals and objectives. Adaptive management may include changes in the adopted travel management system or measures to avoid on-site and off-site effects on current and future land uses and important resources. Among others, issues that could arise in the future include noise and air pollution, erodible soils, stream sedimentation, nonpoint source water pollution, as well as impacts to listed and sensitive species habitats, eligible and listed cultural resources and historic properties, wildlife, special management areas, valid existing rights, and property rights for adjacent landowners. Route designation or other actions in the TMPs could be modified based on monitoring results, or to accommodate land use proposals. All required compliance activities and NEPA analyses would precede needed modifications to the route network.

8. Recreational Unmanned Aircraft “Drones” - The term "unmanned aircraft" means a device that is used or intended to be used for flight in the air without the possibility of direct intervention from within or on the device, and the associated operational elements and components that are required for the pilot or system operator in command to operate or control the device (such as cameras, sensors, communication links). This term includes all types of devices that meet this definition (e.g., model airplanes, quad-copters, drones) that are used for any purpose, including for recreation or commerce. The Federal Aviation Administration provides regulation and guidance governing the use of Unmanned Aerial Systems, however as a motorized vehicle, an unmanned aircraft is governed by the OHV regulations while they are on or immediately over the ground. Other regulations, such as closures and restrictions (43 CFR 8364) may be required to more comprehensively manage this activity.

9. The following monitoring standards and indicators for adaptive management are being established. These indicators form the basis for determining how well standards are being achieved, and if not, what more direct types of actions would then be implemented.

a. Repetitive Non-Compliance on an individual route
b. Repetitive Non-Compliance on a group of routes in a localized area
c. New Illegal Routes recur in a localized area
d. Repetitive repair needs
e. Class IV Damage
f. Width/Depth increase over time
g. Secondary Impacts (e.g. trash dumping, sensitive plants, cultural sites)

Provisions for New Route Construction or Adaptation/Relocation of Existing Routes

1. The need for route designation on newly acquired lands would be reviewed every five years (or sooner, if judged to be prudent by the Field Manager). As lands are newly acquired, transportation linear features would be inventoried and designation would comply with applicable federal regulations and statutes. Once designated, these routes would be incorporated into the overall Transportation System. Designated routes on acquired lands would be required to be complimentary to the existing transportation network.
2. Changes in travel management may fall into one of the following categories: route designation changes; route upgrades, such as to improve accessibility to a class of users or address safety issues; route downgrades, such as narrowing for a more limited use; minor realignments; adaptation/relocation of existing routes; and extension and/or improvement of routes to highway connectors.
3. In general, other associated construction and adaptation/relocation activities would not require further consultation if taking place within the stopping, parking, and camping boundary if the activities reduce off-route impacts or address safety issues, and if they avoid listed species and NHPA sites. Changes to an asset classification or subdesignation on a route would also generally be considered a minor route network change; however, additional designation of "C" routes would require additional NEPA review.
4. New route construction or adaptation/relocation of routes outside the route prism would require further site-specific review consistent with the Programmatic Agreement, which may include implementation of the NHPA Section 106 process and a Class III cultural resource survey, and/or consultation with the US Fish and Wildlife Service (USFWS) under the Endangered Species Act, consistent with the Biological Opinion. The need for NEPA compliance for activities that are limited to within the route prism and the level of NEPA compliance for projects within the stopping, parking, and camping area, would be determined on a case-by-case basis.
5. New routes should be evaluated, designated, and analyzed in coordination with the NEPA process. The planning, design, and engineering for new routes should take into consideration the minimization criteria to the maximum extent practicable in light of the authorization being reviewed and how OHV use will be managed on the route. For example, a route authorized for access to a renewable energy development project should be analyzed through the NEPA analysis associated with the energy project and a specific

decision made on OHV use on the route or any controls placed to ensure OHV use does not occur. If OHV use is not specifically eliminated from the route, the evaluation of the route will document how the location of the route was chosen to minimize adverse impacts per 43 CFR 8342.1.

6. "Minor realignments" within the stopping, parking, and camping area may include the following:
    a. Minor realignments of a route necessary to address safety issues.
    b. Minor realignments of a route necessary to avoid cultural resource sites identified during the process of complying with Section 106 of the NHPA.
    c. Minor realignments of a route necessary to reduce impacts on sensitive species or their habitats.
    d. Minor realignments of a route necessary to avoid a riparian area, or reduce impacts to soil, water, or air resources.
    e. Minor realignments of a route along the public lands boundary with another jurisdiction, to address issues of that jurisdiction.
    f. Minor realignments of a route that would substantially increase the quality of a recreational experience, but would not adversely affect sensitive species or their habitat, or another sensitive resource value.
7. Minor realignments to address a recreational experience could include the opening of an existing, but previously closed, route that serves the same access need as the open route that is to be "realigned." It does not include the construction of a new access route involving new ground disturbance, except as identified above. Minor realignments must be documented in the official record. The reason for the alignment change shall be recorded and kept on file in the affected BLM Field Office.
8. Access to private inholdings will be evaluated on a case-by-case basis. The preferred approach is to grant such access administratively.

Emergency Closures

In the event of an emergency, immediate actions, such as closure or restrictions on uses of public lands must be taken to prevent or reduce risk to public health or safety, property or important resources. Emergencies are unforeseen events of such severity that they require immediate action to avoid dire consequences. The *BLM National Environmental Policy Handbook* (H-1790-1, Section 2.3) defines the following actions as typical emergency actions:

- Cleanup of a hazardous material spill;
- Fire suppression activities related to ongoing wildland fires; and
- Emergency stabilization actions following wildland fires or other disasters.

In each TMA, likely sources of emergency actions will be included.

In any case for an emergency action, closures will go into effect immediately, with appropriate public notification.

Closure Authority

Closures may result from safety issues; from emergency actions such as erosion caused from flooding; from continuous, accelerating deterioration of conditions over time where closure is necessary to prevent further adverse effects; or from newly discovered sensitive resource degradation that is severe. The purpose of a closure or restriction is to protect public health and safety, or prevent undue or unnecessary resource degradation due to unforeseen circumstances and should not be used in lieu of designated closures. The BLM has authority to enact closures under 43 CFR 8341.2 and 8364.

Under the authority in 43 CFR 8341.2, where off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife and fisheries habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas will be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures are implemented to prevent their recurrence. Use of this authority requires compliance with NEPA through completion of the appropriate level of analysis, or through some other valid means of compliance (for example through use of an appropriate categorical exclusion).

Under the authority in 43 CFR 8364, the authorized officer can close or restrict a specific use, or uses, of the public lands for the protection of persons, property and resources. Unlike the special rules found in 43 CFR 8341.2, these closures and restriction orders can apply to any mode-of-transport, or activity, but do require a more formal notification process, including Federal Register publication of the closure or restriction order. The use of this authority is limited to two years by policy, but extensions are available on a case-by-case basis. NEPA compliance is required for use of this authority as well.

Needed Easements

The proposed BLM route network consist of roads or primitive roads that provide the principal access from the federal, state, and local roadway system to public lands in the WEMO planning area. Some of these routes are the main connectors of the WEMO planning area's route network under current and foreseeable traffic patterns. Many of these main connectors cross both public and non-public lands, are routes under the authority of another entity, or are routes to which BLM has given authorization for specified uses. These routes function as BLM local roads, although road standards may vary depending on the type of use and specific management objectives. BLM does not have authority over routes that are not on public lands managed by the BLM. Pursuant to regulation, most authorizations that BLM has granted across public lands retain in BLM certain rights, including the ability to grant use of the route for other purposes. However, some routes across public lands, primarily routes granted to an entity prior to the Federal Land Policy Management Act or directly from Congress, contain provisions whereby the holder retains some use authority. The routes that are subject to authorization will generally be prioritized by the BLM to pursue legal access (by acquisition or by adjudication of existing access rights), including across non-Federal land. These routes will also be prioritized in order to complete maintenance to ensure long term, legal public access to the public lands in the WEMO planning area. In addition, BLM will pursue reciprocal easements on primary County and Special District roads. Road segments from public highways to public land may be posted with "Public Land Access Route" signs, and BLM will coordinate with the California

Department of Transportation (Caltrans) for appropriate signing on highways. Easements may be acquired through donation following the procedures set forth in *BLM Manual 2100-Acquisition*.

Routes identified for easement acquisition in each TMA are noted on the subregion maps for the respective TMA.

2.3.2.12 Other Travel and Transportation Management Considerations

R.S. 2477 Claims and BLM Administrative Determinations

Section 8 of the Mining Act of 1866 states: "and be it further enacted, that the right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted." The statute was self-enacting such that its rights would be established by "construction" of a "highway" on unreserved public lands, without any form of acknowledgement or action by the federal government. This section of the mining statute was later re-codified as Revised Statute 2477 (abbreviated as R.S. 2477). R.S. 2477 was repealed by FLPMA on October 21, 1976 with a savings provision for rights established prior to that date.

The BLM does not have the authority to make binding determinations on the validity of R.S. 2477 right-of-way claims. However, the BLM may make informal, non-binding administrative determinations for its own land use planning and management purposes. Such determinations must be based on the particular laws of each state in which a claimed right-of-way is situated

As of February 2009, the BLM has been directed not to process or review any claims under R.S. 2477 pending further review and direction from the Secretary of the Interior. Best management practices (BMPs) include standards for BLM roads based on average daily traffic, functional classification and terrain type, and can be found in *BLM Manual 9113 – Roads* and *Handbook H-9113-1 Road Design*. BMPs for primitive roads are found within *BLM Manual 9115-Primitive Roads* and *Handbook H-9115-1 Primitive Road Design*. BMPs also exist for trails based on hiking and equestrian user needs, which are found in *BLM Manual 9114 - Trails*.

Programmatic Agreement Requirements or other Terms and Conditions

All terms and conditions listed in the WMRNP Biological Opinion and requirements in the Programmatic Agreement for cultural resource protection will be implemented.

Changes to the Travel Management Plans

The WMRNP ROD would amend the CDCA Plan to adopt the parameters and framework for travel management described in the WMRNP (Proposed Plan Amendments). Any significant future modifications of the network parameters and framework, therefore, could only occur through an amendment to the CDCA Plan, including full NEPA compliance, public involvement, interagency coordination, and the preparation of a ROD for the amendment. The TMP is an implementation-level plan, and changes do not normally require a plan amendment, consistent with the Federal Land Policy Management Act. The Federal Land Policy Management Act allows BLM resource management plans (such as the CDCA Plan) to be "maintained as necessary to reflect minor changes in data" (Section 1610.5-4). Plan maintenance is limited, in that it cannot result in the expansion of the scope of resource uses or restrictions, or change the terms, conditions and decisions of the approved plan. It is limited to further refining or documenting a previously approved decision incorporated in the plan.

Major route network changes would require an associated TMA goals evaluation and NEPA-compliant review (supplemental to the WMRNP SEIS or a separate NEPA document) as well as NHPA Section 106 consultation and/or consultation with USFWS under Section 7 of the Endangered Species Act. Major route network changes include those which substantially alter transportation patterns in a subregion, are inconsistent with the TMP goals, are large acquisitions with multiple access options, those exceeding take limitations associated with Endangered Species Act consultation, and/or involve the addition of substantial routes to the current network that are not part of a larger project review.

Changes or modifications of the implementation of a TMP will be documented through maintenance of the plan, plan updates, or separate actions (e.g., rewriting of a specific plan component), which may or may not require new NEPA analysis. Changes to elements of the plan such as updating protocols for signing, monitoring, data management, restoration, (i.e., non-route designation decisions) would be reviewed by the appropriate BLM Field Office and, if needed, modified within the TMP, but a new TMP would not be issued. Non-route designation decisions within the TMP would be superseded as needs arise without publishing a new TMP for public review.

Provisions and Process for Travel and Transportation Management

In the routine business of BLM, travel and transportation management decisions will be considered in various capacities. For instance, when considering a new right-of-way application, BLM will consider existing route designations in contrast to desired public or permitted uses for new routes, and address and evaluate these uses in conformance with the OHV regulations in 43 CFR 8340. Authorizing or permitting the development of a new transportation linear feature does not, in and of itself, constitute a complete route designation. If a route is to be available for OHV use, then the BLM must make a separate OHV designation as part of the authorization process. In addition, the BLM should add primary route objectives, direction for managing and maintaining new routes, associated geographic information system data, and engineering best management practices, to these decisions. Future NEPA-related documentation, including Records of Decision or Findings of No Significant Impact related to rights-of-way and development projects should address compliance of the project with 43 CFR 8340 and describe any OHV designations that are a part of the final decision.

Standard Operating Procedures

The following standard operating procedures will be implemented during all phases of TMP implementation.

- Appropriate NEPA analysis will be obtained prior to any ground disturbing activities not addressed in this plan. Prior to implementation of ground disturbing activities, project leads will confirm with cultural resource staff and other resource staff members that surveys and inventories have been completed for the proposed work site.
- If, during implementation activities, workers discover cultural or paleontological resources, operations in the vicinity of the discovered resources shall cease immediately. The Field Office archeologist shall, as appropriate, evaluate the significance of the find and determine the need for mitigation. Work in the area of the discovery would not proceed until authorized by the archeologist. The Field Office archeologist shall assess

proposed removal of any materials or structures that may be of questionable age (45 years or older) for proper archeological custodianship or for disposal away from the site.

- If, during implementation activities, workers encounter biological resources of concern, operations in the vicinity shall cease immediately. Work shall proceed only after hazards to the species of concern are removed, the animal is no longer at risk, or the animal has been moved from harm's way.
- If, during implementation activities, workers encounter botanical resources of concern, operations in the vicinity shall cease immediately. The Field Office botanist, natural resource specialist, or resources chief shall, as appropriate, evaluate the significance of the find and determine the need for mitigation. Work in the area of the discovery would not proceed until authorized by the appropriate staff member.
- Construction equipment operators will minimize lowering of the road bed to avoid building up tall berms that may inhibit wildlife movement. Berms higher that 12 inches and/or with a slope greater than 30 degrees will inhibit wildlife movement, and should be pulled back into the road bed.
- Any new road construction or existing road maintenance activities will be reviewed to assure optimal use of crowning, ditching, outsloping, insloping, borrow ditches, drainage dips, low water crossings, culverts, or leadout ditches to control erosion and resource degradation. Ideally crown, outslope, or inslope should have a grade of approximately 3 percent (2.5 inch crown on a 14 foot wide road) to provide for water sheeting.
- All trash and food items generated by project activities shall be promptly contained and regularly removed from the project site to reduce the attractiveness of the area to scavenging wildlife.
- Construction equipment operators shall inspect underneath any parked equipment or vehicle immediately prior to moving it to ensure no wildlife species of concern is beneath the vehicle. If an animal is found underneath the parked item, the operator should move the item following proper handling procedures. Alternatively, the vehicle shall not be moved until the animal has left of its own accord.
- The following is the protocol should human remains be discovered within the WEMO area.
  - All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA)16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol if human remains are discovered in the state of California regardless if the remains are modern or archaeological.
  - Upon discovery of human remains, all work within a minimum of 200 feet of the remains must cease immediately, nothing disturbed and the area is to be secured. The County Coroner's Office of the county where the remains were located must be called. The Coroner has two working days to examine the remains after notification. The appropriate land manager/owner or the site shall also be called

and informed of the discovery. If the remains are located on federal lands, federal land managers/federal law enforcement/federal archaeologist are to be informed as well because of complementary jurisdiction issues. It is very important that the suspected remains and the area around them remain undisturbed and the proper authorities called to the scene as soon as possible as it could be a crime scene. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. In addition, all vehicles and equipment used in the commission of the crime may be forfeited. The Coroner will determine if the bones are historic/archaeological or a modern legal case.

- Modern Remains
  - If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and conduct the required procedures. Work will not resume until law enforcement has released the area.
- Archaeological Remains
  - If the remains are determined to be archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands.
  - *Remains discovered on federally owned/managed lands:* After the Coroner has determined the remains are archaeological or historic and there is no legal question, the appropriate Field Office Archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 *Inadvertent discoveries*, must be followed.
  - *Remains discovered on non-Federally owned/managed lands:* After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal question, the Coroner will make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American he/she shall contact by telephone within 24 hours, the California Native American Heritage Commission (NAHC). The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the land owner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the land owner shall reinter the remains in an area of the property secure from further disturbance. If the land owner does not accept the descendant’s recommendations, the owner or the descendent may request mediation by the NAHC.

– Resumption of activity. The activity that resulted in the discovery of human remains may resume at any time that a written, binding agreement is executed between the BLM, lineal descendants, and/or the federally recognized affiliated Indian Tribe(s) that adopts a recovery plan for the excavation or removal of the human remains, funerary objects, sacred objects, or objects of cultural patrimony following 43 CFR §10.3 (b)(1) of these regulations. The disposition of all human remains and NAGPRA items shall be carried out following 43 CFR §10.6.

2.3.3 Alternative 1: No Action

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 goals and objectives that exist under Alternative 1 are described in Sections 2.2.1 and 2.2.2. Section 2.1.4 summarizes the process used to develop the alternative route network under all alternatives. 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.

The No Action Alternative provides for access on public lands consistent with a broad species-conservation strategy and consideration of other resource values and uses. 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.

Plan Amendment under Alternative 1

Under the No Action Alternative, no plan amendment changes would be made for the WEMO Planning area. The plan decisions under consideration in the action alternatives, which would not be made under the No Action Alternative, are listed in Table 2.1-1, and again summarized below.

PA I. There would be no change to the CDCA Land Use Plan language that has been interpreted to limit the 2006 WEMO Plan route network to existing routes of travel as of 1980. The route network approved under the 2006 WEMO Plan, as modified by the Court, would continue to be in place, and would be inconsistent with this LUP guidance.

PA II. A new Transportation Management Framework, including adoption of TMAs and associated objectives, would not occur. The access management framework from the CDCA Plan would continue to be utilized.

PA III. The Johnson Valley to Parker Valley Race Corridor would continue to be the one remaining race corridor available for permitting, subject to approval and receipt of a Special Recreation Permit, and competitive corridor parameters identified in the CDCA Plan, as supplemented through compliance with NEPA, Section 106, and ESA. No permit has been granted for this race course since the listing of the desert tortoise.

Under this alternative the "C" routes that are to the northeast of the Spangler Hills Open Area above the Randsburg Wash Road would continue to be made available for competitive motorized races managed under a Special Recreation Permit. There are approximately 20 miles of designated trails that would be classified as "C" routes in this area. These "C" trails are located in gently rolling, more open terrain and are generally less technical in nature. In addition, approximately 15 miles of loop trails south of Spangler Hills have been designated under No Action. The adoption and use of other "C" routes would be subject to the plan amendment parameters identified in the 2006 WEMO Plan, and may include additional closure offset requirements.

PA IV. 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 Open, as it was designated in the 2006 WEMO Plan. Cuddeback, Coyote, and Chisholm Lake Trail lakebeds would remain designated consistent with the surrounding area – i.e., "Closed to motor vehicle access, 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 implementation of a visitor use permit program for those desiring to use vehicles in the Rand Mountains.

PA VI. The stopping and parking limits would remain as they are currently defined in the CDCA Plan. Stopping and parking can take place within 50 feet either side of the route centerline inside DT ACECs and CDNCLs, while camping is restricted to existing disturbed areas along open routes. Stopping, parking, and camping can take place within 300 feet either side of centerline outside of DT ACECs and CDNCLs. Camping is subject to an additional limitation occurring in previously disturbed, adjacent to routes parameter, which does not change under alternatives.

PA VII. Under the No Action alternative, livestock grazing would continue under the current terms and conditions contained in the Final Grazing Decisions issued for active grazing allotments within the West Mojave Planning Area. This would include the continuation of livestock grazing on the Ord Mountain Allotment within the Ord-Rodman DT ACEC, and the continuation of ephemeral sheep grazing on the Cantil Common Allotment and the Shadow Mountain Allotment within the Fremont-Kramer DT ACEC.

Implementation Decisions for Route Designation/Minimization under Alternative 1

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 closed 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.
- 6,074 miles of motorized routes are designated and managed as available for some level of motorized use in subsequent implementation activities, based on the identified adjustments. Non-motorized 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-motorized trails have been evaluated outside of the context of transportation management, e.g. as a component of ACEC Management Plans. These non-motorized 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 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 motorized 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 parallel modification of closures to 2,398 miles. The designated routes were identified on maps in a CD provided with the 2005 WEMO FEIS (App. C) and are also available online (see http://www.blm.gov/ca/st/en/fo/cdd/wemo_plan_feis_maps.html).

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 valid existing rights (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 6,074 miles of Open and Limited Routes, and 9,929 miles of Closed Routes.

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, closed 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, closed 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.

The same lack of clarity is found in past route designation efforts, which in addition, have not been conducted in any consistent way over time. It is unclear, with the history of route

designations in the WEMO Planning area, to what extent the "existing routes" concept is still valid. It remains unclear whether the universe of "existing routes" represents a floor or a ceiling of routes available for public and other uses, and finally, how routes in this category would be portrayed and distinguished from routes that are not "existing routes". The No Action Alternative does not include the issue of "existing routes" in this planning effort. Rather, the No Action Alternative includes the specifically designated network, as modified (by the WEMO ROD, the court orders, the overlooked VERs, and minor adjustments) but does not resolve or clarify the "existing routes" concept as portrayed in the CDCA Plan.

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 this project approximates 16,000 miles, as computed with GIS.

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. However, for most of these routes, it is unclear why these existing routes were not documented, reviewed, and designated in previous planning efforts. Particularly in Motorized Access Zones, 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 (i.e., not existing). Likewise, it is not clear when the additional miles of undocumented routes were created (this lack of clarity was recognized by the Court in the Summary Judgment and Remedy Orders).

The additional miles of existing, undocumented routes include duplicate routes (e.g., routes that run right next to another) that were overlooked, routes in the "existing routes" areas that were not considered in the 1985-1987 or ACEC designation efforts, wash routes not readily recognized as OHV routes, motorcycle routes outside of the 2006 WEMO Plan redesign and reassessment areas, and other routes in the planning area that may not have been evident on the ground or that were overlooked. The additional miles of routes may include some that were created after the 1985-1987 route designation or after the 2006 WEMO Plan compilation and inventory efforts. A more complete discussion of the history of route designation leading up to the 2006 WEMO Plan may be found in Appendix E of this document.

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, the undocumented mileage of routes was not designated in the 2006 WEMO Plan, have not been subsequently designated through another planning process, was 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 closed) 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.

The transportation network associated with the No Action Alternative is shown in Figure 2.3-1. 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. A summary of the route designations under the No Action alternative is provided in Table 2.4-2.

Network-Wide Minimization under Alternative 1

The following minimization measures, summarized in Table 2.3-1, were utilized in the development of the No Action Alternative to minimize impacts.

Table 2.3-1. Network-Wide Minimization Measures Under No Action Alternative

Issue	Minimization and Mitigation Measure
Minimization of T&E impacts	Per 2006 WEMO Plan, as modified by the DRECP LUPA, 0.5% allowable ground disturbance within DT ACECs, outside of DT ACECs and CDNCLs other ground disturbance limitations may apply, consistent with CDNCL or other biological sensitivity area parameters.
Minimization of Sensitive Species impacts	Per 2006 WEMO Plan, 1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs.
Designation of Newly developed routes[1] (allowable ground disturbance limitations)	Per 2006 WEMO Plan, 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.
Designation of Previously Closed Routes	All routes closed under the 2006 WEMO Plan would remain closed, except for valid existing rights overlooked or subsequently approved, consistent with the No Action alternative.
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 closed, pending future evaluation under the terms of the 2006 WEMO Plan.
Stopping Minimization Measures	Per 2006 WEMO Plan, limited to adjacent to designated open routes and within 50 feet either side of route centerline inside DT ACECs and CDNCLs, and per CDCA Plan, limited to 300 feet either side of route centerline outside DT ACECs and CDNCLs.

Table 2.3-1. Network-Wide Minimization Measures Under No Action Alternative

Issue	Minimization and Mitigation Measure
Parking Minimization Measures	Per 2006 WEMO Plan, limited to adjacent to designated open routes and within 50 feet either side of route centerline inside DT ACECs and CDNCLs, and per CDCA Plan, limited to 300 feet either side of route centerline outside DT ACECs and CDNCLs.
Camping/ Second Vehicle Staging Minimization Measures	Per 2006 WEMO Plan, 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.
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 Open routes.
Designation Parameters on Motorized Use of Washes	Allowed in washes designated as open routes only.

[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.

Post-Designation Implementation Strategies under Alternative 1

The process for on-the-ground implementation of route designations and grazing management under Alternative 1 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 the WEMO FEIS, Chapter 2, Section 2.2.6.10 to 2.2.8, and Appendix C, and 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 WEMO Amendment website (http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html), 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 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. The. 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 West Mojave 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 closed routes;
- 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 targeted 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 2.3-2. These specific implementation activities with a timeline are called out in Section 2.2.6.10 and Appendix C of the 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 2.3-2. 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
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, make outreach a high priority at the time of fence installation.	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.	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 currently vacant; therefore, have become lower priority for health assessments.
Year 2	Health assessments shall be completed for the Cady Mountain,	Cady Mtn., Hansen Common,

Table 2.3-2. Implementation Activities and Timeframes for No Action Alternative

Timing	Activity	Status *All activities assume funding is received.
	Hansen Common, Rattlesnake Canyon, Rudnick Common, Tunawee Common, and Walker Pass allotments.	Rattlesnake Canyon, Rudnick Common, Tunawee Common assessments complete. Walker Pass permanently retired under the authority of the 2012 Approp. 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.
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 lb/acre, and appropriate rest of certain pastures.	Done in grazing decisions, ongoing.
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.	

Monitoring and Adaptive Management

Monitoring and rehabilitation priorities are identified in the Route Signing Plan posted at http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html, and are based on a combination of factors including biological, wilderness, cultural, proximity to urban interface, and readiness. The basis of the biological priorities is outlined in more detail in the 2005 WEMO FEIS, page 2-164. Biological enforcement priorities outlined in more detail in the 2005 WEMO FEIS, page 2-71 and include higher use DT ACEC and CDNCL areas, DT ACECs and CDNCLs adjacent to OHV Open Areas, and higher density tortoise areas.

In addition, funding is being sought to expand the current education and outreach community partnership, which began in 2005 and now reaches 16,000 school-age children in the Barstow area, and many more through activities funded by OHV Area Friends groups in the WEMO area.

Under the No Action Alternative, the route network is adopted as a component of the CDCA Plan. Major route network changes that exceed the parameters identified in 2.2.6.11 of the 2005 WEMO FEIS would requires Plan Amendment and associated NEPA review. Minor route network changes are narrowly defined. Minor changes would include realignments to avoid identified cultural sites, reduce impact on special-status species or their habitat, or to substantially increase the quality of recreational experience, that would not affect sensitive species, their habitat, or other sensitive resources. Opening or closing routes where valid existing rights or easements where not accurately recorded, providing access to private inholdings are also considered minor changes, or serving the same access need as a currently open route which is being re-aligned. These changes would occur within the parameters set in the 2006 WEMO Plan. Minor changes are evaluated through an appropriate NEPA instrument (Determination of NEPA Adequacy, Categorical Exclusion, or Environmental Assessment, or Environmental Impact Statement).

2.3.4 Alternative 2: Resource Conservation Enhancement

The LUP-level decisions that would be made under all action alternatives, including Alternative 2, are described in Section 2.1. The goals and objectives that would be established under Alternative 2 are described in Section 2.2. Section 2.1.4 summarizes the process used to develop the alternative route network under all alternatives.

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 2.1.2, 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 2.3-2, and are summarized in Table 2.3-3.

Table 2.3-3. Summary of Travel Management Areas under Each Alternative

Travel Management Area	Alternative 1 (No Action)	Alternatives 2 and 3	Alternative 4 (Proposed Action)
1	No TMAs	Broadwell Lake, Afton Canyon, Mojave Trails National Monument, and Barstow subregions	Broadwell Lake, Afton Canyon, Mojave Trails National Monument, and Barstow subregions
2		Sierras, Darwin, and North and South Searles subregions	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	Juniper Flats, Rattlesnake Canyon, Wonder Valley, and Joshua Tree, and Sand to Snow National Monument subregions

Table 2.3-3. Summary of Travel Management Areas under Each Alternative

Travel Management Area	Alternative 1 (No Action)	Alternatives 2 and 3	Alternative 4 (Proposed Action)
4		Jawbone, Middle Knob and Lancaster subregions	Jawbone, Middle Knob and Lancaster subregions
5		Black Mountain, Coolgardie, Fremont Peak, Harper Lake, Mitchel Mountains, Calico Mountains, and Cronese Lake subregions	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	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	Stoddard Valley, Ord Mountains, Newberry/Rodman, and Johnson Valley subregions
9		No TMA 9	Ridgecrest and El Paso subregions

PA III. Alternative 2 would seasonally restrict the use of the currently designated "C" routes for competitive motorized races managed under a Special Recreation Permit 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.

Alternative 2 would delete the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor in the WEMO Planning Area. 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 Lake lakebeds to the list of designated Lakebeds, and would Close Koehn Lakebed (see Figure 2.3-3). The other three lakebeds would remain "Closed to motor vehicle access, 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 Open 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 and in CHU designated by the USFWS. Livestock grazing would be discontinued in DWMAs and in CHU 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 DWMAs and CHU include portions of Ord Mountain, Cantil Common, and Shadow Mountain allotments. These allotments would have their boundaries adjusted to remove the DWMA and CHU lands from the allotments. The AUMs in the DWMA 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

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, including for Alternative 2; however, the preliminary designations for routes reflect the overall goals and objectives of Alternative 2, and mediate against adding new routes to the network. 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 identified as "Transportation Linear Disturbances" under Alternative 2, subject to route-specific review.

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 identified as "Transportation Linear Disturbances", subject to route-specific review. In keeping with the resource protection focus of Alternative 2, this step in the process defaulted to closing 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 closed, limited, or opened these routes, 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 minimization criteria conflicts identified, would initially remain identified as "Motorized" (available for all travelers, including non-motorized or non-mechanized users), subject to route-specific review.

e. Routes in OHV Limited Areas which were designated as "Open" in the 2006 Plan, but which may have resource or other minimization 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 identified as closed under the initial GIS Alternative 2, depending upon the conflict types, intensity, and numbers (cumulative effects).

f. Routes designated as "Limited" in the 2006 WEMO Plan decision would be identified as "Motorized-Authorized" or "Motorized-Administrative" (specific to the limitation), as applicable, subject to route-specific review. 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 closure, 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 minimization criteria.

h. For routes located in a disturbance hotspot outside of DT ACECs and CDNCLs, the route would be designated as a transportation linear disturbance (closed), 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. Disturbance hotspots 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 2 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 are provided in Table 2.3-4.

Table 2.3-4. GIS Minimization Triggers under Alternative 2

Criterion	Resource/Topic	Trigger Evaluation for Minimization and Mitigation
1	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
	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
	Rare Plant Species	Route passes through a rare plant area

Table 2.3-4. GIS Minimization Triggers under Alternative 2

Criterion	Resource/Topic	Trigger Evaluation for Minimization and Mitigation
	Special Status Plant Species	Route passes through special status plant species habitat
	Air Quality	Route within 1 mile of sensitive receptor, or within 300 feet of a residence
	Cultural Resources	Route 50-300 feet from a cultural resource
	Cultural Resources	Route within 50 feet of a cultural resource
	Cultural Resources	Route within tribal area
	Grazing	Route within 30 feet of a range improvement
	Safety (preamble)	Route within 100 feet of abandoned mine or other identified safety issue
	Lands managed for wilderness characteristics	Route within a review area
2	Tortoise Habitat	Route within a DT ACEC designated for protection of desert tortoise
	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 0-4 mile radius of nests exceeded 20 percent as required by DRECP LUPA CMA 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
3	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
	Disturbance Hotspots in DT ACECs and CDNCLs	Route is located in a hot spot or highly disturbed area within a DT ACEC and CDNCLs
	Disturbance Hotspots outside of DT ACECs and CDNCLs	Route is located in a hot spot or highly disturbed area outside of DT ACECs and CDNCLs
	ACEC and CDNCLs	Route is currently designated in an ACEC/Activity Plan not identified above
	Administrative Access	Route is authorized for administrative access
	Authorized Access	Route is authorized to specific user
	Noise	Route within 1 mile of sensitive receptor or within 300 feet of a residence
4	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 boundary
	Wilderness Study Area	Route intersects with Wilderness Study Area boundary

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 user over the motorized user under Alternative 2, 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. 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 Draft SEIS.

The transportation network which resulted from this process for Alternative 2 is shown in Figure 2.3-4. The total mileage of the designated travel network and the transportation linear disturbances for each alternative, including Alternative 2, is summarized in Table 2.4-2.

The Alternative 2 network places an increased focus on the use of one specific minimization measure, closure, 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 closure of the previously existing, undocumented route that was identified and evaluated. 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 route closure 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.
- Closure-focused route strategy.
- 5,231 miles of motorized routes.

Network-Wide Minimization Measures under Alternative 2

The following minimization measures, summarized in Table 2.3-5, were utilized in the development of Alternative 2 to minimize impacts. Additional specific parameters for each TMA may be included in the TMPs.

Table 2.3-5. Network-Wide Minimization under Alternative 2

Issue	Minimization Measures
Minimization of T&E impacts	Per 2006 WEMO Plan, 1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs (Table 2-11, 2005 WEMO FEIS).
Minimization of Sensitive Species impacts	Per 2006 WEMO Plan, 1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs (see Table 3.11-3).
Minimization of AQ impacts	Consultation with AQMD and SIP Conformity Evaluation. 1% allowable ground disturbance parameters in CDNCL. Additional ground disturbance limits have been adopted in special areas, and may be adopted in other programmatic strategies consistent with the overall goals of the CDCA Plan and 2006 WEMO Plan and WMRNP goals, without further amendment.
Minimization of Cultural impacts	Programmatic Agreement with CA SHPO and ACHP.
New routes[1] subject to allowable ground disturbance limitations	Subject to additional disturbance parameters in DT ACECs, MGS Core Areas, specific ACECs identified above and CDNCLs, which may be further extended through other programmatic analyses. Also subject to plan amendment parameters in Section 2.6.
Route Closures	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.
Newly Identified Routes	Routes that were not evaluated under the 2006 WEMO Plan 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 minimization criteria.
Stopping	Limited to within 50 feet from route centerline both inside and outside DT ACECs and CDNCLs.
Parking	Limited to within 50 feet from route centerline both inside DT ACECs and CDNCLs, and outside DT ACECs and CDNCLs.
Camping/ Second Vehicle Staging	Limited to previously disturbed, adjacent areas within 50 feet from route centerline both inside DT ACECs and CDNCLs, and outside DT ACECs and CDNCLs, except in limited cases to minimize impacts to sensitive resources (designated camping/vehicle staging areas).
Permitted Events	Speed events limited to OHV Open Areas, and on designated "C" routes outside of DT ACECs and CDNCLs seasonally only. Non-speed motorized events in DT ACECs and CDNCLs limited to routes designated in permit, with seasonal limitations. Non-motorized events are route specific, available on Open Routes unless otherwise specified in the permit.
Motorized Use of Washes	Motorized use limited to those designated in the travel network.
Motorized Use of Lakebeds (those specifically designated in CDCA Plan)	Add Koehn, Cuddeback, Coyote, and Chisholm Trail lakebeds to the list of designated Lakebeds. Close Koehn Lakebed, except by permit; keep as limited motorized use on Cuddeback, Coyote, and Chisholm Trail Lakebeds to designated through routes or authorized activities.
Motorized Use of Lakebeds (those not already specifically designated in CDCA Plan, the 2006 WEMO Plan Amendment, or this document.)	Limited to designated through routes, as further constrained in applicable ACEC Management Plans.

Post-Designation Implementation Strategies under Alternative 2

Specific components to implement the planning goals and objectives, including the route designations, of Alternative 2 include:

1. Other Resources and Uses
    a. 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;
    b. Incorporate adopted DRECP LUPA route parameters, in order to enhance conservation goals and objectives;
    c. 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 give special attention to the specific factors that have driven the identification and management of the areas, and associated access strategies; and
    d. Utilize route closure as a key measure to minimize resource and use conflicts on the remaining route network, unless otherwise identified in the goals and objectives.
2. Primary Travelers
    a. Manage access to de-emphasize casual multiple-use motorized and mechanized touring;
    b. Focus access to major recreational and non-recreational destinations that are not experiencing undue access-related impacts;
    c. Otherwise emphasize through-access on public lands to establish a comprehensive network;
    d. Consider a limited number of manageable loop trails that minimize loss of sensitive resources; and
    e. Emphasize joint-use over single-use trails (e.g., multiple types of vehicles) to limit habitat disturbance and concentrate use in less sensitive or more manageable areas.
3. Emerging Uses
    a. Emphasize limiting access to authorized uses only (rights-of-way, easements, range improvements, guzzler maintenance, and mining) where closure is not appropriate in sensitive areas; and
    b. Have the route network support current, and provide mechanisms to respond to new, landscape-level conservation goals and strategies and newly identified sensitive resources.
4. Landscape Settings
    a. 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; and
    b. Focus on maintaining recreational settings in the designation and management of the front-country network closer to urban centers, where appropriate.

5. Means of Travel Allowed to Accomplish Objectives
    a. Convert from year around motorized access opportunities to seasonal or non-motorized opportunities, that lead to sensitive points of interest, where appropriate; and
    b. Limit competitive motorized events to OHV Open Areas, or existing designated "C" routes, by special-recreation permit only. Further limit the permitted use of these designated "C" routes seasonally. No "C" routes would be designated through DT ACECs, CDNCLs, or other ACECs. Other Open routes would not be available for motorized competitive events. Non-motorized events would be assessed on a case-by-case basis.
6. Social Conflicts Between Different Travel Types
    a. 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;
    b. Consider State and County-maintained Road plans when identifying access points to major roads;
    c. Identify existing easements for joint use routes, as needed; and
    d. Utilize minimization and mitigation measures (e.g., signing, fencing, closing routes, where appropriate) to address other known safety issues, conflicts between users, and impacts to sensitive resources.
7. Numbers and Types of Access Points
    a. 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.
    b. Eliminate or reduce motorized access through disturbance hotspot areas;
    c. Develop partnerships or pursue area-specific minimization measures to address disturbance hotspots and reduce unauthorized use, as appropriate;
    d. Limit access points to manage sensitive resource and social impacts; and
    e. Develop strategies to identify and publicize where these access points are and how to get to them.
8. Route Inventory System and existing Geographical Identity and Public Knowledge
    a. 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;
    b. Pursue reciprocal easements and utilized existing public easements to facilitate management of the primary access network and routes to major destinations; and

c. Develop site-specific minimization measures at popular and sensitive destinations that are experiencing substantial impacts from access, where appropriate.

9. Non-Casual Uses
   a. Identify and direct ROW and other authorized activities to existing corridors/sites, when reasonable;
   b. 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;
   c. Emphasize limited access and rehabilitation for commercial uses that are not major regional or interstate linear routes, when the authorization term expires; and
   d. Emphasize joint use of routes by multiple ROW holders when appropriate.
10. Boundaries for Management
   a. Adopt eight TMAs to implement the route network; and
   b. 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 ACEC Plans.

Future changes to the network would be developed consistent with these goals and objectives, and specific direction in TMPs. General implementation direction for all action alternatives is shown in Table 2.3-6. More specific parameters for each TMA would be included in the TMPs.

Table 2.3-6. Draft 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.

Table 2.3-6. Draft Implementation Strategies for All Action Alternatives

Timing	Activity
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.

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 or CHU would have their boundaries adjusted to remove the DWMA and CHU lands from the allotments. The AUMs in the DWMA 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.

Monitoring and Adaptive Management

Under Alternative 2, monitoring and rehabilitation priorities in the Route Signing Plan posted at http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html, would be adjusted based on new information. The court ordered monitoring would continue, under the existing protocol, consistent with the details of the protocol, as amended. The priorities for implementation are based on a combination of factors including biological, wilderness, cultural, proximity to urban interface, and readiness, which would continue to be general guidance. TMPs would provide more specific guidance within the Subregions. The basis of the biological priorities is outlined in more detail in the 2005 WEMO FEIS, page 2-164. These would be augmented with additional priorities related to other sensitive resources, particularly in special areas or where critical needs have been identified by staff and management. In addition to higher use DT ACEC areas and CDNCLs, DT ACECs and CDNCLs adjacent to OHV Open Areas, and higher density tortoise

areas, critical ACEC resources, adversely affected riparian areas and springs, and at-risk listed and eligible cultural properties would be high priorities.

In addition, BLM would continue to seek funding opportunities and other resources to expand the current education and outreach community partnership and other partnerships in the WEMO area.

Under Alternative 2, the parameters for route network changes for the WEMO Planning area would be updated to reflect actual operational needs and provide for adjustment of the network, consistent with parameters in the TMPs and general thresholds for plan amendment changes outlined in Section 2.6. Opening or closing routes would be subject to appropriate NEPA compliance in all cases, including associated consultations, except in the case of emergencies, in which case NEPA would be completed consistent with regulatory requirements. These changes would occur consistent with the goals of the 2006 WEMO Plan and the 2016 DRECP LUPA.

2.3.5 Alternative 3: Public Lands Access Maintenance

The LUP-level decisions that would be made under all action alternatives, including Alternative 3, are described in Section 2.1. The goals and objectives that would be established under Alternative 3 are described in Section 2.2. Section 2.1.4 summarizes the process used to develop the alternative route network under all alternatives.

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 2.1.2, 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:

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 2.3-2, and are summarized in Table 2.3-3.

PA III. Under Alternative 3, there would be "C" routes available for competitive motorized 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.

The Johnson Valley to Parker Valley Race Corridor would be deleted and may be offset by additional "C" routes in the planning area outside of DT ACECs, CDNCLs, and other ACECs that are identified as open "C" routes through the route designation process, consistent with TMA goals.

PA IV. Alternative 3 would add Koehn, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds to the list of designated Lakebeds. Koehn Lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". Cuddeback, Coyote, and Chisholm Trail Lake Lakebeds would be designated "Open" to motorized use, subject to area specific minimization measures.

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 and CHU would not change; allotments would be managed as modified in the DRECP LUPA. See Table 2.4-3 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 minimization 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 identified as "Transportation Linear Disturbances" under Alternative 3, subject to route-specific review.

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 minimization 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 minimization criteria would be initially identified as "Motorized" (available for all travelers, including non-motorized or non-mechanized users), subject to route-specific review.

e. Routes designated as "Limited" in the 2006 WEMO Plan are initially identified as "Motorized-Authorized" or "Motorized-Administrative" (specific to the limitation), as applicable, subject to route-specific review. 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. Minimization measures, including closure, 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 minimization criteria.

g. For routes used for, or intersecting, a Special Recreation Permit (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 minimization criteria. If the route intersected an SRP area, the route would be initially designated as motorized 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 motorized user over the non-motorized or non-mechanized user under Alternative 3, consistent with the minimization 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 Alternative 2 and Alternative 4 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 minimization 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 (closed). Additional measures would be identified as needed.

j. For routes located in a disturbance hotspot within sensitive areas, the route would be initially identified as a transportation linear disturbance (closed), 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 disturbance hotspot outside of sensitive areas that would otherwise be "Open", the route designation was initially identified as "Open" and site-specifically reviewed. Where appropriate, at least one motorized route was maintained in the various directions, unless a designation of transportation linear disturbance (closed) was needed to improve manageability of the area. If additional conflicts existed, depending on the severity, an entire area of routes may have been closed or open with mitigation measures. A few hotspots may be identified as potential staging or camping areas under Alternative 3. Disturbance hotspots 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 2.3-7.

Table 2.3-7. Criteria Triggering Minimization and Mitigation under Alternatives 3 and 4

Criterion	Resource/Topic	Minimization and Mitigation Trigger
1	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 area designated for protection of vegetation resources
	Rare Plant Species	Route passes through a rare plant area
	Special Status Plant Species	Route passes through special status plant species habitat
	Air Quality	Route within ¼ mile of sensitive receptor, or within 300 feet of a residence
	Cultural Resources	Route between 50-100 feet of a cultural resource
	Cultural Resources	Route within 50 feet of a cultural resource
	Cultural Resources	Route within tribal area
	Cultural Resources	Route within ethnographic area
	Grazing	Route within 30 feet of a range improvement

Table 2.3-7. Criteria Triggering Minimization and Mitigation under Alternatives 3 and 4

Criterion	Resource/Topic	Minimization and Mitigation Trigger
	Safety	Route within 100 feet of abandoned mine or other identified safety issue
	Lands managed for wilderness characteristics	Route within an area designated to be managed for wilderness characteristics
2	Tortoise Habitat	Route within a DT ACEC designated for protection of desert tortoise
	Tortoise Habitat	Route within high density modelled habitat, as corrected
	Sensitive Wildlife Resources	Route within an ACEC for wildlife resources
	Golden Eagles	Route within ½ mile of golden eagle nest. The analysis also considered whether the cumulative disturbance within a 0-4 mile radius of nests exceeded 20 percent as required by DRECP LUPA CMA LUPA-BIO-IFS-25.
	Mohave Ground Squirrel	Route within Mohave Ground Squirrel Core Area
	Wildlife Corridors	Route passes through a designated wildlife corridor
	Special Status Wildlife Species	Route passes through special status wildlife species habitat
3	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
	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 hotspots in DT ACEC and CDNCLs	Route is located in a hot spot or highly disturbed area within a DT ACEC and CDNCLs.
	Disturbance Conflicts	Route in an area that exceeds disturbance parameters.
	Disturbance hotspots outside of DT ACEC and CDNCLs	Route is located in a hot spot or highly disturbed area outside of DT ACEC and CDNCLs.
	Administrative Access	Route is authorized for administrative access
	Authorized Access	Route is authorized to specific user
	Noise	Route within ¼ mile of sensitive receptor, or within 300 feet of a residence
4	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 boundary
	Wilderness Study Area	Route intersects with Wilderness Study Area boundary
	ACEC and CDNCL	Route is within or intersects with ACEC or CDNCL boundary

The transportation network associated with Alternative 3 is shown in Figure 2.3-5. The total mileage of the designated travel network and the transportation linear disturbances for each alternative, including Alternative 3, is summarized in Table 2.4-2.

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 route closure, 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.
- 10,864 miles of motorized routes.

Network-Wide Minimization Measures under Alternative 3

The following minimization measures, summarized in Table 2.3-8, were utilized in the development of Alternative 3 to minimize impacts. Additional specific parameters for each TMA may be included in the TMPs.

Table 2.3-8. Network-Wide Minimization Measures under Alternative 3

Issue	Minimization and Mitigation Measure
Minimization of T&E impacts	Per 2006 WEMO Plan, 1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs (Table 2-11, 2005 WEMO FEIS). No limit on ground disturbances outside DT ACECs and CDNCLs or other biological sensitivity areas, but may be extended as adopted in other programmatic strategies as identified below.
Minimization of Sensitive Species impacts	Per 2006 WEMO Plan, 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 areas, but may be extended as adopted in other programmatic strategies as identified below.
Minimization of AQ impacts	Consultation with AQMD and SIP Conformity Evaluation. 1% allowable ground disturbance parameters in CDNCL. Additional ground disturbance limits have been adopted in special areas, and may be adopted in other programmatic strategies consistent with the overall goals of the CDCA Plan and 2006 WEMO Plan and WMRNP goals, without further amendment.

Table 2.3-8. Network-Wide Minimization Measures under Alternative 3

Issue	Minimization and Mitigation Measure
Minimization of Cultural impacts	Programmatic Agreement with CA SHPO and ACHP.
New routes subject to allowable ground disturbance limitations in DT ACECs, CDNCLs, MGS Core Areas, and specific ACECs	Subject to 1% allowable new ground disturbance parameters, which may be further tightened through other programmatic analyses. Also subject to plan amendment parameters in Section 2.6.
New routes subject to allowable ground disturbance limitations outside of DT ACECs, CDNCLs, MGS Core Areas, and specific ACECs with disturbance limitations	Additional limitations may be developed for other sensitive resources, without further amendment, as part of the adaptive management strategy and consistent with 2006 WEMO Plan, the 2016 DRECP LUPA, and TMA goals.
Route Closures	Routes that were evaluated and designated as "Closed" under the 2006 WEMO Plan were initially identified as closed in Alternatives 3 and 4, subject to route-specific review.
Newly Identified Routes	All routes were evaluated using the same minimization criteria in Alternatives 3 and 4. In Alternative 3, 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. In Alternative 4, routes not included in the 2006 network were initially identified as closed, except for initial changes based on identified issues and needs. This network was then subject to route-specific review, focusing on identified conflicts.
Stopping	Except as site-specifically designated, 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.
Parking	Except as site-specifically designated, 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	Except as site-specifically designated, 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. Parameters for specifically designated camping and staging areas are identified on a site-specific basis both for conservation purposes and for recreational enhancement.

Table 2.3-8. Network-Wide Minimization Measures under Alternative 3

Issue	Minimization and Mitigation Measure
Permitted Events (Alternatives 3 and 4 vary)	Speed events are limited to designated "C" routes outside of OHV Open Areas. Non-speed motorized events in DT ACECs, CDNCLs, and ACECs are limited to routes designated in the Permit. Alternative 3 also includes seasonal or monitoring limitations, which are location specific. Alternative 4 limits the designated "C" routes to specifically identified areas. Non-motorized permitted events are available on Open Routes unless otherwise specified. All events are subject to NEPA compliance and permit requirements, and may require consultation with other agencies.
Motorized Use of Washes	Motorized use limited to the motorized routes designated travel network.
Motorized Use of Lakebeds (those specifically designated in CDCA Plan)	Add Koehn, Cuddeback, Coyote, and Chisholm Trail lakebeds to the list of designated Lakebeds. "Close" Koehn Lakebed except as authorized in a land-use or special-recreation permit. Designate as "Open" Cuddeback, Coyote, and Chisholm Trail Lakebeds to motorized use, subject to appropriate minimization measures.
Motorized Use of other Lakebeds (those not already specifically designated in CDCA Plan, the 2006 WEMO Plan Amendment, or this document.)	Limited to designated through routes, except as further constrained in ACEC Management Plans.

Post-Designation Implementation Strategies under Alternative 3

Specific components of Alternative 3 to implement the planning goals and objectives include:

1. Other Resources and Uses
    a. 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;
    b. Give special attention to the goals in special areas (WSA, ACEC, CDNCLs, NRHP sites, Tribal Areas, Riparian Areas, and SRMAs), and the specific factors that have driven the identification and management of the areas, and associated access strategies;
    c. Conform to adopted DRECP LUPA route parameters, in order to enhance conservation goals and objectives and provide consistent management strategies;
    d. De-emphasize route closure as a primary means to minimize resource and use conflicts on the remaining routes selected for the network, where consistent with area goals; and
    e. Emphasize regional, network and tiered measures to minimize conflicts, including those which are consistent with or enhance similar strategies of other jurisdictions.
2. Primary Travelers
    a. Manage access to emphasize casual multiple-use motorized and mechanized touring.

b. Provide access to recreational and non-recreational destinations that are not experiencing undue access-related impacts.

c. 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 Twenty-Nine Palms Marine Corps Air Combat Center (29 Palms Base). 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).

d. Identify a link between the Outlet Center Mall in Barstow to the Stoddard Valley OHV Open Area via a connector route.

e. 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.

f. Identify a connector loop between the two remaining pieces of the Johnson Valley OHV Area, with appropriate minimization and mitigation measures. As needed coordinate with the 29 Palms Base to facilitate completion of the loop. This may require some minor rerouting, with appropriate NEPA/ESA/Section 106 compliance, along the current Right-of-Way boundary with the Base.

g. 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.

h. Balance joint-use and single-use trails (e.g., multiple types of vehicles or ways of travel) to enhance opportunities for unique recreational experiences; and

i. In less sensitive areas, provide for a reasonable amount of recreational and touring opportunities, in addition to providing through-access on public lands to establish a comprehensive network.

3. Emerging Uses

   a. Consider emerging access and access-dependent needs in development and management of the network; and

   b. Have the route network support landscape-level conservation and use goals and strategies.

4. Landscape Settings

   a. 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; and

b. Maintain or enhance recreational settings in the development and management of the network, where appropriate.

5. Means of Travel Allowed to Accomplish Objectives

   a. Provide an array of diverse and unique uses at recreation destinations, where appropriate; and

   b. Competitive motorized 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.

6. Social Conflicts Between Different Travel Types

   a. 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;

   b. Provide additional access opportunities to underserved motorized or non-motorized recreation types insofar as it is consistent with other objectives;

   c. Identify existing easements for joint use routes, as possible; and

   d. Utilize minimization and mitigation measures (e.g., signing, fencing, education, closing routes, where appropriate) to address known safety issues, conflicts between users, and impacts to resources.

7. Numbers and Types of Access Points

   a. 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;

   b. 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;

   c. Any race pit areas would be limited to those areas analyzed as such in compliance with NEPA, Section 106, and ESA compliance;

   d. 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;

   e. Consider 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, subject to site-specific analysis and consistent with the goals of this alternative and route minimization criteria;

f. Reduce motorized access through sensitive areas with disturbance hotspots;

g. Develop partnerships or pursue area-specific minimization measures to address disturbance hotspots and reduce unauthorized use, as appropriate;

h. Limit access points in high conflict areas to manage sensitive resource and social impacts; and

i. Develop strategies to identify and publicize where access points are and how to get to them.

8. Route Inventory System and existing Geographical Identity and Public Knowledge

   a. Maintain an accurate route inventory for management purposes, and for the production of both general and recreation specific Transportation Management Network maps, and make those maps available to the public through electronic means;

   b. Pursue reciprocal easements and utilize existing public easements to facilitate management of the primary access network; and

   c. Develop site-specific minimization measures at popular and sensitive destinations that are experiencing substantial impacts from access, where appropriate.

9. Non-Casual Uses

   a. Identify and direct ROW and other authorized activities to existing corridors/sites, when reasonable;

   b. 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;

   c. 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; and

   d. Emphasize joint use of routes by multiple ROW holders, when appropriate.

10. Boundaries for Management

    a. Adopt eight TMAs to implement the route network;

    b. 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; and

    c. 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.

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 2.3-6. More specific parameters for each TMA would be included in the TMPs.

Monitoring and Adaptive Management

Under Alternative 3, monitoring and rehabilitation priorities in the Route Signing Plan posted at http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html, would be adjusted based on new information. The court ordered monitoring would continue, under the existing protocol, consistent with the details of the protocol. The priorities for implementation are based on a combination of factors including biological, wilderness, cultural, proximity to urban interface, and readiness, which would continue to be general guidance. TMPs would provide more specific guidance within the Subregions, and may also factor in specific recreational and other access implementation priorities, depending on the area. The basis of the biological priorities is outlined in more detail in the 2005 WEMO FEIS, page 2-164. These would be augmented with additional priorities related to other sensitive resources, particularly in special areas or where critical needs have been identified by staff and management. In addition to higher use DT ACEC and CDNCL areas, DT ACECs and CDNCLs adjacent to OHV Open Areas, and higher density tortoise areas, critical ACEC resources, adversely affected riparian areas and springs, and at-risk listed and eligible cultural properties would be high priorities.

In addition, BLM would continue to seek funding opportunities and other resources to expand the current education and outreach community partnership and other partnerships in the WEMO area.

Under Alternative 3, the parameters for route network changes for the WEMO Planning area would be updated to reflect actual operational needs and provide for adjustment of the network, consistent with parameters in the TMPs and general thresholds for plan amendment changes outlined in Section 2.6. Opening or closing routes would be subject to appropriate NEPA compliance in all cases, including appropriate consultations, except in the case of emergencies, in which case NEPA would be completed consistent with regulatory requirements. These changes would occur within the parameters set in the 2006 WEMO Plan and the 2016 DRECP LUPA.

2.3.6 Alternative 4: Proposed Action

The LUP-level decisions that would be made under all action alternatives, including Alternative 4 (the Proposed Action), are described in Section 2.1. The goals and objectives that would be established under Alternative 4 are described in Section 2.2. Section 2.1.4 summarizes the process used to develop the alternative route network under all alternatives.

Plan Amendment under Alternative 4

Under Alternative 4, the plan amendment decision (PA I) that is common to all action alternatives, and is described in Section 2.1.2, would be made.

Of the six plan amendment decisions (PA II – PA VII) that vary among alternatives, the following decisions would be made under Alternative 4:

PA II. Alternative 4 would delineate nine TMAs and associated modes of access and travel. The boundaries of the nine TMAs are shown in Figure 2.3-6, The boundaries of the nine TMAs included in Alternative 4 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 Alternative 4, there would be "C" routes available for competitive motorized 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).

If the Johnson Valley-to-Parker Valley Race route is determined to be no longer viable or otherwise deleted, additional (C) open routes may be designated outside of OHV Open Areas with appropriate NEPA and consistent with the 2006 WEMO Plan, the 2016 DRECP LUPA, and the applicable TMPs.

This alternative would specify a Johnson Valley race or speed-controlled route-connector loop between non-connecting portions of the remaining Johnson Valley OHV Recreational Area to provide a loop corridor that enhances organized vehicle riding opportunities within the Open Area, subject to additional consultations. This may require additional coordination with the Twenty-Nine Palms Marine Corps. Staging and pit areas would be limited to within the Johnson Valley OHV Recreation Area.

PA IV. Alternative 4 would add Koehn, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds to the list of designated Lakebeds, and would designate Koehn lakebed as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit", and designate the other three lakebeds as "Open" to motorized vehicles.

PA V. In Alternative 4, 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 4 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 2.4-3 for a comparison of acres between alternatives that would be available for grazing.

Implementation Decisions for Route Designation/Minimization under Alternative 4

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 minimization criteria and considered while developing the 2005 WEMO FEIS route network. The following parameters were also used for identifying the preliminary 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 preliminary Proposed Action, routes in the OHV Limited Areas designated as "Closed" in the 2006 WEMO Plan decision would be initially identified as "Transportation Linear Disturbances" under the Proposed Action, subject to route-specific review.

c. In the preliminary Proposed Action, routes in OHV Limited Areas designated as "Open" in the 2006 WEMO Plan, but which may have resource or other minimization 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 "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 43CFR 8342.1 minimization criteria would be initially identified as "Motorized" (available for all travelers, including non-motorized 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 closure, 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 identified as "Transportation Linear Disturbances" under the Proposed Action, subject to route-specific review.

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), subject to route-specific review. 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 closure, may be applied where impacts have been identified under the 43CFR 8342.1 criteria.

g. Routes designated as "Limited" to authorized users in the 2006 WEMO Plan are initially identified as both motorized (available for public use) and "motorized-authorized" (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 route 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 closed 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. Many of the routes in Small Tracts Act areas are rural

residential, 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 Special Recreation Permits (SRP), the route designation is initially identified as the most inclusive designation that is permitted, consistent with the minimization criteria. If the route intersects an SRP area, the route is initially designated as motorized 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 minimization criteria. Generally, routes that are designated as available for public use are made available inclusively for multiple user groups, including motorized, as well as non-motorized (mechanized) 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 motorized, unless there is no parking or staging area, or if the route is located a distance from the designated trail, consistent with the minimization 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 (closed). 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 disturbance hotspot within sensitive areas are initially identified as transportation linear disturbances (closed), 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 disturbance hotspot outside of sensitive areas that would otherwise be "Open", are initially identified as "Open" and site-specifically reviewed. Where appropriate, at least one motorized route is maintained in the various directions, unless a designation of transportation linear disturbance (closed) 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 closed or subject to area-wide mitigation measures. A few hotspots may be identified as potential staging or camping areas under the Proposed Action to eliminate the use of other high-disturbance areas. Disturbance hotspots 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 are identified Table 2.3-7. The minimization triggers are also used to determine whether a route or feature requires minimization and mitigation under the Proposed Action. The transportation network associated with

Alternative 4 is shown in Figure 2.3-7. The total mileage of the designated travel network and the transportation linear disturbances for each alternative, including Alternative 4, is summarized in Table 2.4-2.

The transportation network under this alternative 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 closure, 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.
- 6,313 miles of motorized routes.

Network-Wide Minimization Measures under Alternative 4

The following minimization measures, summarized in Table 2.3-9, were utilized in the development of the Proposed Action to minimize impacts. Additional specific parameters for each TMA may be included in the proposed TMPs.

Table 2.3-9. Network-Wide Minimization Measures under the Proposed Action

Issue	Minimization and Mitigation Measure
Minimization of T&E impacts	Consultation with Fish and Wildlife Service and issuance of a biological opinion. Per 2006 WEMO Plan, as modified by the DRECP LUPA, 0.5% allowable ground disturbance within DT ACECs, outside of DT ACECs other ground disturbance limitations may apply, consistent with CDNCL or other biological sensitivity area parameters.
Minimization of Sensitive Species impacts	Per 2006 WEMO Plan, 1% allowable new ground disturbance within MGS Core Areas, and specific Sensitive plant species ACECs (see Table 3.11-3).
Minimization of AQ impacts	Consultation with AQMD and SIP Conformity Evaluation. 1% allowable ground disturbance parameters in CDNCL. Additional ground disturbance limits have been adopted in special areas, and may be adopted in other programmatic strategies consistent with the overall goals of the CDCA Plan and 2006 WEMO Plan and WMRNP goals, without further amendment.
Minimization of Cultural impacts	Programmatic Agreement with CA SHPO and ACHP.
New routes subject to allowable ground disturbance limitations in CDNCLs and specific ACECs	Subject to 1% allowable ground disturbance parameters, which may be further tightened through other programmatic analyses. Also subject to plan amendment parameters in Section 2.6.
Existing Route Closures	Routes that were evaluated and designated as "Closed" under the 2006 WEMO Plan were initially identified as closed (transportation linear disturbances) in the Proposed Action, subject to route-specific review.
Newly Identified Routes	In the Proposed Action, newly identified routes within sensitive areas were initially identified as closed (transportation linear disturbances). Sensitive areas included USFWS designated critical habitat and associated ACEC, routes in areas where they trigger disturbance parameter exceedances. The site specific review focused on these issues and other site-specific input. In Alternative 4, routes not included in the 2006 network were initially identified as closed, except for initial changes based on identified issues and needs. This network was then subject to route-specific review, focusing on identified conflicts.
Newly Identified Routes	In the Proposed Action, 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. The site specific review focused on site-specific issues and other site-specific input. This network was then subject to route-specific field review, focusing on identified conflicts.
Stopping	Except as site-specifically designated, 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.
Parking	Except as site-specifically designated, 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	Except as site-specifically designated, 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. Parameters for specifically designated camping and staging areas are identified on a site-specific basis both for conservation purposes and for recreational enhancement.

Table 2.3-9. Network-Wide Minimization Measures under the Proposed Action

Issue	Minimization and Mitigation Measure
Permitted Events (Alternatives 3 and 4 vary)	Speed events are limited to designated "C" routes outside of OHV Open Areas. Non-speed motorized events in DT ACECs and CDNCLs are limited to routes designated in the Permit. The Proposed Action also includes seasonal or monitoring limitations, which are location specific. Alternative 4 limits the designated "C" routes to specifically identified areas. Non-motorized permitted events are available on Open Routes unless otherwise specified. All events are subject to NEPA compliance and permit requirements, and may require consultation with other agencies.
Motorized Use of Washes	Motorized use limited to the motorized routes designated travel network.
Motorized Use of Lakebeds (those specifically designated in CDCA Plan)	Add Koehn, Cuddeback, Coyote, and Chisholm Trail lakebeds to the list of designated Lakebeds. "Close" Koehn Lakebed except as authorized in a land-use or special-recreation permit. Designate as "Open" Cuddeback, Coyote, and Chisholm Trail Lakebeds to motorized use, subject to appropriate minimization measures.
Motorized Use of other Lakebeds (those not already specifically designated in CDCA Plan, the 2006 WEMO Plan Amendment, or this document.)	Limited to designated through routes, except as further constrained in ACEC Management Plans.

Post-Designation Implementation Strategies under the Proposed Action

Specific components of the Proposed Action to implement the planning goals and objectives include:

1. Other Resources and Uses
    a. Support resource conservation and enhancement goals while providing opportunities to experience the desert's unique resource values in the development and management of the network;
    b. Give special attention to the goals in special areas (CDNCL, WSA, ACEC, NRHP sites, Tribal Areas, Riparian Areas, and SRMAs), and the specific factors that have driven the identification and management of the areas, and associated access strategies;
    c. Conform to adopted DRECP LUPA route parameters, in order to enhance conservation goals and objectives and provide consistent management strategies; and
    d. Emphasize regional, network and tiered measures to minimize conflicts, including those which are consistent with or enhance similar strategies of other jurisdictions.
2. Primary Travelers
    a. Manage access to emphasize casual multiple-use touring.
    b. Provide access to recreational and non-recreational destinations that are not experiencing undue access-related impacts.

c. Consider additional access needs in designated SRMA to enhance recreational management goals.

d. Identify "C" routes for competitive use, as a specific designation for routes so authorized outside of OHV Open Areas. The designation of "C" routes requires an environmental analysis, appropriate consultations, and must be consistent with "C" route requirements outlined in the Programmatic Agreement for protection of cultural resources. These routes provide OHV opportunities to partially offset activities impacted by the reduction in OHV Area acreage as a result of the Twenty Nine Palms Marine Corps Air Ground Combat Center (MCAGCC) Expansion, commonly known as the 29 Palms Marine Base.

e. Identify a specific "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. This OHV Area connector was adopted in the 2006 WEMO Plan, but no specific route was ultimately delineated.

f. 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.

g. Limit staging and pit areas associated with "C" route Special Recreation Permit events to OHV Open Areas.

h. Identify a link between the Outlet Center Mall in Barstow to the Stoddard Valley OHV Open Area via a Competitive "C" connector route.

i. Identify a connector route, and if consistent with other objectives, a 2-way "C" route between the two remaining pieces of the Johnson Valley OHV Area, with appropriate minimization and mitigation measures. As needed coordinate with the 29 Palms Base and the Right-of-Way holder to facilitate completion of the connector route. This may require some minor rerouting, with appropriate NEPA/ESA/Section 106 compliance, along the current Right-of-Way boundary with the Base.

j. Consider some linear and loop trail opportunities in sensitive areas that do not have undue disturbance or substantial evidence of unauthorized use, and include minimization measures that minimize unauthorized use and potential impacts to sensitive resources.

k. Emphasize joint-use trails (e.g., multiple types of vehicles or ways of travel), and provide specific-user trails and trailheads to enhance opportunities for unique recreational experiences where resources are available.

l. In less sensitive areas, provide for a reasonable amount of recreational and touring opportunities, in addition to providing through-access on public lands to establish a comprehensive network.

3. Emerging Uses

a. Consider emerging access and access-dependent needs in development and management of the network; and

b. Have the route network support landscape-level conservation and use goals and strategies.

4. Landscape Settings

   a. 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; and

   b. Maintain or enhance recreational settings in the development and management of the network, where appropriate.

5. Means of Travel Allowed to Accomplish Objectives

   a. Provide an array of diverse and unique uses at recreation destinations, where appropriate; and

   b. Competitive motorized 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.

6. Social Conflicts Between Different Travel Types

   a. Provide for joint use of through access for visitors, local residents, and property owners if unique user opportunities are not the focus of routes, except in rural residential areas or Special Districts, consistent with other agencies, state and local governments, where appropriate;

   b. In rural residential areas provide access consistent with residential use, emphasizing Street-legal vehicles in most cases;

   c. In Special 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;

   d. Designate routes with Small Tracts Act easements consistent with BLM policy;

   e. Provide additional access opportunities to underserved motorized or non-motorized recreation types insofar as it is consistent with other objectives and resources are available to maintain them;

   f. Identify existing easements for joint use routes, as possible;

   g. Utilize minimization and mitigation measures (e.g., signing, fencing, education, closing routes, where appropriate) to address known safety issues, conflicts between users, and impacts to resources; and

   h. Develop partnerships to enhance opportunities for user-specific trail development and maintenance, including for non-motorized and non-mechanized trails.

7. Numbers and Types of Access Points

   a. 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 dedicated SPC areas 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.

b. Identify designated SPC areas and trailheads on previously disturbed areas that connect with the designated route network or provide access to popular non-motorized trails. Designated areas would include appropriate signing and access restrictions in order to limit proliferation, subject to site-specific analysis.

c. Any race staging and pitting areas for (C) routes would continue to be limited to OHV Open Area lands.

d. 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.

e. Identify a SPC designated area along Hoffman Road in the Fremont-Kramer DT ACEC, and consider one or more designated areas within the Superior-Cronese DT ACEC in the Coolgardie subregion and the Black Mountain subregion, within the Juniper Flats subregion near the USFS boundary, and at other identified locations, subject to site-specific analysis and consistent with the goals of the Proposed Action and the minimization criteria.

f. Reduce motorized access through sensitive areas with disturbance hotspots.

g. Develop partnerships or pursue area-specific minimization measures to address disturbance hotspots and reduce unauthorized use, as appropriate.

h. Limit access points in high conflict areas to manage sensitive resource and social impacts.

i. Develop strategies to identify and publicize where access points are and how to get to them.

8. Route Inventory System and existing Geographical Identity and Public Knowledge

a. Maintain an accurate route inventory for management purposes, and for the production of both general and recreation specific Transportation Management Network maps, and make those maps available to the public through electronic means;

b. Pursue reciprocal easements and utilize existing public easements to facilitate management of the primary access network; and

c. Develop site-specific minimization measures at popular and sensitive destinations that are experiencing substantial impacts from access, where appropriate.

9. Non-Casual Uses

a. Identify and direct ROW and other authorized activities to existing corridors/sites, when reasonable;

b. 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;

c. 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; and

d. Emphasize joint use of routes by multiple ROW holders, and by ROW holders and the public, when appropriate.

10. Boundaries for Management

a. Adopt nine TMAs to implement the route network;

b. 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;

c. 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; and

d. Work with Caltrans to identify and sign designated OHV crossings along major transportation routes at Subregion boundaries.

Future changes to the network would be developed consistent with these goals and objectives. General implementation direction for all action alternatives is shown in Table 2.3-6. More specific parameters for each TMA would be included in the TMPs.

Monitoring and Adaptive Management

Under the Proposed Action, monitoring and rehabilitation priorities in the Route Signing Plan posted at http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html, would be adjusted based on new information. The court ordered monitoring would continue, under the existing protocol, consistent with the details of the protocol. The priorities for implementation are based on a combination of factors including biological, wilderness, cultural, proximity to urban interface, and readiness, which would continue to be general guidance. TMPs would provide more specific guidance within the Subregions, and may also factor in specific recreational and other access implementation priorities, depending on the area. The basis of the biological priorities is outlined in more detail in the 2005 WEMO FEIS, page 2-164. These would be augmented with additional priorities related to other sensitive resources, particularly in special areas or where critical needs have been identified by staff and management. In addition to higher use DT ACEC and CDNCL areas, DT ACECs and CDNCLs adjacent to OHV Open Areas, and higher density tortoise areas, critical ACEC resources, adversely affected riparian areas and springs, and at-risk listed and eligible cultural properties would be high priorities.

In addition, BLM would continue to seek funding opportunities and other resources to expand the current education and outreach community partnership and other partnerships in the WEMO area.

Under the Proposed Action, the parameters for route network changes for the WEMO Planning area would be updated to reflect actual operational needs and provide for adjustment of the network, consistent with parameters in the TMPs and general thresholds for plan amendment changes outlined in Section 2.6. Opening or closing routes would be subject to appropriate NEPA compliance in all cases, including appropriate consultations, except in the case of emergencies, in which case NEPA would be completed consistent with regulatory requirements. These changes would occur within the parameters set in the 2006 WEMO Plan and the 2016 DRECP LUPA.

2.4 Comparison of Alternatives

Comparison of Plan Amendments Among Alternatives

Table 2.4-1 summarizes the differences between the alternative plan amendments. Of the seven plan amendment provisions being considered among the four 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, and 4. The changes associated with PAs II through VII would vary among Alternatives 2, 3, and 4. No plan amendments would be made under the No Action Alternative.

Comparison of Route Networks Between Alternatives

Table 2.4-2 summarizes the differences between the features of the alternative route networks. For comparison of the No Action Alternative to the other alternatives, it is important to note that the terminology associated with designation of route networks changed as a result of BLM's 2012 TTM Handbook. Prior to 2012, individual routes in OHV Limited Areas were designated in the CDCA Plan as Open, Limited, or Closed, and those are the designations assigned to routes within the No Action Alternative.

In the 2012 TTM Handbook, the terminology was modified. As discussed in Section 2.3, each individual transportation linear feature is designated as either part of the designated travel network ("Motorized", "Non-Motorized", or "Non-Mechanized"), or as Transportation Linear Disturbances which are not part of the travel network. The designated travel network includes motorized routes that would previously have been designated as Open or Limited, but also includes non-motorized routes, routes authorized for specific modes of travel or users, and routes with other restrictions. Transportation linear disturbances are roughly equivalent to what were previously designated as Closed routes, and are not open to any use.

This change in terminology complicates the direct, quantitative comparison of the network under the No Action Alternative versus Alternatives 2, 3, and 4. A comparison of the mileage of Open, Limited, and Closed routes under all alternatives cannot be made because these designations are not made to routes under Alternatives 2, 3, and 4. Similarly, a comparison of the mileage of the non-motorized network cannot be done because this designation was not made under the No Action Alternative. Though some comparisons can be done between the No Action and action alternatives (Alternatives 2, 3, and 4), and are presented in Table 2.4-2 below, these comparisons need to be considered within the context of this change in process and terminology.

Table 2.4-1. Comparison of Plan Amendments of Alternatives

Plan Amendment		Alt. 1 - No Action Alternative	Alt. 2 – Resource Conservation Enhancement	Alt. 3 – Public Land Access Maintenance	Alt. 4 – 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.	CDCA Plan language limiting travel to existing routes would 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.	Parameters for the management of organized competitive motorized vehicle events would 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.	The descriptions of approved access to specific wash, dune, and dry lake areas would 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.	The requirement for a permit to enter the designated access network in the Rand Mountains-Fremont Valley Management Area would be eliminated.	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 Non-DT ACECs and CDNCLs: 300 feet from centerline	DT ACECs and CDNCLs: 50 feet from centerline Non-DT ACECs and CDNCLs: 50 feet from centerline	DT ACECs and CDNCLs: 50 feet from centerline Non-DT ACECs and CDNCLs: 100 feet from centerline	DT ACECs and CDNCLs: 50 feet from centerline Non-DT ACECs and CDNCLs: 100 feet from centerline
	Camping Limits	Adjacent to routes, consistent with regulations DT ACECs and CDNCLs: Previously existing sites adjacent to routes designated open Non-DT ACECs and CDNCLs: Within 300 feet from routes designated open	DT ACECs and CDNCLs: Previously existing sites within 50 feet from centerline Non-DT ACECs and CDNCLs: Previously existing sites within 50 feet from centerline	DT ACECs and CDNCLs: Previously existing sites within 100 feet from centerline Non-DT ACECs and CDNCLs: Within 100 feet from centerline	DT ACECs and CDNCLs: Previously existing sites within 100 feet from centerline Non-DT ACECs and CDNCLs: Within 100 feet from centerline

Table 2.4-1. Comparison of Plan Amendments of Alternatives

Plan Amendment	Alt. 1 - No Action Alternative	Alt. 2 – Resource Conservation Enhancement	Alt. 3 – Public Land Access Maintenance	Alt. 4 – 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.	Livestock grazing would continue in DT ACECs and CHU in the Ord Mountain, Cantil Common, and Shadow Mountain Allotments.

Table 2.4-2. Comparison of Length (miles) of Alternative Route Networks

Current Designation	Alt. 1 – No Action	Alt. 2 – Resource Conservation Enhancement	Alt. 3 – Public Land Access Maintenance	Alt. 4 – Proposed Action
Motorized: Total Open/Limited Miles of Routes in Network, includes all Motorized subdesignations	6,074	5,231	10,864	6,313
Motorized subdesignation: Motorcycle	36	24	36	118
Motorized subdesignation: Street-Legal Only	NA	361	62	142
Non-Motorized Routes (miles)		35	71	107
Non-Mechanized Routes (miles)		16	92	72
Total Closed Miles of Transportation Linear Disturbance	9,929[1]	10,718	4,977	9,507
Total Inventoried Transportation Linear Disturbance (miles)	16,003	16,003	16,003	16,003

1 – Value includes routes designated as closed, plus routes undesignated.

Results of Preliminary Transportation Network Designation Process

As discussed in Section 2.3.1, 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 Open, Limited, or Closed. The mileage of the network within the No Action Alternative is 6,074 miles, but this total comprises only motorized routes designated as Open or Limited, and does not include Closed Routes or non-motorized routes.

Then, to develop Alternatives 2, 3, and 4, 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, 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, and 4, 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 motorized vehicle use as well as the opening of currently closed routes. These routes would be reclassified as transportation linear disturbances, motorized, non-motorized, or non-mechanized.

Following publication of the Draft SEIS and review of public comments, Alternative 4 was re-developed as the Proposed Action network, and has been analyzed in this Draft SEIS. The issues considered in the development of the Proposed Action network include:

- Additional updates to the route inventory since the Draft SEIS;
- Consideration of additional or updated resource data, including:
  - DoD land acquisitions with conservation easements;
  - Additional data on soil erosion;
  - Updated desert tortoise habitat data;
  - Updated Clean Air Act attainment classifications; and
  - Designation of Mojave Trails and Sand to Snow National Monuments
  - New land use designations, visual resource management (VRM) classifications, and grazing changes adopted through the DRECP LUPA.
- Re-consideration of previous route designations based on public comments;
- Closure of routes in the Ft. Irwin mitigation area;
- Assignment of the street-legal sub-designation where appropriate;
- Compliance of the route network with cumulative DRECP LUPA disturbance caps; and
- Consistency with goals established in the TMPs.

Proposed Action

The Agency Proposed Action includes elements of each of the action alternatives evaluated in the Draft SEIS, as modified as described above. The Proposed Action includes minimization measures to address impacts, and integrates some elements of Alternatives 1, 2, and 3 in order to enhance community values, address DAC issues, and respond to specific agency comments, consistent with the 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 Proposed Action includes a much larger network than the network approved under the 2006 WEMO Plan, but also would close 7,352 more miles of additional routes than those that were designated closed in the 2006 WEMO Plan. The Proposed Action would make available to the public, or to authorized users, 6,313 miles of motorized routes, and also would close 9,507 miles of routes.

The 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 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. The closure of 9,507 miles under the Proposed Action alternative is an increase in the 2,155 miles of closures approved in the 2006 WEMO ROD.

Summary Comparison of Livestock Grazing Proposals Between Alternatives

Table 2.4-3 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 and CHU. 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 or 4.

Table 2.4-3. Comparison of Alternative Grazing Program Allotment Components[1]

Allotment	Alternative	Allotment Acres Remaining Outside DT ACECs/CHU	Allotment Acres Remaining Within DT ACECs/CHU	AUMs
Cantil Common	1	196,171	6,726	0
	2	196,171	0	0
	3	196,171	6,726	0
	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
	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
	Proposed Action	16,364	3,323	0

[1] There would be no changes to any other allotments.

2.5 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 closure 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 CHU. 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.

2.6 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, climate change, 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 Areas of Critical Environmental Concern (ACECs), Desert Tortoise ACECs (DT ACECs; formerly designated as Desert Wildlife Management Areas [DWMAs], California Desert National Conservation Lands (CDNCLs), wilderness areas, Wilderness Study Areas (WSAs), national monuments, and areas managed for wilderness characteristics.

Information and data used to prepare this chapter were obtained from the California Desert Conservation Area (CDCA) Plan, the 2006 WEMO FEIS, and various Bureau of Land Management (BLM) planning and National Environmental Policy Act (NEPA) documents, including the 2016 Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA). This would also include 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 Analysis of the Management Situation

This section describes how transportation and grazing are currently managed in the WEMO Planning area, with an emphasis on the historical evolution of the route network and grazing and the transportation management and grazing policies in response to legislation, resource considerations, land uses, and social and economic conditions. This section summarizes how resources and land uses have influenced the development of the transportation network and livestock grazing practices in the Planning Area, and how they have resulted in the current transportation network and management policies for that network and livestock grazing in the West Mojave Planning Area. The specific resources, land use needs, and social and economic conditions that may be affected by the transportation network alternatives, including livestock grazing are presented throughout the resource-specific subsections of Chapter 3.

3.1.1 Current Management Direction

3.1.1.1 Legislation and Policies

Federal Land Policy and Management Act (FLPMA)

The BLM's planning process is governed by FLPMA (43 USC 1712) and 43 Code of Federal Regulations (CFR) 1600. FLPMA requires Land Use Plans (LUPs) to be developed, maintained and when appropriate, to be revised to provide for the use of the public lands. In development and revision of land use plans BLM is required to use multiple use and sustained yield principles, achieve integrated consideration of physical, biological, economic, and other sciences, rely on present inventories of the public lands and their resources and values, consider the present and potential use of the public lands, comply with applicable pollution control laws, and consider the policies of state, local and tribal land use plans. As required by FLPMA, public lands must be managed in a manner that protects the quality of public land resources, and that provides for outdoor recreation and human occupancy and use (43 USC 1701(a)(8)).

FLPMA specifically addresses transportation and motorized vehicle access, as well a livestock grazing. In addition to the Congressional Declaration of Policy, 43 USC 1701, noted above, Part 6 and Part 7 of Title V, authorizes the issuance of rights-of-way for use of the public lands. Title VI of FLPMA, which established the CDCA, specifies that the use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan, to conserve resources for future generations, to provide for the present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles (OHV) (43 USC 1781).

Executive Orders No. 11644, 11989, and 13195

In 1972, Presidential Executive Order No. 11644 established the first uniform policies regarding OHV use on public lands. Each land management agency was directed by this Order to issue directions as to which trails and areas were open for OHV use and which were not. The Order required that OHV use be monitored to assess and minimize associated impacts. The requirements of the Order were implemented by BLM in 43 CFR 8342.1. Executive Order 11989 (42 FR 26959, May. 24, 1977) amended Executive Order 11644 (37 FR 2877, Feb. 8, 1972) by requiring that off-road vehicle areas or trails be closed immediately if an agency determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat, or cultural or historic resources. Executive Order 13195, January 23, 2001 (66 FR 7391) Trails for America in the 21st Century provides, in part, that Federal agencies will work cooperatively with Tribes, States, local governments, and interested citizen groups to protect, connect, and promote trails of all types throughout the United States

Federal Regulation 43 CFR 8342.1

The CDCA Plan's motorized-vehicle access element was amended (1982 Plan Amendment Three, approved May 17, 1983) to conform with 43 CFR 8342.1, which states:

"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."

Wilderness Act of 1964 and Omnibus Bill of 2009

The Wilderness Act of 1964 established the National Wilderness Preservation System. Wilderness as defined by the Act is "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions" for the benefit of present and future generations (Wilderness Act, 1964).

The 2009 Omnibus Public Land Management Act of 2009 added more than two million acres of wilderness, more than 1,000 miles of Wild and Scenic Rivers, and established new National Parks, conservation areas, national heritage areas, national trails, and national monuments. The bill created new water conservation, habitat restoration, and land management programs, and gave formal recognition to the 26 million acre National Landscape Conservation System (NLCS) encompassing BLM's National Monuments, Conservation Areas, Wilderness and Wilderness Study Areas, Wild and Scenic Rivers, and Scenic and Historic Trails.

The WEMO Planning area includes areas designated as wilderness, as well as legislatively designated Wilderness Study Areas (WSA). In addition, the Mojave River in the planning area includes segments that have been determined to be eligible Wild and Scenic Rivers. Other lands in the planning area have not been designated as wilderness or WSA, but retain wilderness characteristics. These various lands are discussed in Section 3.11.

BLM Travel and Transportation Management Guidance

In recent years, BLM has developed substantial guidance to facilitate the integration of comprehensive travel and transportation management planning into land use planning. Travel and Transportation Manual 1626 (MS-1626, revised September 27, 2016), forms the backbone of this guidance. Many of these developments were in the form of Instruction Memorandums (IMs), which only have temporary applicability until their provisions are formally incorporated into a BLM Manual or Handbook. A summary of the recent IMs and Handbooks is as follows:

- H-1601-1, Land Use Planning Handbook, Appendix C, Part D. Comprehensive Trails and Travel Management. March 11, 2005.

- Technical Note 422. Roads and Trails Terminology. November 2006. Implemented in IM 2006-173, dated June 20, 2006.
- IM 2007-030. Clarification of Cultural Resource Considerations for OHV Designation and Travel Management. December 22, 2006.
- IM-2012-067. Clarification of Cultural Resource Considerations for Off-Highway Vehicle Designations and Travel Management. February, 10, 2012.
- IM 2008-014. Clarification of Guidance and Integration of Comprehensive Travel and Transportation Management Planning in the Land Use Planning. October 25, 2007.
- H-8342-1, Travel and Transportation Management Handbook. March 16, 2012.

Livestock Grazing

Within the West Mojave Planning Area, domestic livestock grazing is managed under the authorities contained in the Taylor Grazing Act of 1934, FLPMA, NEPA, Endangered Species Act of 1973 (ESA), the Public Rangelands Improvement Act of 1978 and the CDCA Plan of 1980, as amended. Within the grazing regulations, 43 CFR Part 4100 are specific guidance for the administration of livestock grazing on the public lands.

The Continuing Resolutions authorized by Congress over the past few years have contained language specific to livestock grazing concerning grazing permit and lease renewals, the trailing of livestock across public lands, the administrative review process, grazing transfers and changes in the mandatory terms and conditions.

The Consolidated Appropriations Act of 2012, specifically addresses livestock grazing in the California Desert Conservation Area. This Act allowed for the donation of grazing permits and leases back to BLM and make the land available for mitigation by allocating the forage to wildlife use consistent with any applicable Habitat Conservation Plan, Section 10(a)(1)(B) permit, or Section 7 consultation under the ESA.

Section 3023 of Public Law (PL) 113-291, National Defense Authorization Act (NDAA) 2015, amended Section 402 of FLPMA of 1976 and includes seven provisions related to livestock grazing. Amended Section 402(c)(2), allows BLM to renew expiring grazing permits/leases when BLM is unable to complete the requirements of NEPA and other applicable laws prior to the expiration of a grazing permit or lease under the same terms and conditions of the expiring permit or lease for a period up to ten years. These nondiscretionary grazing permits or leases issued in accordance with Section 402(c)(2) of FLPMA as amended by PL 113-291 are not protestable or appealable under the processes described in 43 CFR 4160 and 43 CFR 4.470 et seq. [1].

Other Agencies

No other federal, state, or local agencies have specific jurisdiction over motorized vehicle use and livestock grazing on public lands. The National Highway Traffic Safety Administration (NHTSA) has established Federal Motor Vehicle Safety Standards (FMVSS) for motor vehicles, and these, along with California state regulations established by the Department of Motor Vehicles (DMV), California Air Resources Board (CARB), and California Highway Patrol (CHP), govern the types of vehicles that may be used on highways. In addition, the route network established for the WEMO Planning area must be consistent with the networks established in the adjacent areas by

considering "edge-fitting," in which open routes in the WEMO Planning area would link with open routes in adjacent areas, and the same would occur for closed routes. Within the West Mojave Planning Area, the U.S. Fish and Wildlife Service (USFWS) has issued biological opinions that contain terms and conditions which direct BLM's livestock grazing program on matters concerning the conservation and recovery of special status species and their habitats.

3.1.1.2 CDCA Plan

General Description

The BLM administers approximately 3.1 million acres of public lands within the WEMO Planning area. Management is guided by the BLM's California Desert Conservation Area Plan, adopted in 1980 and amended on numerous occasions since then. Congress specifically directed the BLM to prepare the CDCA Plan under the Federal Land Policy and Management Act of 1976. Finding that the California desert and its resources, "including certain rare and endangered species of wildlife, plants and fishes" are "seriously threatened by air pollution, inadequate Federal management authority, and pressures of increased use, particularly recreational use," Congress stated that "the use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles." To accomplish this, BLM was directed to prepare a plan for the "management, use, development, and protection of public lands within the California Desert Conservation Area" (of which the western Mojave Desert comprises the northwestern third). The plan would "take into account the principles of multiple use and sustained yield in providing for resource use and development, including, but not limited to, maintenance of environmental quality, rights of way, and mineral development."

The goal of the Motorized-Vehicle Access Element of the CDCA Plan is to provide a system and set of rules governing access to the CDCA by motor vehicles. Specific objectives included are:

- Provide for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners, and other public agencies.
- When designating or amending areas or routes for motorized vehicle access, to the degree possible, avoid adverse impacts to desert resources.
- Use maps, signs, and published information to communicate the motorized vehicle access situation to desert users. Be sure all information materials are understandable and easy to follow.

In addition to the goals stated in the Motorized Vehicle Access Element, other elements of the CDCA Plan address access needs for various desert uses, as follows:

- The Recreation Element cited access to recreational opportunities using motorized vehicles as being among the most important recreation issues in the desert, and ensuring that access routes necessary for recreation are provided is a primary consideration of the recreation program.
- The Geology, Energy, and Mineral Element requires that BLM continue to provide access and opportunities for exploration and development on public lands which are accessed or have potential for:

i) Critical mineral resources (national defense; 50+% importer; net importer)

ii) Potential energy resources (geothermal, oil, gas, uranium, and thorium)

iii) Minerals of local and State importance (sand & gravel, limestone, gypsum, iron, specialty clays, zeolites)

- The Energy Production and Utility Corridors Element specifies that the Plan will provide space not only for communications sites, but for associated infrastructure such as access roads. In addition, this element allows for the development of renewable and other energy production and transmission facilities, each of which requires access.

The Livestock Grazing Element states that currently and historically, livestock grazing has been and continues to be a significant use of renewable resources on public lands in the California Desert. The goals of the element are:

- Use range management to maintain or improve vegetation to meet livestock needs and to meet other management objectives sit forth in this plan.
- Continue to use the California Desert for livestock production to contribute to satisfying the need for food and fiber from public land.
- Maintain good and excellent range condition and improve poor and fair range condition by on condition class, through the development and implementation of feasible grazing systems or Allotment Management Plans (AMPs). Adjust livestock grazing use where monitoring data indicate changes are necessary to meet resources objectives.

Area Designations

BLM's planning regulations (43 CFR 8341) require that all public lands be designated as "open," "limited," or "closed" to OHV use. Within designated "open" areas, all types of vehicle use are permitted anywhere in the area, subject to operating regulations and vehicle standards provided in 43 CFR 8341 and 8342. Within "closed" areas, all OHV use is prohibited. Within "limited" areas, individual roads, primitive roads, and trails can be designated as "open," "closed," or "limited," and BLM must establish permitted types or modes of travel, time or season of use, allowable vehicle types, authorization or permit requirements, and other types of user limitations. OHV area designations are LUP decisions, as opposed to implementation decisions. Specific route designations within area designations are implementation level decisions.

The CDCA Plan adopted landscape-level Vehicle Access designations, presented in Map 10 of the Plan. The Vehicle Access designations were made commensurate with the multiple-use class (MUC) designation for each area. The three Vehicle Access Designations are "open areas," "closed areas," and "limited areas." Vehicle use in open areas was approved subject to restrictions by the operating regulations and vehicle standards described in 43 CFR 8341 and 8342. Closed areas included all public lands within designated wilderness areas, and other specified areas closed by the CDCA Plan or specific activity-level management plans. Page 76 of the CDCA Plan (1999 reprint) in Table 8 and for four listed areas immediately before the table, includes areas designated as closed prior to the CDCA Plan which remain closed under the CDCA Plan, and will remain closed under the Plan unless modified by subsequent implementing action. Table 9 includes significant sand dune areas or dry lake beds which have either been opened or closed under the CDCA Plan (CDCA Plan, p.78, 1999 reprint).

Within the limited areas, the CDCA Plan stated that "Limited" vehicle access means that motorized-vehicle access is allowed only on "routes of travel." According to the language of the CDCA Plan, at the minimum, use will be restricted to existing routes of travel. BLM would work with the public to determine which routes needed to be closed or limited in some other way, in consideration of the criteria listed in 43 CFR 8342.1.

Route Designations

The designation of individual roads, primitive roads, and trails are addressed as an implementation level plan tiered from the LUP. These decisions can be developed as stand-alone TMPs, or can be incorporated into activity management plans,

The CDCA Plan provided the following definitions for open, closed, and limited routes.

- Open Route. Access on the route by motorized vehicles is allowed. Specific uses with potential for resource damage or significant conflict with other use may require specific authorization.
- Closed Route. Access on route by motorized vehicles is prohibited except for: (1) fire, military, emergency or law enforcement vehicles when used for emergency purposes; (2) combat or combat support vehicles when used for national defense purposes: (3) vehicles used for official purposes by employees, agents, or designated representatives of the federal government or one of its contractors. Use must be consistent with the multiple use guidelines for that area.
- Limited Route. Access on route is limited to use by motor vehicles with respect to number of vehicles, type of vehicles allowed, time or season of vehicle use, permit or license requirements, and speed limits.

The definition of limited routes is further defined in the 2012 TTM Handbook (H-8342-1) to include consideration of types or modes of travel; identification of roads, primitive roads, and trails; time or season of use; types of vehicles (OHV, motorcycle, ATV, high clearance, etc.); authorizations or permits for vehicles or users; and BLM administrative use only or other types of limitations.

Implementation Strategies in CDCA Plan

The CDCA Plan specified on-the-ground implementation of the OHV Area designations made in the Plan, as follows:

- Open areas were signed and identified on maps for public distribution. In open areas that abut private lands, BLM encourages users to avoid unauthorized use through the use of signs, brochures, on-site personnel, and placement of permanent kiosks. Signs and maps also indicate locations of military land boundaries.
- Closed areas were signed to prevent unauthorized use, and identified on publicly available maps.
- For Limited areas, BLM developed considerations to be used in designating individual routes.

Plan Amendments Relevant to TTM

The CDCA Plan has been amended several times since 1980 to authorize designations of areas and routes for OHV use. BLM's planning regulations (43 CFR 8341), as mandated by Executive Order 11644, require that all public lands be designated as "open," "limited," or "closed" to OHV use. Within "open" areas, all types of vehicle use are permitted anywhere in the area, subject to operating regulations and vehicle standards provided in 43 CFR 8341 and 8342. Within "closed" areas, all OHV use is prohibited. Within "limited" areas, individual roads, primitive roads, and trails can be designated as "open," "closed," or "limited," and BLM must establish permitted types or modes of travel, time or season of use, allowable vehicle types, authorization or permit requirements, and other types of user limitations.

Numerous CDCA Plan amendments since 1980 have added or modified specific route designations within the "limited" areas in the planning areas. These designations occurred through a West Mojave-wide effort in the middle 1980s, during the preparation of ACEC plans beginning in the 1980s, and during a mid-1990s pilot project at Ord Mountain. These efforts alone designated 3,266 miles of open routes within the planning area, and are described in more detail below.

1985-87 Off-Road Vehicle Designations

BLM conducted a field and map inventory of OHV routes on public lands throughout the planning area in the mid-1980s and, based upon that inventory, identified a network of open motorized vehicle access routes. BLM personnel inventoried and evaluated existing routes of travel. Information from existing maps and aerial photos was supplemented by field checks. This information was then utilized to create a known route inventory that primarily consisted of known "two-track" routes (i.e. "single-track" motorcycle routes were generally not part of the inventory). Public meetings were conducted and members of the public also reviewed these route inventories. Criteria for determining which routes were to remain open was based upon public access needs, recreational values and resource considerations. Following public meetings, decisions to designate the route network were announced.

On August 21, 1985, BLM published a Notice in the Federal Register titled Off-Road Vehicle Designation Decisions; Ridgecrest Resource Area, CA (Federal Register, Vol. 50, No. 182). Two years later, on June 19, 1987, BLM published Federal Register notice titled Off-Road Vehicle Route Designation Decisions for the California Desert District (CDD), Barstow Resource Area (Federal Register, Vol. 52, No. 118, p. 23364); and, on September 22, 1987, BLM published a Federal Register notice titled Off-Road Vehicle Route Designation Decisions for the California Desert District, Barstow Resource Area (Federal Register, Vol. 52, No. 183, p. 35589). These notices designated 2,949 miles of OHV routes on public lands as open routes.

Some of the lands, which were acquired after the 1985-1987 inventories, were evaluated in subsequent ACEC Plans or the 2006 WEMO Plan. However, other lands acquired after 1987 were not included in the 2006 WEMO Plan baseline. Those lands were included in the 2012 inventories, and are part of the reason for the increase in the inventory of routes from approximately 7,000 miles in 2006 to approximately 16,000 miles for the current SEIS.

Resource Protection Off-Road Vehicle Designations

Since 1980, many BLM ACECs have identified motorized vehicle access networks through public lands, collectively identifying 317 miles of open routes. Table 3.1-1 lists these plans, together with the date the route network in each was developed.

Table 3.1-1. Pre-WEMO ACEC Route Networks and Principal Recreation Activities

ACEC Name	Size (Acres)	Year	Route Status	Principal Recreation Activities
Afton Canyon	8,830	1989	26-mile designated route system	Camping, vehicular touring, equestrian, rock hounding, recreational mining on outside edges of area.
Amboy Crater National Natural Landmark	639	NA	One access route to parking area.	Geologic exploration, rock hounding
Barstow Woolly Sunflower	19,079	1982	Mapped routes excluded; vehicles excluded From NW ¼ of Section 11; T11N; R6W	Non-vehicular dependent: Hiking, botanizing
Bedrock Springs	786	1987	Mapped designated route system	Access to prehistoric values and Northern portion of the Golden Valley Wilderness Area
Big Morongo Canyon	24,934	1982 and 1996	Mapped designated route system; Routes designated in 2002 Coachella Valley Plan Amendment	Hiking, wildlife viewing, picnicking
Black Mountain	51,261	1988	26-mile designated route system	OHV recreation and touring, equestrian riding, hiking, camping, prehistoric and historic interpretation, recreational mining on northeastern fringe of area, wilderness recreation, in the southcentral Black Mountain subregion.
Calico Early Man Site	834	1984	Mapped designated route system	OHV touring, hiking, camping, prehistoric and historic interpretation, located in the southern portion of the Calico Mountains Subregion.
Christmas Canyon	3,445	NA	No route designation because most of ACEC is within Open area	OHV recreation and touring, historic interpretation. Located in Spangler Hills OHV area and China Lake Naval Weapons Center.
Cronese Basin	8,469	1984	Mapped designated route system	OHV touring, bird-watching, wildlife viewing, in the center of the Cronese Lake Subregion.

Table 3.1-1. Pre-WEMO ACEC Route Networks and Principal Recreation Activities

ACEC Name	Size (Acres)	Year	Route Status	Principal Recreation Activities
Desert Tortoise Research Natural Area	22,230	1988	Designated closed to vehicular use; protected by perimeter fence	Hiking, wildlife viewing, shooting, located in the southwestern portion of the Rands Subregion.
Fossil Falls	1,630	1986	Designated route system	OHV touring, prehistoric appreciation. Located at north end of Sierra subregion.
Great Falls Basin	9,539	1987	Mapped designated route system	OHV touring, picnicking, bird-watching, wildlife viewing. Located just north of Trona.
Harper Dry Lake	485	1982	Mapped designated route system; all routes within 100 yards of marsh vegetation closed.	OHV touring, bird-watching, equestrian riding. Located southwest of Black Mountain Wilderness Area in the Harper Lake Subregion.
Jawbone/Butterbredt	147,832	1982	133-mile designated route system	OHV touring, bird-watching, wildlife watching, rock-climbing. Located in the Jawbone subregion.
Juniper Flats	2,387	1988	Mapped designated route system	Equestrian riding, OHV recreation and touring, access to Deep Creek hot springs. Located north of San Bernardino Mountains, in the western portion of the Juniper Flats Subregion.
Last Chance Canyon	5,135	1982	Designated route system	OHV recreation and touring, historic appreciation, wildlife viewing. Located south of El Paso Mountains Wilderness Area.
Manix	2,907	NA	None	Paleontological and historic interpretation, OHV touring. Located at the western boundary of the Afton Subregion.
Mojave Fishhook	637	1990	Designated route system	OHV touring, botanizing
Rainbow Basin	4,103	1991	30-mile designated route system	Camping, OHV touring, equestrian riding, hiking, geologic, paleontological and prehistoric interpretation. Located in the southwestern portion of the Coolgardie subregion.

Table 3.1-1. Pre-WEMO ACEC Route Networks and Principal Recreation Activities

ACEC Name	Size (Acres)	Year	Route Status	Principal Recreation Activities
Red Mountain Spring (formerly Squaw Spring)	718	1987	Mapped designated route system; area closed to vehicular travel	Prehistoric and historic interpretation. Located in northern portion of Red Mountain subregion.
Rodman Mountains Cultural Area	6,208	NA	Routes outside Rodman Mtns. Wilderness were designated as part of Ord-Rodman Plan	OHV touring and recreation, cultural interpretation, hiking, wilderness recreation. Located in the southern portion of the Rodman Wilderness in the Newberry-Rodman Subregion
Rose Springs	838	1985	Routes designated closed	Hiking, wildlife viewing, prehistoric interpretation, hunting. Located in north end of Sierra subregion.
Sand Canyon	2,583	1989	Specific route closures	Hiking, wildlife viewing, bird-watching, hunting, cultural interpretation. Located in southern end of the Sierra subregion.
Short Canyon	754	1990	Most of the ACEC routes are closed because they are within wilderness	Hiking, botanizing, wildlife viewing, bird-watching, hunting. Located in Sierra subregion, borders Owens Peak Wilderness.
Soggy Dry Lake Creosote Rings	184	1982	All vehicular routes closed to protect unique vegetation	Botanizing, hiking. Located just south of Johnson Valley OHV area in the Johnson Valley Subregion.
Steam Well	41	1982	Designated route system; All routes closed with inclusion of ACEC in the Golden Valley Wilderness Area	Prehistoric and historic interpretation. Located in southwest edge of Golden Valley Wilderness area.
Trona Pinnacles	4,058	1989	Designated route system	Sightseeing, commercial filming, OHV touring, geologic interpretation. Located in South Searles subregion.
Western Rand Mountains	31,102	1994	128-mile designated route system	OHV touring and recreation. Applied to ACEC and surrounding lands. Located in the Rand Subregion
Whitewater Canyon	13,973	1982	Designated route system	OHV touring, wildlife viewing, hiking.

Ord Mountain Pilot Off-Road Vehicle Designations

In 1995, the BLM undertook a pilot project within the Ord Mountain area to test methods to acquire an inventory of routes of travel. A pilot digital aerial photograph was used together with GIS digitizing equipment to identify 549 miles of existing routes of travel in the area. From this inventory, BLM identified alternatives, analyzed impacts in an environmental assessment, and adopted a network for the area in a 1995 decision record.

WEMO 2003 Western Mojave Desert Off-Road Designation Project

The 2006 WEMO Plan was prepared through the collaborative effort of city, county, state, and federal agencies which had jurisdiction over lands within the region. To support the development of the 2006 WEMO Plan, these agencies and local jurisdictions cooperated with more than 100 non-governmental organizations (NGOs) including businesses, environmental groups, and user groups. Representatives of the agencies, jurisdictions, and the NGOs comprised the West Mojave Supergroup. In November 1999, the West Mojave Supergroup established four task groups to develop components of the WEMO Plan. Of these, Task Group 2 was developed to address the Motorized Vehicle Access Network.

To assist Task Group 2 and the route designation process, two subcommittees were formed: a field survey advisory group and a route designation technical committee. As the task group process evolved, certain issues would emerge that would result in considerable public interest or controversy, including the design of the motorized vehicle access network. When this occurred, public information meetings were held throughout the desert on an irregular basis. About a dozen of these meetings, attended by a total of approximately 250 persons, were held during the task group process. Many persons who first became involved through these meetings later joined one or another of the task groups.

Between September 2001 and March 2002, thirteen field crews inventoried nearly 8,000 miles of motorized vehicle access routes within the western Mojave Desert. Both four-wheel drive and motorcycle crews participated in the survey. Routes were recorded using global positioning system (GPS) technology. The nature of the route (graded gravel, good dirt, motorcycle trail) was recorded, and nearly two dozen types of pertinent desert features mapped (including campsites, mines, trailheads, and water sources). This information was transferred into the planning team's digital GIS library. In addition, data collected by BLM field survey crews in 1985 and 1987, and during the preparation of BLM management plans for ACECs between 1980 and the late 1990s, was digitized and stored in the GIS database. This data was supplemented by data digitally collected from aerial photography taken in 1995 and 1996, and covering most public lands within the planning area.

In the 2001 and 2002 field inventory, BLM conducted its route inventory of the most environmentally sensitive areas (in terms of biological resources) to make some route specific adjustments to the 1985 and 1987 CDCA amendments. The 2001 and 2002 field inventory was conducted in 10 of the 21 subregions identified in the 2003 planning effort. A description of these field-surveyed subregions is provided in Table 3.1-2.

Table 3.1-2. Off-Road Vehicle Designation Subregions

Subregion	Principal Recreation Activities	Route Mileage Designated Open 1985-87	Route Mileage 2001 Route Inventory	Comments
Coyote	Rock hounding, off-highway touring/sightseeing, mining.	178	411	Calico Early Man Archaeological Site, Cronese Lakes ACEC, and Soda Mountains Wilderness Study Area. OHV recreation relatively light. Most OHV activity occurs in southwestern sectors.
El Mirage	OHV, recreational mining	49	267	El Mirage OHV recreation area borders subregion to the south. Area of more historic use than current use. Once more popular for races which have since shifted to the Open Areas. Edwards bowl in the western sector popular as a motorcycle area creates some conflicts with adjoining private property owners. Shadow Mountain once very popular with motorcyclists. Use now restricted due to conflicts with hamlet of Shadow Mountain to the south. Bajadas north of Shadow Mountain have been found to have higher than average desert tortoise sign.
El Paso	OHV use, rock hounding, shooting/hunting.	324	465	Last Chance Canyon ACEC and El Paso Mountains Wilderness abut the subregion. Very mountainous area universally popular for a variety of visitor types including jeepers, motorcyclists, miners, campers, rock hounders, equestrians, historical explorers and upland game hunters
Fremont	OHV use, shooting/hunting, rock hounding, equestrian riding, hiking, recreational mining.	214	582	Contains Barstow Woolly Sunflower ACEC, Harper Dry Lake ACEC, and the Black Mountain Wilderness. Northern hilly sectors very popular longstanding MC area; Gravel Hills and Hamburger Mill northwest of Fremont Peak known for long-term historical use. Bajada areas in the southern sectors not nearly as popular as the above-described areas to the north. Bajadas areas in the south and central sector known for historically high populations of desert tortoise.
Kramer	OHV use/dual sport, rock hounding, shooting/ hunting	254	642	Mining and homestead site established in the late 19th and early 20th century exists in the area, some of which may have historical significance.

Table 3.1-2. Off-Road Vehicle Designation Subregions

Subregion	Principal Recreation Activities	Route Mileage Designated Open 1985-87	Route Mileage 2001 Route Inventory	Comments
Middle Knob	OHV touring/sightseeing, camping, hiking, hunting	N/A	91	Cultural resources are significant in the subregion. Contains biological values of special concern, including habitat for desert tortoises.
Newberry-Rodman	Equestrian, OHV touring, sightseeing, dual sport, rock hounding, mining	142	210	Subregion contains the Newberry Mountains Wilderness, the Rodman Mountains Wilderness and the adjoining Rodman Mountains ACEC. Rock art and cultural sites are within the subregion.
Ord	Recreational mining, OHV touring/ sightseeing	38	549	The historic Ord Mountain Road and the Daggett Wash Road are accessible by four-wheel drive vehicles and motorcycles (OHV/dual sport). The Stoddard Valley OHV Recreation Area to the west and the Johnson Valley OHV area to the southeast of the subregion provide for OHV/dual sport activities.
Red Mountain	OHV touring/sightseeing, shooting hunting, OHV/ dual sport, hiking, equestrian riding, mining.	234	733	The Grass Valley Wilderness is partly contained in the subregion and the Golden Valley Wilderness borders the subregion to the north. These bajada areas in the central west sector west of Cuddeback Lake, are known for historically high populations of desert tortoise and extremely high historical mining activity.
Ridgecrest	Hiking, equestrian OHV/dual sport	106	328	The Rademacher Hills trails open to the hiking, jogging, horseback riding and mountain biking.
Superior	OHV/dual sport, rock hounding, camping, mining.	396	668	Contains the Rainbow Basin National Natural Landmark ACEC. The Black Mountain Wilderness lies to the west of the subregion and the Calico Mountains lie to the south east of the subregion.

The updates to eight of these subregions along with minor revisions to the 1985-87, and ACEC Off Road Vehicle designations served as the basis for the evaluation in BLM's 2003 Environmental Assessment and Decision Record for the Western Mojave Desert Off-Road Vehicle Designation Project. The minor revisions occurred in the North Searles and El Mirage subregions, Black Mountain ACEC along with edge matching efforts at 25 locations to align the ACEC, 1985-87, and 2002 designation boundaries. For the El Paso Mountains and Ridgecrest subregions the existing 1985-87 network was adopted until completion of a collaborative planning effort that with

local jurisdictions and the general public. Upon completion of this collaborative effort and NEPA analysis the route network will be amended.

The purpose of the 2003 Western Mojave Desert Off-Road Vehicle Designation Project was to update the existing West Mojave route designations, and to adopt the revised route network as a component of the CDCA Plan, while the 2006 WEMO Plan was under development. The 2003 Designation Project evaluated four route network alternatives developed to meet enhanced ecosystem protection and enhanced recreation objectives. The resulting Record of Decision selected Alternative A, which was based on the existing route designations, modified to incorporate a revised network within desert tortoise critical habitat and other sensitive resource areas. That network, totaling 5,098 mile of routes, served as the basis for the route network alternatives evaluated in the 2006 WEMO Plan.

3.1.1.3 2006 WEMO Plan

The route designations adopted in the 2003 route designation effort were then considered as the baseline for the No Action Alternative in the development of the 2006 WEMO Plan. The baseline was then subjected to minor modifications and a field survey in one additional subregion—Juniper Flats. The EIS for the 2006 WEMO Plan evaluated seven alternatives which addressed various use restrictions, using the findings in the 2003 route designation effort as a point of departure. With respect to travel management, the use restrictions on the routes varied among the 2006 WEMO FEIS alternatives, but the overall mileage of the network did not vary. The proposed network evaluated in the 2005 WEMO FEIS consisted of the 2003 network with modifications in specific areas. The Record of Decision (ROD) adopted the FEIS proposed action with minor modifications, resulting in the 5,098 mile network of the 2006 WEMO Plan.

Vehicle Access Decisions in 2006 WEMO ROD

In 2006, the BLM approved a comprehensive amendment covering the WEMO Planning area of the CDCA. Key elements of the CDCA Plan that were updated for the WEMO Planning Area include the Wildlife Element, the Vegetation Element, the Grazing Element, the Recreation Element, and the Motor Vehicle Access Element.

The vehicle route network approved in the 2006 WEMO Plan was based on the 2003 vehicle route network, with the following modifications:

- The mileage of non-motorcycle routes in higher density tortoise population areas was decreased from 439 miles to 384 miles;
- The mileage of vehicle routes within ACECs was reduced from 427 miles to 406 miles; and
- Within the Juniper subregion, a redesigned vehicle access network of 73 miles of open routes and 25 routes that would be limited to use by single-track vehicles (motorcycles) replaced the 152 miles of open routes that had been adopted in 2003.

Overall, the 2006 WEMO Plan included modification of the vehicle management decisions, including OHV route designations, on more than 3 million acres of public land within the CDCA. The ROD for the 2006 WEMO Plan approved the designation of 5,098 miles of motorized vehicle routes.

The 2006 WEMO Plan Amendment approved a total of 12 separate decisions, each affecting multiple geographical areas with the planning area. Most of the decisions focused on establishment or adjustment of ACECs for biological resources and changes to multiple use classes to reflect an increased resource protection balance. The specific decisions related to Motorized Vehicle Use and route designations made in the 2006 WEMO ROD, are as follows:

- Decision 5: Recommendations made in the 1994 Rand Mountains-Fremont Valley Management Plan were adopted, including adoption of the proposed motorized vehicle access network to be managed with an educational permit system.
- Decision 6: The motorized vehicle access network in the Afton Canyon Natural Area was adopted.
- Decision 9: The motorized vehicle access network in the remainder of the planning area was adopted, and included minor modifications of the 2003 route network, a redesign of the Juniper subregion, and route closures in the Lane mountain milkvetch ACEC, Barstow woolly sunflower ACEC, the Mojave monkeyflower ACEC, and the Red Mountain subregion. The approved network also included the opening of a 9-mile undesignated route east of Haiwee Reservoir, and establishment of competitive "C" routes northeast of the Spangler Hills Open Area.
- Decision 10: The Stopping, Parking, and Camping Section of the CDCA Plan Motorized Vehicle Access Element was modified to incorporate restrictions within DWMAs, including limiting camping to previously existing disturbed camping areas adjacent to open routes and limiting stopping and parking to within 50 feet of the centerline of open routes.
- Decision 11: The portion of the Barstow to Vegas Race Course within the WEMO Planning area was deleted.
- Decision 12: The use of the Stoddard Valley to Johnson Valley Connector was modified to establish a connector route, and to delete its availability for competitive speed events.

In addition to decisions that were proposed in the 2005 EIS, the 2006 ROD made modifications as a result of resolution of protests. These modifications included specific changes to route designations in the Red Mountain, Ord, Newberry-Rodman, Fremont, and Juniper Subregions, and in Stoddard Valley. The specific routes designations are listed in the 2006 ROD.

The 2006 WEMO ROD also continued the administrative closure affecting 26 miles of selected dirt roads in a 17,000-acre area of the Rand Mountains, in order to allow time to complete work necessary to implement an educational program and permit system for recreational users.

The following seven management prescriptions for motorized vehicles (designated as "MVs" in the FEIS) were proposed as take avoidance measures:

- Open Routes (MV-1): Routes designated open would be available for a variety of uses including commercial, recreational, casual access, and non-competitive permitted uses. No motorized vehicles would be allowed to travel off of designated routes, except in emergency situations, or with the explicit permission of the BLM, or as specifically noted below.
- Speed Limits (MV-2): With respect to speed limits on unimproved roads, current law would apply. Basic Speed Law (38305) of the 2001 Vehicle Code, Traffic Laws states: "no

person would drive an off-highway motor vehicle at a speed limit greater than is reasonable or prudent and in no event at a speed which endangers the safety of other persons and property."

- Speed Regulators (MV-3): Within DWMAs, there is no proposal to install speed regulators; however, if monitoring or studies show that certain unimproved roads are causing increased tortoise mortality, the BLM will consider ways, including speed regulators, to reduce or avoid that mortality.
- Washes (MV-4): On public lands, motorized vehicle travel in washes would be allowed only in those washes that are designated as "open routes" and signed as appropriate.

Livestock Grazing Decisions in 2006 WEMO Plan and 2016 DRECP LUPA

The 2006 WEMO Plan Public Land Livestock Grazing Program contained a total of 29 management prescriptions (LG). Key additions to the CDCA Plan Livestock Grazing Objectives made in the 2006 WEMO Plan that are not proposed for change are listed below. The adoption of regional standards and guidelines are dependent upon approval by the Secretary of the Interior.

1. Adopt and Implement Regional Standards of Rangeland Health and Guidelines for Grazing Management in the West Mojave Planning area, consistent with 43 CFR 4180 et seq., and Conform Grazing Activities to the Standards.
2. Discontinue livestock grazing in DWMA allotments that are voluntarily relinquished and reallocate all of the AUMs from livestock forage to wildlife use and ecosystem functions, upon compliance with the terms identified in the land use plan. Voluntarily relinquished allotments would be unavailable for grazing.
3. Further limit livestock grazing in DWMAs and other sensitive areas within the WEMO Planning area. Specific elements of this objective include elimination of ephemeral cattle grazing, substantial limitation of sheep grazing within DWMAs and other sensitive areas (see pages 2-131-133 of the 2005 WEMO FEIS), elimination of ephemeral and temporary non-renewable (TNR) permit authorizations for cattle allotments within DWMAs, and increasing ephemeral forage production requirements before livestock turnout in other desert tortoise habitat. Livestock grazing would continue on the Valley Well Allotment.

The WEMO 2006 ROD incorporates the terms and conditions of the Biological Opinion (BO) issued on January 9, 2006 by the U.S. Fish and Wildlife Service (USFWS) and amended by the USFWS on November 30, 2007 to minimize impacts from the livestock grazing program.

The 2016 DRECP LUPA terminated and reallocated forage from livestock grazing to wildlife use and ecosystem function on 16 vacant grazing allotments. The DRECP 2016 ROD allowed for continued livestock grazing on active allotments in DRECP Eco-Regions. The management action(s) concerning the continuation of livestock grazing in those Eco-Regions state the following: Existing allotments are authorized but do not authorize new allotments or expansion of existing allotments (either in size or increase in number of AUMs), if willing relinquishments, would be made unavailable.

3.1.1.4 Post WEMO Changes to Vehicle Access Management

In August 2006, a lawsuit was filed challenging the route designation process used in the 2006 WEMO Plan and the route designations resulting from the analysis of impacts in the 2006 WEMO Plan. The court issued a Summary Judgment order on September 28, 2009, and a Remedy Order on January 28, 2011. The Remedy Order remanded the 2006 WEMO ROD to the BLM and directed the BLM to amend the CDCA Plan and reconsider route designation throughout the WEMO Planning area, among other things.

The specific issues related to route designation that were remanded for re-evaluation are as follows:

- Sufficiency of the No Action Alternative: According to the Court's Summary Judgment order, the 2005 EIS did not sufficiently explain that the routes contained in the No Action Alternative (inclusive of post-1980 routes), was larger than both the 1980 and 1985-1987/ACEC networks, and was smaller than the 2001-2002 inventoried network. In addition, the discussions of the No Action network throughout the EIS were not consistent. Some specific examples were raised, including Table 3-58 and Table 4-45. 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 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.
- Inclusion of post-1980 routes in alternatives: In its discussion of "limited" areas, the CDCA Plan states that ". . . use will be restricted to existing routes of travel." The Court noted that this statement is problematic in that BLM did not have an inventory of the routes that existed in 1980. The Court interpreted this language to prohibit the designation of any routes as "open" or "limited" that did not exist before 1980. The Summary Judgment order does state 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 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.
- Criteria Used for Route Designations: The Court ruled that the BLM's rationale for making their route designations was not complete, and did not address the requirements of 43 CFR 8342.1. The Court also cited specific resources (soils, cultural resources, Unusual Plant Assemblages and riparian areas, Mojave fringe-toed lizard, and air quality) for which analyses were not complete, and needed to be re-visited.
- Reasonable Range of Alternatives: The Court ruled that the 2005 WEMO FEIS's inclusion of the same route network in each of the evaluated HCP alternatives violated NEPA.

These decisions of the Court provide an additional framework in which the current effort to establish a route network must be developed.

Also, the Court left the following specific issues related to travel management, the route network and livestock grazing in place during remand:

- Provisions allowing for grazing allotments to be voluntarily relinquished, certain areas to be designated as not available for grazing, and any subsequent decisions to relinquish or retire grazing allotments;
- The restrictions on motorized vehicle stopping, parking, and vehicular camping;
- The deletion of the portion of the Barstow to Vegas Race Course within the WEMO Planning area;
- All routes that were closed in the ROD remain closed;
- The policy that all routes should be considered closed unless signed "open;"
- Allowable use of OHVs on the route network that are not "street legal;" and
- Route designations made in the Juniper Flats, Wonder Valley, and Edwards Bowl areas.

Specific route network-related issues that were vacated by the Court include:

- Adoption of the route network in the Rand Mountain-Fremont Valley Management Plan;
- Adoption of the route network in the Afton Canyon Natural Area; and
- Establishment of a connector route in the Stoddard Valley to Johnson Valley Corridor.

As specific mitigation measures ordered to be implemented during remand, BLM was required to do the following:

- Provide the Court with a detailed Implementation Plan;
- Update all BLM-produced and available maps to include accurate and up-to-date route information, including a statement regarding restriction of motorized use to "open" routes only;
- Provide the Court with a monitoring plan to determine compliance with route closures and whether new illegal routes were being created;
- Perform additional monitoring regarding air quality, Mojave fringe-toed lizard and its habitat, and riparian areas and Unique Plant Assemblages;
- Provide a plan for maintenance of the open route network;
- Provide a plan for additional enforcement capability; and
- Provide quarterly progress reports.

3.1.1.5 Other Recent Policy and Planning-Related Post 2006 WEMO Developments

Since the 2006 WEMO ROD, the public lands included within the planning area have been subject to additional BLM planning efforts and CDCA Plan amendments. These amendments to the CDCA Plan are now status quo, or the baseline for consideration of plan requirements. In addition, post-WEMO implementation activities have been undertaken. Major efforts are summarized as follows:

- BLM has completed renewal evaluations, including Environmental Assessments (EAs) and rangeland health assessments, for 28 grazing allotments within the planning area since

2006. Also, several allotments have been voluntarily relinquished since the 2006 WEMO Plan was completed. The EAs all evaluated route designation and OHV use within each allotment as part of their cumulative analysis. Also, several of the EAs specified that the allotments had been modified and, in some cases, voluntarily relinquished, as part of the 2006 WEMO Plan. The specific information related to the allotments is presented in Section 3.7 of this Draft SEIS.

- In 2012, Congress passed and the President signed the 2012 Appropriations Act (Public Law 112-74, 125 Stat. 1048, Dec 23, 2011). This Act provided that the Secretary of the Interior "shall accept the donation of any valid existing permits or leases authorizing grazing on public lands within the California Desert Conservation Area. With respect to each permit or lease donated under this paragraph, the Secretary shall terminate the grazing permit or lease, ensure a permanent end (except as provided in paragraph (2)), to grazing on the land covered by the permit or lease, and make the land available for mitigation by allocation the forage to wildlife use consistent with any applicable Habitat Conservation Plan, section 10(a)(1)(B) permit or section 7 consultation under the Endangered Species Act of 1973". Under this authority, two allotments have been donated within the WEMO Planning area—Lava Mountain and Walker Pass Common Allotments. Consistent with the 2012 Appropriations Act, the permanent relinquishment of these two allotments has been accepted, grazing allotment boundaries were updated, and AUMs were reallocated from livestock forage to wildlife use and ecosystem functions.
- Activity-specific route designations: BLM land throughout the WEMO Planning area continues to be available for, and subject to, permit and ROW applications for a variety of activities, as are allowable under BLM regulations and the CDCA Plan. These applications include solar, wind, and energy transmission projects; installation and operation of communications towers and pipelines; access to mining operations and exploratory activities, and permitted recreation events. Most projects require access for project construction and operation, and this access often needs to be provided in whole or in part, through construction and authorization of new routes.
- In July 2012, BLM and the Department of Energy (DOE) published the Final Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States, which included consideration of the WEMO Planning area in California. The PEIS ROD designated lands within the WEMO Planning Area as either exclusions areas or variance areas. Exclusion areas are unavailable for utility-scale solar energy development. The BLM considers any application for utility-scale solar energy development within variance areas after following a process outlined in the PEIS ROD. The PEIS considered the potential impact of solar development on the National Historic Trail System, and on routes of travel. The PEIS noted that solar development may require closure of designated OHV routes. In response to these impacts, the PEIS proposed design features to mitigate impacts, including rerouting roads around solar developments, and considering replacement of acreage for lost recreational opportunities.
- The 2016 DRECP LUPA was developed as an interagency plan by the BLM, the U.S. Fish and Wildlife Service (USFWS), the California Energy Commission (CEC), and the California Department of Fish and Wildlife (CDFW, collectively known as the Renewable Energy Action Team (REAT or REAT Agencies) to (1) advance federal and state natural resource conservation goals and other federal land management goals; (2) meet the

requirements of the federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and Federal Land Policy and Management Act (FLPMA); and (3) facilitate the timely and streamlined permitting of renewable energy projects, all in the Mojave and Colorado/Sonoran desert regions of Southern California. BLM has approved the public land component of the Interagency DRECP LUPA as a federal land use plan amendment to the CDCA Plan.

- With respect to the BLM, and the Department of the Interior as a whole, Secretarial Order 3347 (signed March 2, 2017) requires each bureau and office of the DOI to work with the Wildlife and Hunting Heritage Conservation Council (WHHCC) and Sport Fishing and Boating Partnership Council (SFBPC) to:

  (1) Identify specific actions to expand access significantly for recreational hunting and fishing on public lands as may be appropriate.

  (2) Identify specific actions to improve recreational hunting and fishing cooperation, consultation, and communication with state wildlife managers.

  (3) Identify specific actions to improve habitat for fish and wildlife.

  (4) Identify specific actions to manage predators effectively and efficiently.

  (5) Encourage, promote, and facilitate greater public access to all Department lands consistent with applicable laws.

3.1.2 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 West Mojave Route Network Project (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.

3.1.2.1 Resources

Resource considerations in the WEMO Planning area have been, and continue to be, considered in the development of the transportation network, travel management policies, and the management of livestock grazing in the following ways:

- NEPA analysis and carrying capacities identified in the CDCA Plan;

- Broad-scoped, region-wide amendments to conserve plant and animal species and their habitats and to prevent future listings, including establishment of DWMAs and ACECs;
- Broad-scoped, region-wide analysis of the transportation network; and
- NEPA analysis of route-specific proposals associated with applications for land uses.
- Grazing prescriptions contained in the 2005 WEMO FEIS.
- Rangeland Health Assessments and allotment specific EAs.

Section 3.1.1.2 above discusses the original CDCA Plan, and subsequent amendments, which established OHV Open Areas, route designations, an implementation framework Motorized Vehicle Access Objectives and the management of livestock grazing. Each of these was considered within the overall framework of the CDCA Plan Goals, which were to provide for the use of the public lands and resources of the CDCA in a manner which enhances wherever possible, and does not diminish, on balance, the environmental, cultural, and aesthetic values of the desert and its productivity.

The CDCA Plan has undergone three regional amendments to protect biological resources, including the Northern and Eastern Mojave (NEMO) amendment of 2002, Northern and Eastern Colorado (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, including the WEMO Plan, have been used as mechanisms to establish DT ACECs, ACECs, 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 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.

Also discussed in Section 3.1.1.2 above, 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.

3.1.2.2 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 the 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 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.

3.1.2.3 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 motorized vehicle access 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 WEMO planning area. Motor vehicles are a leading source of air pollution and greenhouse gases (GHGs) globally. Other mobile sources of air pollution in the WEMO planning area include operational construction equipment, trains, and aircraft. Stationary sources such as gasoline stations, power plants, dry cleaners, and other commercial and industrial facilities also contribute to air pollution. Natural sources of air pollutants are also found in the WEMO planning area, for example, in the Coso Hot Springs Known Geothermal Resource Area in southern Inyo County.

3.2.1 Air Quality Regulatory Framework

The following regulatory framework identifies the federal and state agencies in charge of monitoring and controlling mobile and stationary sources of air pollutants and describes measures taken to achieve and maintain healthful air quality in the WEMO planning area.

Emissions limitations are imposed upon sources of air pollutants by rules and regulations promulgated by the federal, state or local agencies. Mobile sources of air pollutants and exhaust from off-road equipment are managed by federal and state agencies through emission performance standards and fuel formulations requirements. Portable sources and temporary activities that cause emissions of air contaminants are also managed through federal, state and local programs. This section summarizes the applicable regulations related to the Proposed Project.

3.2.1.1 Federal Regulation and Oversight

The Environmental Protection Agency (EPA) implements and enforces the requirements of most federal environmental laws. EPA Region 9 administers federal air programs in California. The Clean Air Act (CAA), most recently amended in 1990, provides EPA with the legal authority to regulate air pollution from stationary and mobile sources. The EPA has authority over conformity issues in areas that do not meet federal air quality standards, and federal land managers have review authority over new projects that may affect federal Class I areas as defined in 40 CFR 51.166. This authority has been delegated to the California Air Resources Board (CARB), and further delegated to Air Quality Management Districts (AQMDs) established throughout the State. Federal land management agencies also have a responsibility in conformity issues for activities and projects they authorize in conjunction with the Air Quality Management Districts.

Federal Clean Air Act

The federal Clean Air Act, enacted in 1970 and amended in 1977 and 1990 (42 United States Code [U.S.C.] 7401 et seq.), protects and enhances the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, the EPA developed National Ambient Air Quality Standards (NAAQS) to achieve the mandates of Section 109 of the Clean Air Act (42 U.S.C. 7409). NAAQS cover seven "criteria" pollutants of national concern.

Each NAAQS has two parts. A primary standard intended to provide an adequate margin of safety required to protect health in consideration of long-term exposure for sensitive groups in the general population such as children, senior citizens, and people with breathing difficulties. A secondary standard for each criteria pollutant is intended to "protect the public welfare from any known or

anticipated adverse effects associated with the presence of such air pollutant in the ambient air" (42 U.S.C. 7409[b] [2]). A discussion of each of the criteria pollutants follows in Section 3.2.2.

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 State Implementation Plan (SIP). General Conformity regulations apply only to direct and/or indirect emissions caused by federal agency actions that occur in areas designated as non-attainment or maintenance areas with respect to the NAAQS. 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.

Prevention of Significant Deterioration

The CAA Section 162(s) has further defined areas where air quality already attains the NAAQS or where air quality for the NAAQS remains unclassified as to attainment. Three classes of air quality have specific goals. The management goal for Federal Class I areas is pristine air quality. Requirements for additional limits above NAAQS, specifically for emissions of particulate matter and SO2, are greatest for Class I Areas where the management goal is pristine air quality. Most other areas already in attainment of NAAQS are Class II areas where the air quality goal is no significant deterioration of current air quality. BLM lands attaining NAAQS are Class II lands. Class III status applies to areas where people wish to develop the area within the constraints of the Federal Clean Air Act and to protect air quality violations (non-attainment) of NAAQS.

Mandatory Class I federal lands include those lands that as of the date of enactment of the Clean Air Act Amendments of 1977 were:

- International parks.
- National wilderness areas larger than 5,000 acres.
- National memorial parks larger than 5,000 acres.
- National parks larger than 6,000 acres.

These lands may not be redesignated as Class II or Class III areas. The WEMO planning area includes a portion of Joshua Tree National Park as the single original Class I area.

The BLM wilderness areas and national monuments within the WEMO planning area did not exist in 1977. The Clean Air Act provides (Section 163(4)), however, that additional acreages added to Class I wilderness areas after enactment of the Clear Air Act Amendments of 1977, also receive Class I designation. A singular exception for Class I air quality status on BLM lands in the WEMO planning area comprises the BLM lands added in 1994 to the San Gorgonio Wilderness, which itself was established as US Forest Service Wilderness in 1964.

All other air quality jurisdictions not qualifying as Class I areas were originally designated as Class II areas in 1977. BLM public lands usually fall under Class II status in California. Class II areas are also subject to maximum limits on air quality degradation called air quality increments (often referred to as PSD increments). These air quality increments are more stringent than NAAQS.

If desired by local constituents, a Class II area may be redesignated to a Class III area. In Class III attainment areas, air quality may be degraded to levels no less than the NAAQS.

For Federal lands with special designations that were established since 1977, CAA Section 164 delegates to the State of California the authority to designate Federal lands in NAAQS attainment or unclassified status as new Class I areas. Requirements for redesignation to Class I areas are:

1. A national monument, a national primitive area, a national preserve, a national recreation area, a national wild and scenic river, a national wildlife refuge, a national lakeshore or seashore which exceeds 10,000 acres; and
2. A national park or national wilderness area which exceeds 10,000 acres.

Federal land managers have authority to review new projects with stationary sources of new or expanded pollutant emissions from facilities that would affect Federal Class I areas.

3.2.1.2 State Regulation

California Health and Safety Code § 41700

The Health and Safety Code prohibits the discharge of air pollutants that cause injury, detriment, nuisance or annoyance to the public. The air quality management districts implement this requirement through their local rules.

California Clean Air Act, California Health and Safety Code § 42300 et seq.

The California CAA of 1988 provides for air quality planning and regulation beyond and independent of federal regulations. The California Air Resources Board (CARB) is the state's lead air quality agency and adopts standards for the CAAQS, some of which are more stringent than the NAAQS. CARB is responsible for the attainment and maintenance of NAAQS and CAAQS, oversees the operation of local air quality districts, and is responsible for motor vehicle air pollution control. CARB also assists the individual air districts with air quality monitoring as well as planning activities such as performing air pollutant emission inventories and air quality modeling.

Air Basins Overlapping the WEMO Planning Area

Air basins consist principally of adjacent areas with similar geographical and meteorological features, but political boundaries may also determine air basin boundaries. Usually air pollution can move freely within an air basin, but pollution can also sometimes move from one basin to another. The WEMO Planning area falls within portions of three of California's 15 air basins (see Figure 3.2-1). The Great Basin Valleys Air Basin includes all of Inyo and Mono Counties. The Mojave Desert Air Basin includes the Mojave Desert portions of Kern, Los Angeles, San Bernardino Counties in the WEMO planning area. The Salton Sea Air Basin includes the section of the northern Coachella Valley in the small Riverside County portion of the planning area.

Air Quality Management Districts Overlapping the WEMO Planning Area

The State of California has further subdivided these air basins into planning areas based upon various emission problems or watershed boundaries.

The WEMO planning area falls within five different regional air districts (see Figure 3.2-2):

- Antelope Valley Air Quality Management District (AVAQMD) covers the Antelope Valley portion of Los Angeles County that comprises part of the Mojave Desert Air Basin.
- East Kern Air Pollution Control District (EKAPCD) encompasses the Mojave Desert portion of Kern County within the Mojave Desert Air Basin.
- Great Basin Unified Air Pollution Control District (GBUAPCD) partially includes the Inyo County portions of the Great Basin Valleys Air Basin.
- Mojave Desert Air Quality Management District (MDAQMD) consists of the Mojave Desert portions of San Bernardino County.
- South Coast Air Quality Management District (SCAQMD) includes a part of the Salton Sea Air Basin in the northernmost Coachella Valley, Riverside County.

CARB Special Programs for Reducing Emissions from Off-Highway Recreational Vehicles

The California Clean Air Act mandates that CARB achieves the maximum feasible emission reductions from all off-road mobile sources as part of attainment of the CAAQS. Off-road mobile sources regulations target construction equipment as a major source targeted for reductions to achieve hydrocarbons, nitrogen oxides (NOx), carbon monoxide (CO), and $PM_{2.5}$ exhaust standards. In addition, CARB implements control measures to reduce diesel particulate matter emissions ($PM_{2.5}$) as well as NOx from existing off-road diesel equipment, fleet emission targets for new vehicles, and specific limits on emissions from classes of vehicles, including red-sticker and green-sticker off-road vehicles.

The California Department of Motor Vehicles has designated off-highway vehicles from 2003 or newer model years that do meet CARB emissions standards (Tables 3.2-1 and 3.2-2 below) as non-complying “red-sticker” vehicles. CARB permits red-sticker vehicles to operate at certain BLM OHV facilities during specified times of year. Within the WEMO planning area, red-sticker vehicles and engines that do not meet CARB OHV emissions standards may operate only at BLM OHV Open Riding Areas at certain seasons as follows: Olancha Dunes, all-year; Dove Springs, Jawbone Canyon, Johnson Valley, Rasor, Spangler Hills, Stoddard Valley, September 1 to May 31; and El Mirage, October 1 to 30 April. They may not operate on BLM-designated OHV routes.

All other off-highway vehicles that meet ARB standards are allowed on all BLM OHV open areas and all BLM-designated routes fall under the category “green-sticker” vehicles. All pre-2003 model year and all compliant 2003 or newer model year vehicles qualify as green-sticker vehicles. These vehicles may operate at all BLM OHV open riding areas on all BLM-designated OHV routes.

CARB began rulemaking to control emissions for off-highway recreational vehicles in 1994 with California Regulations for New 1995 or Later Off-Highway Recreational Vehicles and Engines under 25 horsepower. Tables 3.2-1 and 3.2-2 summarize current regulations on exhaust emissions

and evaporative emissions from off-highway recreational vehicles, with specific reference to spatial and temporal limits for non-conforming vehicles on BLM public lands.

Off-highway recreational vehicles (OHRVs) constitute a single regulatory category that includes motorcycles (OMCs), all-terrain vehicles (ATVs), off-road sport vehicles, off-road utility vehicles, sand cars, and golf carts, as defined in Cal. Code Regs., tit. 13,§ 2411(a). CARB has developed a regulation to control evaporative emissions from gasoline-powered OHRVs in order to satisfy the 2007 State Implementation Plan (SIP) commitment to reduce ROG emissions from OHRVs.

Table 3.2-1. CARB Exhaust Emission Standards Based on Chassis Testing for Off-Road Recreational Vehicles

Chassis-Based Testing				
Vehicle and Model Year	**Hydrocarbons g/km**	**Nitrogen Oxides (NO_x) g/km**	**Carbon Monoxide (CO) g/km**	**Particulate Matter g/km**
Off-Road Motorcycles and ATVs with Engines > 90 cc(1) 1997 and later	1.2	na	15.0	na
Off-Road Motorcycles and ATVs with Engines ≤ 90 cc, 1999 and later	1.2	na	15.0	na
Off-Road Sport Vehicles and Off-Road Utility Vehicles, 2007 and later	1.2	na	15.0	na
Sand Car, 2007 and later	1.2	na	15.0	na
Optional Engine-Based Testing				
Vehicle and Model Year	**Hydrocarbons + NO_x g/kW/hr**		**Carbon Monoxide (CO) g/kW/hr**	**Particulate Matter g/kW/hr(2)**
ATVs with engines < 225 cc, 1997 and later	16.1		400	na
ATVs with engines ≥ 225 cc 1997 and later	13.4		400	na
Off-Road Sport Vehicles and Off-Road Utility Vehicles, 2007 and later	12.0		400	na
Sand Car, 2007 and later	13.4		400	na

Sources:

Amendments to the California Regulations for New 1977 and Later Off Highway Recreation Vehicles and Engines, effective August 15, 2007: https://www.arb.ca.gov/regact/ohrv2006/ohrv2006.htm

Final Regulation Order for Off-Highway Recreation Vehicles" Evaporative Emission Control, effective April 1, 2015: https://www.arb.ca.gov/regact/2013/ohrv2013/ohrvoalfinalfroresub.pdf

cc=cubic centimeter g/kW/hr = grams per kilowatt hour

Table 3.2-2. Evaporative Emissions

Vehicle and Model Year	**Emissions Component**	**Permeation Standard $g/m^2/day$**	**Test Temperature**
All OHRVs, 2008 and later	Fuel Tank Permeation	1.5	28 °C (82 °F)
	Hose Permeation	15.0	23 °C (73 °F)
All OHRVs, 2018 and later	Fuel Tank Permeation	1.5	28 °C (82 °F)

Table 3.2-2. Evaporative Emissions

Vehicle and Model Year	Emissions Component	Permeation Standard $g/m^2/day$	Test Temperature
(75% compliance 2018 – 2021)	Hose Permeation	5.0	35 °C (95 °F)

$g/m^2/day$ = grams per meter squared per day

Vehicles certified solely with compression-ignition engines are excepted.

Fuel injection is required for all 2018 and later models.

3.2.2 National and California Air Quality Standards

The CAA and the California Clean Air Act contain the primary provisions relating to air quality. Among the most important provisions are the sections relating to the establishment of the National and State Ambient Air Quality Standards, non-attainment areas, the development of state implementation plans (SIP), prevention of significant deterioration (PSD), air toxics and federal general conformity. The EPA and the California Air Resources Control Board have issued rules to implement the federal and California Clean Air Acts.

The federal and state Clean Air Acts regulate certain forms of pollution under three main categories. These are criteria pollutants, air toxics, and global warming and ozone-depleting gases. There is also regulation of a more general category of emissions that reduce visibility. These come under the titles of regional haze, prevention of significant deterioration (PSD), and visibility reducing particulates (VRP).

The definitions used in determining whether or not an area meets air quality standards are found in the federal and state Clean Air Acts and their associated ambient air quality standards. Criteria pollutants are defined as those pollutants for which the federal and state government have established ambient air quality standards, or criteria, for concentrations in order to protect public health. Under the federal Clean Air Act, the EPA has established National Ambient Air Quality Standards (NAAQS) for seven criteria pollutants (ozone, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide, nitrogen dioxide, lead and sulfur dioxide). These pollutants are described below.

Ozone (O_3)

Ozone is a critical air pollutant in California. The entire WEMO Planning area is designated as non-attainment for the California ozone standard. Nitrogen oxides and hydrocarbons (reactive organic gases) are the chief precursors of ozone. These gases react in the presence of sunlight, especially ultraviolet light, to produce ozone. Because sunlight plays an important role in ozone formation, ozone pollution is mainly a concern during the daytime in the summer months.

Not all ozone within the DRECP area originates from local sources. Under certain meteorological conditions, ozone travels with other pollutants from upwind air basins and adds to the amount of ozone from local emission sources, raising ozone levels in the area. Local air pollution agencies cannot control either the source or the transportation of pollutants from air basins that are outside their local area and jurisdiction. Therefore, the general policy of the local air districts is to control local sources effectively enough to reduce locally produced contamination.

Several studies (Burley et al. 2014, Van Curen 2015) have looked at the ozone pollution problem in the desert areas. The studies show that the peak ozone levels do not correspond to the peak temperatures and ultraviolet (UV) levels, but are occurring much later in the day indicating that the ozone is being formed upwind and is being transported into the area from its sources by the prevailing winds. The South Coast Air Basin and the San Joaquin Valley Air Basin to the west of the WEMO planning area remain both federal non-attainment areas for ozone and are major sources of the wind-transported ozone pollution into the Mojave Desert.

Areas heavily impacted by ozone transport in the WEMO planning area include the Victorville-Barstow area, the Antelope Valley, and western Joshua Tree National Park. The numbers of violations of the NAAQS for ozone have declined, but violations still occur, despite rules establishing controls for ozone and for ozone precursor emissions.

PM_{10}

PM_{10} consists of coarse plus fine inhalable particulate matter with an aerodynamic diameter of 10 µm (microns) or less, equivalent to about one-seventh of the diameter of a human hair. Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Under typical conditions (apart from wildfires) particles classified as PM_{10} are mainly emitted directly from soil-disturbing activities including travel on roads, construction, mining, and agricultural operations. Other sources of include windblown dust, salts, brake dust, and tire wear.

$PM_{2.5}$

$PM_{2.5}$ is a subset of PM_{10} made up of fine inhalable particles with aerodynamic diameters of 2.5 µm (microns) or less. These particles create air quality concerns that require regular monitoring. Fine particles can be emitted directly from wildfires or fossil fuel combustion, or formed from chemical reactions in the atmosphere. Human sources for these chemicals come from a variety of sources including cars, trucks, buses, construction equipment, industrial facilities, and power plants.

Carbon Monoxide (CO)

CO is primarily a byproduct of incomplete combustion of fossil fuels and is emitted as part of motor vehicle exhaust, which contributes more than two-thirds of all CO emissions nationwide. Vehicle exhaust can contribute as much as 95 percent of all CO emissions locally in areas with heavy traffic combustion. CO concentrations decrease rapidly with distance from the source. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas outside the WEMO planning area still experience high levels of CO. The lungs readily absorb CO leading to multiple adverse human impacts, particularly decreases in the ability of blood to transport oxygen and health risks for unborn children and people who suffer from heart and lung diseases. The symptoms of excessive exposure such as headaches, fatigue, slow reflexes, and dizziness can also afflict healthy people.

Nitrogen Dioxide (NO_2)

Nitrogen dioxide is a reddish brown, highly reactive gas in ambient air formed through the oxidation of nitric oxide (NO) which is emitted from combustion sources such a motor vehicles and power plants. Home heaters and gas stoves can also produce substantial amounts of NO_2 in indoor settings. NO_2 and other highly reactive gases that contain nitrogen and oxygen (NO_x) contribute to formation of ozone, particulate matter (PM), and acid rain in the lower atmosphere. NO is oxidized by O_3 in the atmosphere to NO_2 when photochemical activity is strong enough to power the chemical reaction.

Lead

Lead is a toxic air pollutant. Elemental lead and certain compounds of lead are in air, water, soil, food, consumer products, dust, and lead-based paint. Inhalation of lead in the air can increase lead in the blood, which can in turn increase the likelihood of cancer and noncancerous health effects in both adults and children. Lead harms the nervous, reproductive, digestive, and blood-forming systems, and can harm the kidneys. Children are especially sensitive to lead in the air since they absorb lead more easily, and their developing nervous systems are susceptible to harmful lead-related impacts, including learning disabilities.

Sulfur Dioxide (SO_2)

Sulfur dioxide (SO_2) is a combustion by-product of coal, fuel oil, and diesel fuel. Only small quantities of SO_2 come from gasoline-fueled motor vehicle exhaust or from uses of natural gas. SO_2 is emitted directly into the atmosphere and can remain suspended for days, allowing for wide distribution. In terms of human health, SO_2 in the air can constrict human airways and cause breathing problems for asthmatics. Children can also contract respiratory tract infections, and, even healthy people may experience sore throats, coughing, and breathing difficulties. Long-term exposure to SO_2 increases risk of death from respiratory or cardiovascular diseases.

Due to the restrictions on use of sulfur-rich fuels, reduction in gasoline and diesel sulfur contents, and reduction in SO_2 emissions from other industrial sources such as oil refineries, SO_2 pollution is no longer a major air quality concern in most of California including the WEMO planning area.

Additional Pollutants from the California Air Resources Board

CARB determines the classification of standards for criteria pollutants in local areas for these nationally selected criteria pollutants with four additional pollutants not considered nationally. are used to classify all areas as to whether they are in attainment, in non-attainment or are unclassified for any of the NAAQS. California has established California Ambient Air Quality Standards for the same federal criteria pollutants plus an additional four pollutants (visibility reducing particulates, sulfates, hydrogen sulfide, and vinyl chloride).

Hydrogen Sulfide (H_2S)

Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. H_2S emissions usually originate from oil and natural gas extraction and processing. Natural emissions come from geothermal fields. Bacterial decomposition of human and animal wastes, sewage treatment facilities, and landfills generate emissions. Industrial sources include petrochemical plants, coke

oven plants, and paper mills. The air quality standard in force corresponds to the lower end of the average human detection threshold for H_2S odor at 0.03 ppm. Apart from aesthetic unpleasantness, health effects have only been reported with exposures greater than 50 ppm (eye irritation). Exposure to even higher levels of H_2S (over 300 ppm) in occupational or industrial accident situations can induce serious adverse health effects. H_2S is regulated as a nuisance based on its odor detection level. If the standard were based solely on adverse health effects, it would be set at a much higher level.

Sulfates

Sulfates are chemicals that contain the fully oxidized ionic form of sulfur (SO_4^{2-}), in combination with metal and/or hydrogen ions. In California, emissions of sulfur-containing compounds occur primarily from the combustion of sulfur-containing petroleum-derived fuels (e.g., gasoline and diesel fuel). A small amount of sulfate is directly emitted from combustion of sulfur-containing fuels, but most ambient sulfate is formed in the atmosphere. First, emitted sulfur in the fuel is oxidized to sulfur dioxide (SO_2) during the combustion process and is subsequently converted to sulfate particulate matter through chemical reactions in the atmosphere. Thus, sulfates are a sub-fraction of ambient $PM_{2.5}$. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California.

Atmospheric transport of sulfates to wildlands contributes to acidic deposition on surface water and soils, and contributes to acid rain, thus hindering growth of healthy vegetation. Because sulfates are light colored, they reflect energy from sunlight back into space. This means that sulfates have a cooling influence on climate change. Children, asthmatics, and older adults with chronic heart or lung disease are most vulnerable to sulfate air pollution.

Vinyl Chloride

Vinyl chloride, or chloroethene, is a colorless chlorinated hydrocarbon gas having a mild, sweet odor. Most vinyl chloride is the source material for manufacturing polyvinyl chloride (PVC) plastic and vinyl products. It is emitted from industrial processes. Vinyl chloride has been detected near landfills, sewage treatment plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents, although levels above the standard have not been measured in California since the 1970's. Current concern for vinyl chloride exposure primarily refers to occupational and industrial environments. Vinyl chloride is a toxic air contaminant because of its ability to cause human cancers.

Visibility Reducing Particles

Haze, consisting of airborne particulate matter, decreases visibility and can degrade the aesthetic quality of scenic desert landscapes. These particles vary greatly in shape, size and chemical composition, and come from a variety of natural and man-made sources. Some haze-causing particles are directly emitted to the air such as windblown dust and soot. Others are formed in the air from the chemical transformation of gaseous pollutants (e.g., sulfates, nitrates, organic carbon particles) which are the major constituents of fine PM. These fine particles, caused largely by combustion of fuel, can travel hundreds of miles causing visibility impairment. The CAAQS for visibility reducing particles is based on the extinction coefficient of light, that is, how much particulate matter in the air diminishes transmitted light by scattering across a unit of distance.

The extinction coefficient for light in the WEMO planning area may be no more than 0.23 per kilometer, corresponding to visibility of ten miles or more.

Ambient Air Quality Standards

Ambient air quality standards are used to classify all areas as to whether they are in attainment, in non-attainment or are unclassified for any of the NAAQS. California has established California Ambient Air Quality Standards for the same federal criteria pollutants plus an additional four pollutants (visibility reducing particulates, sulfates, hydrogen sulfide, and vinyl chloride).

The Ambient Air Quality Standards for California are almost entirely stricter than the federal standards (see Table 3.2-3).

Table 3.2-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards (NAAQS)[2]	
			Primary	Secondary
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	--	--
	8-hour	0.07 ppm (137 µg/m^3)	0.075 ppm[4] (147 µg/m^3)	Same as primary
PM_{10}	24-hour	50 µg/m^3	150 µg/m^3 [5]	Same as primary
	Annual	20 µg/m^3	--	--
$PM_{2.5}$	24-hour [3]	--	35 µg/m^3 [6]	Same as primary
	Annual	12 µg/m^3	12 µg/m^3 [7]	Same as primary
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	--
	1-hour	20 ppm (23 µg/m^3)	35 ppm (40 mg/m^3)	--
Nitrogen Dioxide (NO_2)	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm[9] (100 µg/m^3)	Same as primary
	1-hour	0.18 ppm (339 µg/m^3)	0.10 ppm[10] (188 µg/m^3)	Same as primary
Sulfur Dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)[10]	--
	3-hour	--	--	0.50 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)[11]	--
Lead	30-Day	1.5 µg/m^3	--	--
	Quarterly	---	1.5 µg/m^3 (for certain areas)[12]	Same as primary
	3-Month	---	0.15 µg/m^3 [12]	Same as primary
Sulfates	24-hour	25 µg/m^3	--	--
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m^3)	--	--
Visibility Reducing Particles (VRP)	8-hour	See Note 13	--	--
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	--	--

Table 3.2-3. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards (NAAQS)[2]	
			Primary	Secondary

Sources: CARB 2012a, CARB 2012b
Notes:
ppm = parts per million
ppb = parts per billion
$\mu g/m^3$ = micrograms per cubic meter
PM_{10} = Particulate matter less than 10 microns
$PM_{2.5}$ = Particulate matter less than 2.5 microns

(1) Standards for ozone, CO, SO_2 (1 and 24 hour), NO_2, PM_{10}, PM $_{2.5}$, and VRP are values that are not to be exceeded. All others are not to be equaled or exceeded.
(2) Short-term standards (averaging times of 24 hours or less) for CO and SO_2 are not to be exceeded more than once per year.
(3) Standard attained when expected number of days/year with maximum hourly average concentration above standard is equal to or less than one.
(4) Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
(5) Not to be exceeded more than once per year on average over 3 years.
(6) 98th percentile, averaged over 3 years.
(7) Annual mean, averaged over 3 years.
(8) 3-year average of weighted annual mean concentrations.
(9) Annual Mean.
(10) Based on the 3-year average of the 99th percentile of the yearly distribution of 1-hour daily maximum concentrations.
(11) The 3-year average of the 99th percentile of the daily maximum 1-hour average must not exceed 75 ppb.
(12) Standard is based on rolling 3-month average.
(13) Extinction coefficient of 0.23 per kilometer --- visibility of 10 miles or more due to particles when relative humidity is less than 70 percent

Table 3.2-4. Maximum Allowable Increase of Particulate Matter and SO_2 in NAAQS Attainment Areas

Pollutant	Averaging Time	Class I	Class 2	Class 3
Particulate Matter	24-hour maximum	10 $\mu g/m^3$	37 $\mu g/m^3$	37 $\mu g/m^3$
	Annual Geometric Mean	5 $\mu g/m^3$	19 $\mu g/m^3$	26 $\mu g/m^3$
Sulfur Dioxide (SO2)	3-hour maximum	25 $\mu g/m^3$	512 $\mu g/m^3$	700 $\mu g/m^3$
	24-hour maximum	5 $\mu g/m^3$	91 $\mu g/m^3$	182 $\mu g/m^3$
	Annual Arithmetic Mean	2 $\mu g/m^3$	20 $\mu g/m^3$	40 $\mu g/m^3$

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

3.2.3 Existing Air Quality

Very often air quality in the WEMO planning area is good. At times, however, air quality planning areas have not met air quality standards due to locally generated pollutants and/or pollutants transported from the South Coast Air Basin and the San Joaquin Valley Air Basin.

Fugitive dust is the most pervasive air pollutant in the WEMO planning area, comprising the two criteria pollutants PM_{10} and, to a lesser degree, $PM_{2.5}$ components. Frequent high winds aggravate fugitive dust pollution in the desert. Prolonged dry conditions and fires can intensify fugitive dust pollution and substantially reduce visibility.

Air quality degradation and ambient air quality standard exceedances in the planning area have been episodic in nature. High PM_{10} concentrations that violated the National Ambient Air Quality Standards peaked in the early 1990s. In recent years, good monitoring data 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 PM_{10} concentrations.

Non-Attainment Areas

Areas that are classified as non-attainment by the EPA are required to prepare and implement a State Implementation Plan (SIP) that identifies and quantifies sources of 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 3.2-5.

Air quality degradation and ambient air quality standard exceedances in the planning area have been episodic in nature. High PM_{10} concentrations that violated the National Ambient Air Quality Standards peaked in the early 1990s. In recent years, good monitoring data 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 PM_{10} concentrations. The number of violations of the NAAQS for ozone have declined, but violations have continued. Rules establishing controls for ozone precursor emissions have been implemented, but overwhelming transport of pollutants from the South Coast Air Basin and the San Joaquin Valley Air Basin continually impacts the desert.

Table 3.2-5. Attainment Status by Air Basin and Air District

Air Basin	Air Quality District	Pollutant	Planning Area Name	Federal Designation	State Designation
GBVAB	GBUAPCD	PM_{10} (federal)	Owens Valley	Severe Non-attainment	N/A
		PM_{10} (federal)	Coso Junction	Attainment	N/A
		PM_{10} (state)	GBVAB	N/A	Non-attainment
		Ozone (state)	Inyo County and Mono County	N/A	Non-attainment
		All others	GBVAB	Unclassified/ attainment	Unclassified/ Attainment
MDAB	EKAPCD	PM_{10} (federal)	Indian Wells Valley	Attainment/ Maintenance	N/A
		PM_{10} (federal)	Kern River/Cummings Valley	Serious Non-attainment	N/A

Table 3.2-5. Attainment Status by Air Basin and Air District

Air Basin	Air Quality District	Pollutant	Planning Area Name	Federal Designation	State Designation
		PM_{10} (state)	MDAB	N/A	Non-attainment
		Ozone (federal)	Eastern Kern County*	Non-attainment	N/A
		Ozone (state)	MDAB	N/A	Non-attainment
		All others	Eastern Kern County	Unclassified/ attainment	Unclassified/ Attainment
	MDAQMD	PM_{10} (federal)	Searles Valley	Moderate Non-attainment	N/A
		PM_{10} (federal)	Mojave Desert	Moderate Non-attainment	N/A
		Ozone (federal)	Mojave Desert modified	Non-attainment	N/A
		Ozone (state)	MDAB	N/A	Non-attainment
		$PM_{2.5}$ (state)	Mojave Desert modified	N/A	Non-attainment
		Hydrogen Sulfide (state)	Searles Valley	N/A	Non-attainment
		PM_{10} (state)	MDAB	N/A	Non-attainment
		All others	MDAQMD Wide	Unclassified/ attainment	Unclassified/ Attainment
	AVAQMD	Ozone (federal)	Mojave Desert modified	Non-attainment	N/A
		PM_{10} (state)	MDAB	N/A	Non-attainment
		Ozone (state)	MDAB	N/A	Non-attainment
		All Others	MDAB	Unclassified/ attainment	Attainment
SSAB	SCAQMD	PM_{10} (federal)	SSAB	Moderate Non-attainment	N/A
		Ozone (federal)	SSAB	Non-attainment	N/A
		PM_{10} (state)	SSAB	N/A	Non-attainment
		Ozone (state)	SSAB	N/A	Non-attainment

Table 3.2-5. Attainment Status by Air Basin and Air District

Air Basin	Air Quality District	Pollutant	Planning Area Name	Federal Designation	State Designation
		$PM_{2.5}$ (federal)	SSAB	Moderate Non-attainment	N/A
		$PM_{2.5}$ (state)	SSAB	N/A	Non-attainment
		NO_2 (state)	SSAB	N/A	Non-attainment
		All others	SSAB	Unclassified/ attainment	Attainment

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.

Conformity Determination

The classification of an area as a federal non-attainment 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 non-attainment areas conform to the applicable State Implementation Plan (SIP) before the action is taken.

Particulate Matter and the Planning Area

Much of the particulate matter that causes pollution in the area is generated and transported within the planning area. Relatively coarse PM_{10} particles or smaller are considered respirable particulates because they are of sufficiently small size that they can be inhaled into the nose, throat and/or lungs. PM_{10} can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Gaseous emissions of pollutants like NOx, sulfur oxides (SOx), VOCs, and ammonia, under the right meteorological conditions, can form PM in the form of nitrates (NO_3), sulfates (SO_4), and organic particles. These pollutants are known as secondary particulates, because they are not directly emitted from industrial or vehicular sources, but are formed through complex chemical reactions in the atmosphere.

Finer $PM_{2.5}$ particles pose a greater threat to health after inhalation because they tend lodge in the air sacks of the lungs. These finer particles result from combustion processes and precursor emissions (SOx, NOx, and VOCs), many of which are toxic or carcinogenic and themselves may not be locally generated. The EPA NAAQS standards for $PM_{2.5}$ emissions have become stricter because these fine particles have been implicated as an increased health risk. $PM_{2.5}$ consists mostly

of sulfates, nitrates, ammonium, elemental carbon, and a small portion of organic and inorganic compounds.

Human activities that contribute to the PM_{10} emissions include combustion sources such as stack emissions, diesel exhaust, smoke from prescribed fire and wild fire, fugitive dust sources such as construction and demolition activities, off-highway vehicle (OHV) travel and recreation, unpaved public roads and parking lots, industrial activities, large-scale concentrated livestock grazing operations and military activities. The combustion sources tend to produce smaller particulates (less than 5 microns) while fugitive sources tend to produce larger particulates (larger than 5 microns).

With respect to the federal PM_{10} standard, the WEMO Planning area now includes areas that are designated as in non-attainment, attainment, and unclassified/attainment. The portions of the planning area in the MDAQMD and SCAQMD areas are designated as non-attainment, as is Owens Valley in the GBUAPCD area. Of these non-attainment areas, EPA has classified three areas within the WEMO Planning area as formal PM_{10} planning areas. The three current federal planning areas are: the Owens Valley PM_{10} Planning Area, the Trona PM_{10} Planning Area, and the San Bernardino County PM_{10} Area. The Owens Valley planning area is one of five serious federal non-attainment PM_{10} planning areas in the nation.

The original Searles Valley PM_{10} Planning Area abutted the Owens Valley PM_{10} Planning Area on the north and included Rose Valley, Indian Wells Valley, and Searles Valley. In 2002 the EPA split the original federal non-attainment area into three separate non-attainment areas based upon county lines. These three new federal non-attainment areas are: the Coso Junction, the Indian Wells Valley, and the Trona PM_{10} non-attainment 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.

PM_{10} 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 most recent data show an estimated 0.704, 4.76 and 9.18 tons/day of PM_{10} emissions in the Coso Junction (CARB 2010), Indian Wells Valley, and Trona non-attainment areas respectively. For each area, vehicle activities on BLM lands are estimated to contribute 8 percent of the total PM_{10} emissions in the Trona non-attainment area. The primary source of BLM emissions is OHV activity and unpaved road travel in the Spangler Hills Open Area and surrounding areas. The Trona PM_{10} SIP targets the BLM emissions for a 20 percent reduction. The East Kern APCD and Mojave Desert AQMD have developed rules to implement their respective SIP obligations. Current monitoring data has not indicated any recent exceedances of the NAAQS in any of these three non-attainment areas.

The EPA classified the San Bernardino County desert area as a PM_{10} non-attainment area on January 20, 1994. The Mojave Desert AQMD prepared a "Particulate Matter PM_{10} Control Strategy Plan" and submitted it to the state for inclusion into the state SIP. The EPA disapproved the plan and returned it to the Mojave Desert AQMD for revision. 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 open areas (Stoddard Valley, Johnson Valley, Rasor, and El Mirage) are within the non-attainment area and the WEMO Planning area. The draft plan called for BLM to prepare a Dust Control Plan for

activities within the core problem portion of the non-attainment area. At the present time there is no approved SIP for the non-attainment area to guide management actions there. Currently, new rules are being drafted to come into compliance with EPA requirements. These new rules will likely require BLM to prepare dust control plans for the entire federal non-attainment area.

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 non-attainment. The air quality management district has been working directly with EPA to successfully reduce the PM_{10} concentration levels and avoid having the Antelope Valley Planning Area designated as a federal non-attainment area. Part of this effort is through the adoption and implementation of rules to control fugitive dust, which constituted a majority of the total PM_{10} emissions.

Overall, as shown in Figure 3.2-3, ambient PM_{10} values in the planning area have been steadily decreasing since 1986. This has been the direct result of federal PM_{10} planning efforts in the Owens and Searles Valley areas, as well as the reductions of local emissions from construction and demolition projects due to increased local regulation.

3.2.4 Air Quality Monitoring

WEMO Area Emissions Inventory

The 2005 WEMO Final EIS included a finding of consistency with the federal Clean Air Act (CAA). The Court's Summary Judgment order vacated this consistency determination because the analysis did not include projections of future levels of OHV use, and because the analysis did not include evaluation of emissions from OHV open areas. In the Remedy Order, BLM was required to perform additional air quality monitoring associated with emissions from OHV open areas.

In response, BLM coordinated with the California Desert Air Working Group (CDAWG), which included the five air districts within the WEMO Planning area, to develop a strategy to comply with the Remedy Order. Each of the five air districts is required to submit an annual report describing their air quality monitoring program and its results to the EPA annually. In 2012, the EKAPCD, MDAQMD, and AVAPCD information was included in the California Air Resources Board (CARB) 2012 Annual Monitoring Network Report for Small Districts in California (CARB 2012c). The GBUAPCD developed an independent report titled 2012 Ambient Air Monitoring Network Plan (GBUAPCD 2012) and the SCAQMD developed the South Coast Air Quality Management District Annual Air Quality Monitoring Network Plan (SCAQMD 2012).

These reports document a network of 46 monitoring stations throughout the WEMO Planning area. The only OHV open area that is not directly monitored within this network in the planning area is Rasor OHV area, which receives relatively light use and contains a higher concentration of larger sand particles. Historically, BLM has coordinated with the air districts in the development of their monitoring networks and through review of air data and reports. For areas identified as non-attainment areas, BLM has participated in the preparation of required implementation plans to ensure that BLM activities, including OHV use, are specifically addressed in the plans and the district rules.

To demonstrate compliance with the Remedy Order, 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 (PM_{10}), 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).

Emissions from OHV use and grazing operations 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, is presented in Table 3.2-6. Figure 3.2-4 presents the relative contributions of the various sources to the emissions inventory.

Table 3.2-6. Emissions Inventory in WEMO Planning Area (tons per day)

Type	Category	VOCs	NOx	SO_x	PM_{10}	$PM_{2.5}$
Stationary	Fuel Combustion	0.90	24.02	2.31	5.20	4.02
Stationary	Waste Disposal	0.27	0.07	0.12	0.30	0.07
Stationary	Cleaning and Surface Coatings	6.62	0.00	0.00	0.40	0.38
Stationary	Petroleum Production and Marketing	5.99	0.02	0.00	0.00	0.00
Stationary	Industrial Processes	2.42	55.69	5.83	41.15	17.83
Area	Solvent Evaporation	13.67	0.00	0.00	0.00	0.00
Area	Miscellaneous Processes	5.78	2.43	0.13	221.03	31.84
Mobile	On-Road Motor Vehicles	28.45	135.88	0.22	6.27	5.16
Mobile	Other Mobile Sources	38.31	62.99	0.99	6.00	5.59
Totals from all Sources		**102.41**	**281.10**	**9.60**	**280.35**	**64.89**

Figure 3.2-4 shows that mobile sources (including OHVs) are the largest source of ozone precursor (VOC and NOx) emissions, but are a minor component of SO_x, PM_{10}, 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 PM_{10} 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.

WEMO Area Emissions Projection

In 2016, CARB developed 2015 SIP emission projection data for separate parts of the WEMO planning area, grouped by county and air basin within county. Table 3.2-7 shows the tailpipe emissions from off-highway recreational vehicles for ozone precursors and Table 3.2-8 shows the tailpipe emissions for particulate matter.. Tailpipe emissions for particulate matter were modeled at very low to non-detectable levels for each WEMO sub-planning area. Details about assumptions to estimate ozone precursor molecules from off-highway recreation vehicles on BLM lands in each WEMO air basin by county are provided in Appendix D1.

Table 3.2-7. CARB 2015 SIP Emission Projection Data for Tailpipe Emissions of Ozone Precursors on BLM Lands in the WEMO Planning Area (tons per day)

Air Resource District and County	Total Organic Gases	Reactive Organic Gases	Carbon Monoxide (CO)	Nitrogen Oxides (NOx)
Antelope Valley Los Angeles County	0.01	0.01	0.02	0.00
East Kern Kern County	0.07	0.06	0.13	0.00
WEMO Great Basin Valleys Inyo County	0.01	0.01	0.04	0.00
WEMO Mojave Desert Riverside County	0.00	0.00	0.00	0.00
WEMO Salton Sea Riverside County	0.00	0.00	0.00	0.00
WEMO Mojave Desert San Bernardino County	0.19	0.17	0.65	0.01

Table 3.2-8. CARB 2015 SIP Emission Projection Data for Emissions of Particulate Matter from Unpaved Road Dust and Fugitive Windborne Dust on BLM Lands in the WEMO Planning Area (tons per day)

Air Resource District and County	Total Particulate Matter	PM_{10}	$PM_{2.5}$
Antelope Valley, Los Angeles County	0.22	0.13	0.02
East Kern, Kern County	2.74	1.31	0.21
WEMO Great Basin Valleys Inyo County	1.90	1.06	0.13
WEMO Mojave Desert Riverside County	0.05	0.03	0.00
WEMO Salton Sea Riverside County	0.00	0.00	0.00

Table 3.2-8. CARB 2015 SIP Emission Projection Data for Emissions of Particulate Matter from Unpaved Road Dust and Fugitive Windborne Dust on BLM Lands in the WEMO Planning Area (tons per day)

Air Resource District and County	Total Particulate Matter	PM_{10}	$PM_{2.5}$
WEMO Mojave Desert, San Bernardino County	8.49	5.02	0.63

Emissions that affect air quality in the WEMO planning area also originate from outside the planning area and migrate into the West Mojave Desert by way of low-lying passes from the Los Angeles Basin and the Central Valley and from the Owens Valley. Bytnerowicz et al. (2016) describe the source, cause, and impacts to the WEMO planning area from the Owens Valley:

> "Dust storms occurring in the Owens Valley east of the Sierra Nevada as a result of many decades of pumping water from that aquifer to Los Angeles lead to violations of the coarse particulate matter air quality standard. The Owens Valley is one of the most turbulent valleys in the U.S. and one of the largest coarse particulate matter sources in the Western hemisphere (Reid et al. 1994). Coarse particulate matter is generated during wind events by sandblasting of the efflorescent crust with saltation particles created from lakebed sediment and sand from the shoreline (Reid et al. 1994). Atmospheric coarse particulate concentrations in the Owens Valley area during windstorms can exceed 1,000 μg m-3 (compared to the federal health standard of 150 μg m-3), with plumes reaching above 2,000 meters in height (Reid et al. 1994)."

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 is presented in Table 3.2-9.

Table 3.2-9. 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 motorized 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, mileages of routes within 300 feet of the developed areas were used as a conservative assessment of the potential for air quality impacts to residents.

3.2.6 Climate Change

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 SEIS. 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 SEIS 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 SEIS 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 Regulatory Framework

3.2.6.2.1 Federal

Presidential Executive Order 13783 on Promoting Energy Independence and Economic Growth, dated March 28, 2017, has revoking the preceding Executive Order 13653 Preparing the United States for the Impacts of Climate Change, dated November 1, 2013. The 2017 Order also rescinded the President's Climate Action Plan from June 2013 and the Climate Action Plan Strategy to Reduce Methane Emissions from March 2014. Further, the Order directs the Council on Environmental Quality to rescind its final guidance entitled "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," which is referred to in "Notice of Availability," 81 Fed. Reg. 51866 (August 5, 2016).

In addition, the Secretary of the Department of Interior and directors of its component agencies shall identify existing agency actions, reports, and guidance related to or arising from the specified rescissions of climate-related Presidential and Regulatory Action enumerated in the Order to be revoked or rescinded. As soon as practicable, each agency is to suspend, revise, or rescind, or publish for notice and comment proposed rules suspending, revising, or rescinding any such actions, consistent with existing law and the policies of Order 13783.

3.2.6.2.2 State

The State of California is pursuing wide-ranging policies to reduce greenhouse gas (GHG) pollutant emissions originating with vehicular and industrial sources as a means to cap total emissions and to mitigate adverse impacts to society and ecosystems from atmospheric warming and attendant climate change. GHGs are increasing in the atmosphere and effect a warming trend

in the atmosphere because molecules of GHGs are effective at capturing and reradiating energy (heat) reflected from the earth's surface back to earth rather than continuing into outer space.

To that end, the State of California has developed a unique market-based "cap-and-trade" approach to emissions management intended to address current and potential future impacts of climate. Governor's executive orders, legislation incorporated into the California Code of Regulations, and policy documents direct integrated and collective efforts to offset production of GHGs in California. Climate-related documents bearing on this SEIS refer here mainly to efforts on the part of the California Air Resources Board (CARB) to curb vehicle emissions, particularly in exurban settings where motorized access and recreation occur, including on BLM public lands.

Following is a brief summary of State climate change measures in place or soon to be in place.

Governor's Executive Orders on Climate Change and Control of GHGs from Motor Vehicles

Executive Order S-3-05

In 2005, the Governor of California issued Executive Order S-3-05, establishing statewide GHG emission reduction targets scaled back to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

Executive Order B-16-12

The Governor of California ordered CARB and other California state government agencies in 2012 to achieve the following benchmarks by 2025:

- Over 1.5 million zero-emission vehicles will be on California roads and their market share will be expanding; and
- California's clean, efficient vehicles will annually displace at least 1.5 billion gallons of petroleum fuels.

Executive Order B-30-15

In April 2015, the Governor established an accelerated target for reducing GHG emissions to 40 percent below 1990 GHG levels by 2030.

California State Legislation on Climate Change and Control of GHG Emissions from Motor Vehicles

2002: AB 1493, the "Pavley Bill" on Vehicular Emissions: Greenhouse Gases, established the California Climate Action Registry, and require CARB to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gases from motor vehicles. The Registry applies procedures and protocols for the reporting and certification of reductions in GHG emissions from mobile sources [e.g., motor vehicles] for use by CARB in granting the emission reduction credits. Regulations aim for maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks and any other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state

2006: AB 32, the Global Warming Solutions Act, caps the California GHG emissions at 1990 levels by 2020 starting in 2012. This law enacted the first statewide program in the United States

to mandate an economy-wide limit for GHG emissions from motor vehicles accompanied by enforceable penalties. The Act directed CARB to develop and implement regulations to reduce statewide emissions from stationary sources. It also specifies that CARB regulations adopted in response to AB 1493 also address GHG emissions from vehicles. Guidance was put in place to reduce emissions in an economically efficient manner while ensuring that reductions do not unfairly affect businesses and consumers.

2006: AB 1803 requires CARB to assume responsibility for preparing, adopting, and updating the State of California inventory of GHG emissions.

2016: SB 32 requires that CARB ensure that statewide GHG emissions are reduced to 40% below the 1990 level by 2030.

2016: AB 197 requires that CARB inventory all sources of air pollution within California air basins and determine the kinds and quantity of air pollutants, including but not limited to, the contribution of natural sources, mobile sources, and area sources of emissions, including separate identification of those sources. CARB also makes available, and updates at least annually on its Internet website the emissions of GHGs, criteria pollutants, and toxic air contaminants throughout California broken down to a local and sub-county level for stationary sources and to at least the county level for mobile sources. The law further stipulates that CARB consider the social costs of GHG emissions. Social costs are defined as "an estimate of the economic damages, including, but not limited to, changes in net agricultural productivity; impacts to public health; climate adaptation impacts, such as property damages from increased flood risk; and changes in energy system costs, per metric ton of GHG emissions per year."

CARB Policy Documents Guiding Reductions of GHGs

Zero-Emissions Vehicles (ZEVs)

The Governor's Interagency Working Group on Zero-Emission Vehicles (2016) establishes State of California policy to achieve targets set forth in Executive Order B-16-12. The Working Group has charged CARB with consideration of regulations in 2018 that would create emissions-based credit programs for zero-emission motorcycles, off-highway recreational vehicles, and off-highway utility vehicles.

2017 Climate Change Scoping Plan Update

CARB approved its initial Climate Change Scoping Plan in 2008 to fulfill directives of AB 32. With periodic updates, the Scoping Plan is the State's roadmap to reach GHG reduction goals. The plan outlines a number of key strategies to reduce GHG emissions. The latest update from 2017 continues cap-and-trade regulation of GHG emissions, maintains the low-carbon fuel standard, and advances technology to reduce tailpipe emissions from all motor vehicles. For the first time, the Scoping Plan also addresses reducing GHG emissions from natural lands. By the end of 2018, CARB will develop the Natural and Working Lands Action Plan to reach a goal of making the entire land base of California a net carbon sink, i.e., sequestering more carbon than emitting carbon as GHGs into the atmosphere.

3.2.6.3 Observed Climate Conditions and Trends in the WEMO Planning Area Key Issues

Climate Conditions

Temperature

The WEMO planning area is characterized by hot summer temperatures (average daily highs above 37°C (100°F). Temperature extremes are common in the planning area. Seven of thirteen weather stations in the WEMO planning area have average low temperatures below freezing in December and January. El Mirage at the San Bernardino / Los Angeles county line has the lowest average temperatures in the planning area, and Twentynine Palms at the east end of the planning region has the highest average temperatures. Average daily temperature change ranges 16°C (29°F) for all stations. Seasonal variations are high. Ridgecrest, for example, has recorded highs of 48°C (118°F) and lows of -18°C (0°F) since the mid-1980s.

Rainfall

The rain shadow effect of the mountains on the western and southern boundaries of the WEMO planning area produces less precipitation than on the coast-facing sides. Rainfall generally follows seasonal wind patterns. Most winter rainfall arrives from the southwest and spreads eastward in diminishing amounts across the desert. Cool-season precipitation is the most important and extensive source of rain in the region. Areas of rainfall are generally more widespread and of longer duration during the cool season than in the warm season. Snow occurs during the winter over a large portion of the planning area. The total average snowfall ranges from under one inch in Trona to over three inches at Haiwee Reservoir and Lancaster.

A major feature of western Mojave Desert rainfall is its variability. The cyclic weather phenomenon known as El Niño increases annual winter precipitation in the planning area. The difference in rainfall between wetter El Niño years and the drier intervening La Niña years creates high interannual variability in rainfall over the long run. For example, the town of Mojave in Kern County has mean annual precipitation of 6.06 inches but with a standard deviation from the mean of 4.04 inches expected, so that in about two-thirds of all year's annual precipitation ranges from a low of 2.02 inches to 10.10 inches. Weather records indicate that there have been 23 El Nino years since 1931, approximately one-third of all years. El Niño years, however, account for 65 percent of the precipitation since 1931 at the westernmost edge of the planning area. East-to-west variability is apparent in the difference in the influence of El Niño years. In Twentynine Palms, by contrast, only 44 percent of the precipitation fell in El Niño years since 1931.

During the summer, southwest airflow results in typically very dry weather on the western edge of the Mojave Desert. The influence of summer southwest winds diminishes toward the eastern Mojave Desert, however. This pattern results in a greater continental influence, characterized by a monsoonal weather pattern in the east. The annual precipitation cycle across the entire Mojave Desert shows the two distinctive patterns that approximately divide the region in half. May and June are consistently dry in both patterns, accounting for less than 5% of annual rainfall. From October through April, precipitation is the dominant pattern and accounts for 82% of the annual total in the west part of the West Mojave Desert, whereas in the more easterly bi-seasonal monsoonal weather zone, just 66 percent of the annual precipitation comes in the winter. From July through September, 13 percent and 29 percent of the annual rainfall total falls in the western winter-dominant and the eastern bi-seasonal zones, respectively.

Randsburg, along the western edge of the planning area, and Twentynine Palms, at the eastern edge, illustrate the summer precipitation conditions. In Randsburg, only two percent of the Julys from all years and six percent of Augusts from all years have more than one inch of precipitation. By comparison, Twentynine Palms averages more precipitation in July and August combined than in January and February combined.

Warm-season precipitation results largely from convective precipitation in the form of thunderstorms. Although infrequent, the most dramatic precipitation source is tropical cyclones and hurricanes that drift across the region from offshore Baja California. These typically occur late in the warm season and with widespread and severe flash flooding. Summer thunderstorms can drop more precipitation on a site in one event than the mean annual precipitation for that location. On the other hand, the extent of thunderstorms not associated with tropical storms is often highly localized, and weather stations in areas having a low density of weather stations may miss recording occurrences of local cloudbursts (Redmond 2009).

Wind

Summer storms may bring high winds with peak wind velocities above 50 miles per hour, and even wind speeds of 100 mph occur locally nearly every year. High winds can occur at any season. Winds can increase aerosolization of soil particles and create unhealthy particulate levels in the air.

Climate Change in the Mojave Desert from 1900 to the Present

Climate change has been occurring across the Mojave Desert in the recent past, with a consistent increase in seasonal maximum temperatures regionally (Davey et al. 2007b). Evidence of climate change in the Mojave Desert is based on weather station data (air temperature and precipitation) since 1900 combined with the US Geological Survey's Basin Characterization Model (Flint et al. 2013, Rapacciuolo et al. 2014, Thorne et al. 2015). Because the intervals of time used in retrospective studies of recent climate change differ, model results differ in some aspects. Results appear in Tables 3.2-10 and 3.2-11. These studies show increases in temperatures recently, but results about precipitation generalized across the Mojave Desert are not easy to pinpoint. Table 3.2-10 displays the historic changes.

Table 3.2-10. Changes in nine climate variables for the Mojave Desert based on differences between historical (1951-1980) and modern (1981-2010) conditions

	Mean Annual Temp. (°C)	Minimum Annual Temp. (°C)	Maximum Annual Temp. (°C)	Total Annual Precip. (mm)	Potential Evapo-transpiration (mm)	Actual Evapo-transpiration (mm)	Mean Climatic Water Deficit (mm)	Runoff (mm)	Recharge (mm)
Average Change	+0.4	+0.7	+0.30	+13.6	+27	+13	+20.4	+0.5	+0.9

Source: Flint et al. 2013, Thorne et al. 2015

Table 3.2-11. Changes in the Means, Minima, and Maxima of Six Climate Variables for Mojave Desert[1]

Description of the Range of Climate Change	Mean Annual Temperature (°C)	Minimum Annual Temperature (°C)	Maximum Annual Temperature (°C)	Total Annual Precipitation (mm)	Mean Actual Evapo-transpiration (mm)	Mean Climatic Water Deficit (mm)
Average Change	+0.67	+0.81	+0.30	-1.04	-1.65	+24.63
Minimum Change	-0.17	-1.02	-0.70	-30.34	-34.25	-39.13
Maximum Change	+1.50	+2.84	+0.94	+46.96	+23.30	+71.53

1 - Based on differences between historical (1900-1939) and modern (1970-2009) conditions

Source: Rapacciuolo et al. 2014, supporting information in Appendix S1 available online at: http://onlinelibrary.wiley.com/doi/10.1111/gcb.12638/full

The term climatic water deficit (CWD) (Stephenson 1998) is the amount of water by which potential evapotranspiration (PET) exceeds actual evapotranspiration (AET) of vegetation, i.e., the amount of additional water that would have evaporated or transpired under non-drought conditions if the water had been present in the soils under ambient conditions. CWD is a useful indicator of net change in climate conditions over time as it combines the concurrent effects on vegetation from solar radiation, evapotranspiration, air temperature, and soil moisture (as a function of water recharge from precipitation). Importantly for the vegetation of the Mojave Desert, each recent study indicates that CWD has been increasing in recent decades, whether or not rainfall is increasing or decreasing. Even under conditions where rainfall increases as climate warms, the CWD may still increase because rates of soil transpiration and vegetation evapotranspiration of water under hotter ambient air temperatures may exceed the rate of water delivery to the soil from increased rainfall. This calculation has ecological significance because it estimates drought stress on soils and plants and can point to physiological stress of plants and growing habitat unsuitability for some plant species.

The distribution of impacts of a changing climate are not uniform across a landscape. Rapacciuolo et al. (2014) demonstrate in their modeling of recent climate conditions that topographic diversity and other environmental factors create a range of different responses at a fine scale. Therefore, maximum and minimum ranges of values for climate change since 1900, inclusive of local variations across the Mojave Desert, appear alongside average regional changes in Table 3.2-11. Even though regional trends in the Mojave Desert may overall be toward warming (and perhaps drying), individual drainages may have diverged from the regional trend and individually undergone cooler and/or wetter conditions during the same period.

Gonzalez (2016) analyzed climate change between 1950 and 2010 in Death Valley National Park, at the northeast boundary of the WEMO planning area. Average annual temperature in the Park increased statistically significantly at a rate of 1.3 ± 0.5°C per century. Terrain has played an important role in how much climate has changed in recent time. The highest historical rates of temperature increase have occurred at higher elevations in the northwest section of the park adjacent to the WEMO area. A trend in rainfall amounts was not statistically apparent.

Scenario Models of Future Climate in the WEMO Planning Area

Models of future climate do not predict the future. Future scenario modeling provides insight to landscape and resource managers about a range of possible futures and an understanding of the risks that might confront managers in the future. Models also aid managers to set in motion a portfolio of robust management actions now so that in coming decades future managers will be better able to avoid, mitigate, adapt to, or offset eventual adverse impacts from climate.

Detailed climate scenario modeling for the Mojave Desert has been undertaken less often, as the complexity needed for depicting climate at a scale meaningful for managers is formidable in the highly varied topography of the Mojave Desert and because data from the Mojave Desert for use in scenario modeling are less extensive in contrast to other parts of California. The BLM did not conduct climate scenario modeling specifically for the WEMO SEIS. Recently, however, the BLM has commissioned two independent projects that modeled scenarios of future climate for the WEMO planning area: the BLM Mojave Basin and Range Rapid Ecoregional Assessment (REA) (2013) and products generated in support of the DRECP (2016). Other pertinent sources of scenario modeling for WEMO climate conditions come from Thorne et al. (2015) and Gonzalez (2012, 2016). These resources provide a starting point for adaptation planning for public lands in the West Mojave Desert.

In 2010, NatureServe produced future climate modeling for the BLM Mojave Basin and Range REA. Subsequently in 2013, the Conservation Biology Institute produced maps for the BLM DRECP (2016) based on the modeling work of Flint and Flint (2012) at the US Geological Survey Two distinct climate change scenarios using different assumptions about the atmospheric forcing (the process of atmospheric warming) and future GHG emissions showed divergent modeled results for the climate and hydrologic features for the period 2070-2099 in the WEMO planning area. The Parallel Climate Model (PCM), developed by the U.S. Department of Energy showed in general less severe results than the Geophysical Fluid Dynamics Laboratory model, developed by the National Oceanographic and Atmospheric Administration (NOAA).

The increase in annual minimum-temperature projections suggests a reduction in the duration and intensity of freezing conditions. By mid-century, the frost-free growing season in the Mojave Desert is projected to lengthen by about 30 days and begin about 22 days earlier (Bell et al. 2004). The number of days below 0°C (32°F) is projected to decrease, with the Mojave Desert experiencing almost 40 fewer days of temperatures below freezing (Bell et al. 2004). Extremely cold days (days exceeding the long-term 95th percentile) are projected to decrease by 44 days per year in the Mojave Desert (Bell et al. 2004). Change to higher frequency of severe flooding from less frequent but heavier rainfall linked to climate change are forecast under some modeled projections of climate change in the Southwest. Flood risks are likely to become greater if winter storms and/or monsoons increase in frequency and severity.

Climate Refugia

Climate refugia are parts of landscapes where topographic features and weather patterns combine to sustain current climate conditions or slow the pace (velocity) of changing climate. Such refugia are likeliest where elevation rise is steep, for example. Refugia for the Mojave Basin and Range REA based on conditions modeled through 2060.

According the REA model, climate refugia will be most extensive in three areas: the mountainous northern half of the China Lake Naval Weapons Air Station in southern Inyo County, the eastern Sierra Nevada and its foothills, and the northeast and east edges of the San Bernardino Mountains.

In separate modeling for the DRECP, the Center for Biological Conservation (CBI) (2013) produced additional modeling of climate refugia also using PCM A2 and GFDL A2, for the entire DRECP are, covering the WEMO planning area. The PCM model displays a possible future with greater opportunities for conservation in refugia than the possible future shown resulting from the GFDL model. This range of possible futures gives managers a sense of the uncertainty about future conditions that they can consider in formulating robust decisions now that will impact the future.

3.2.6.4 Implications of Changing Climate 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 climate changes will 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 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 Regional Geologic Overview

The WEMO Planning area is mainly in the Mojave Desert geomorphic province (Mojave Block) of California. The geomorphic provinces do not completely match the bioregional provinces that were used to identify the WEMO Planning area and adjacent planning area boundaries. The Planning area also encompasses a substantial portion of the Basin and Range province to the north and small portions of the Sierra Nevada province to the northwest and the Transverse Ranges to the southwest. The geomorphology of the province is dominated by broad basins filled with sediments eroded from adjacent highlands and mountains, burying the ancient topography. The region may once have been entirely within the Basin and Range province until the Garlock Fault became active in the early to mid-Tertiary Period to create a geographic and climatic boundary. Although Paleozoic- and early Mesozoic-age rocks are present, the desert itself is a Cenozoic-age feature, formed as early as the Oligocene, presumably from movements of the San Andreas and the Garlock faults. During the Pleistocene (Ice Ages), this region of California had a cooler average temperature and lower evaporation rate than at present. While never a wet climate, the Mojave Desert nonetheless once contained many small lakes, and the Mojave River had water flow throughout its length. The majority of the surface in the planning area is covered by Quaternary-age (Pleistocene and Holocene) unconsolidated surficial deposits. These deposits consist primarily of alluvial, fluvial, lacustrine and aeolian sediment.

The Mojave Desert province has distinct western and eastern portions. The “western Mojave” lies within the wedge where the San Andreas and Garlock faults meet, and is bounded on the east by the Mojave River and a line running northwest from Barstow, San Bernardino County, to Red Rock Canyon, Kern County. Uplifts along the two major fault systems include the El Paso Mountains along the northwest side of the Garlock fault, and the San Gabriel and San Bernardino Mountains to the southwest along the San Andreas fault. The western Mojave Desert consists of great expanses of gentle surface with isolated knobs, buttes, ridges, and locally hilly areas. The eastern Mojave consists of alluvial filled basins (downthrown blocks) between mountain ranges separated by normal faults, but includes thrust-fault emplacement hills and mountains. In the southern half, the mountain ranges have a general northwest trend, whereas in the northern half these features have no consistent orientation. For more detailed geology, the reader is referred to the Geologic Map of California, San Bernardino Sheet (Bortugno and Spittler 1986).

Basin and Range province is a geologic term referring to the structure of Mojave Desert valleys (basins) and mountains (ranges) that are aligned roughly north to south. The province extends from the Wasatch Mountains of Utah to the east side of the Sierra Nevada in California. In this region the earth's crust has been extended (stretched thinner) from east to west, and faults associated with this thinning and stretching generally border mountain ranges in this province. The planning area north of the El Paso Mountains and east of U.S. Highway 395 is part of the Basin and Range province. Basin and Range includes the Coso, Argus, and Slate mountains and their adjacent valleys. The Coso Mountains consist largely of igneous/volcanic rocks, including pumice, basalts, cinders and obsidian, and are tectonically active with frequent, very small earthquakes. The Argus and Slate Ranges are mostly igneous/granitic rocks, with some volcanic rocks and exposures of limestone formations. Searles Valley is well-known for its deposits of sodium minerals that are the remnant of a Pleistocene lake that once formed the terminus of the Owens River.

Mountain ranges and valleys of the Transverse Range region trend eastward in a pattern essentially transverse to generally northwest-trending features of southern California. The lowlands of the San Bernardino and Los Angeles plains in the southern part of this region rise abruptly northward to the San Bernardino and San Gabriel mountains, respectively, two of the most rugged and highest ranges in southern California. The rock units of the Transverse Range region may be divided into two main groups: (a) crystalline basement complex composed of metamorphic and plutonic rocks; and (b) sedimentary and volcanic rocks. The metamorphic rocks of this complex include, from oldest to youngest: Precambrian gneiss and marble; Precambrian Pelona Schist; Paleozoic meta-sedimentary rocks containing mineralized gold; and marble/limestone; and Pre-Cenozoic rock (Dibblee 1970).

Highly diverse marine and non-marine sedimentary rocks, volcanic and intrusive igneous rocks range from Precambrian to Recent times. Geologic events involve plate collision, metamorphism, and faulting. This diversity of rock types, long history of igneous activity, and the complex structural and geomorphic development of the region have resulted in the formation of a wide variety of mineral assemblages and their concentration to form ore deposits that are present in the planning area.

3.3.2 Soils Overview

Available Soil Survey Information for the Planning Area

The USDA Natural Resource Conservation Service (NRCS) soil surveys have identified many kinds of soils across the planning area. The NRCS has created two separate types of soil mapping data. The Digital General Soil Map of the United States (STATSGO2) is an inventory of soils and non-soil areas at a map scale of 1:250,000 for the continental United States. STATSGO2 is useful for broad planning and management uses covering state, regional, and multi-state areas. For much of the Mojave Desert, STATSGO2 is the only source of soils data. In the absence of ground-based soil survey data, STATSGO2 data relies on geology, topography, vegetation, and climate derived from Land Remote Sensing Satellite (LANDSAT) images for probable classification and extent of the soils. For project-specific planning such as OHV route designation, STATSGO2 is not sufficient.

A second NRCS data source for soils mapping is the SSURGO database. The SSURGO database contains soils information collected by the National Cooperative Soil Survey. The information come from direct on-the-ground observations coupled with interpretation of remotely sensed data, often followed up with laboratory analysis. Soil maps generated in SSURGO outline areas called map units. Map units describe soils and other components that have unique properties, interpretations, and productivity. Each map unit may contain one to three major soil components and some minor components. Map units typically have the name of the major soil components. Information available from the SSURGO database includes physical and chemical properties, frequency of flooding, and limitations affecting recreational uses. Soil scientists collect information at scales ranging from 1:20,000 to 1:63,360. Resulting maps are intended for natural resource planning and management.

The NRCS organizes the SSURGO data into soil survey areas. SSURGO map data can be viewed in the Web Soil Survey (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm). Table 3.3-1 lists the NRCS Order 3 soil survey areas that encompass BLM public lands in the WEMO planning area. Other soil survey are available for Department of Defense military installations,

adjacent national forests, and Joshua Tree National Park. Although these survey areas do not overlap with BLM lands, they contain information useful for BLM managers about public lands adjacent to these other jurisdictions. Wherever possible, data from the SSURGO are used in description and analyses of soils in this SEIS. Each year the NRCS soil survey staff updates SSURGO databases to reflect new information.

Table 3.3-1. NRCS Soil Survey Areas in the WEMO Planning Area

Survey Name	Survey Number	County	Status	Coverage
Benton-Owens Valley Area	CA802	Inyo	complete	Along highway 395 from the WEMO boundary south to the south end of Haiwee Reservoir and then east to the China Lake Naval Air Weapons Station.
Kern County, Southeast Part	CA670	Kern	complete	Tehachapi Range foothills parallel to Rosamond north to Cantil, east to Atolia, and south to Boron across the north side of Edwards Air Force Base.
Mojave Desert Area, Northwest Part	CA682	Kern, San Bernardino	partial	The BLM Ridgecrest Field Office boundary on the west from Cantil north to the Inyo County line and then east to Searles Lake and the boundary of the Fort Irwin National Training Center and south to just below Atolia, west back to Cantil.
Antelope Valley Area	CA675	Kern, Los Angeles	complete	Mojave Desert portion of Los Angeles County and north into Kern County along the Tehachapi Range foothills outside the Los Padres National Forest north parallel to the town of Boron.
Mojave River Area	CA671	San Bernardino	complete	North from the boundaries of the Angeles and San Bernardino National Forests and east of Edwards Air Force Base to Harper Lake, east past Barstow along the south side of Fort Irwin to Yermo (I-15) and Newberry Springs (I-40), then west again to near Daggett and south to Lucerne and the San Bernardino National Forest
Mojave Desert Area, West Central Part	CA698	San Bernardino	partial	Near I-40 south and west of Newberry Springs and east of Lucerne Valley to the west boundary of the Twenty-nine Palms Marine Corps Ground Combat Center and south to the southeast boundary of the WEMO planning area and the boundary with Joshua Tree National Park.

Desert Soil Properties and Processes

Desert soils differ considerably from soils of mesic (moist climate) ecosystems, which scientists have studied in greater depth. For example, Mojave Desert vegetation often provides scant cover for wildlife from predators and extreme temperatures. Many vertebrate animal species, therefore, use desert soils as their principal source of cover and habitat for reproduction and survival.

Lizards, snakes, desert tortoises, burrowing owls, rodents, kit foxes, and badgers are some of the desert animals that dwell in soils during a large portion of their lives.

Size and texture of sediments, mineral composition, amount of pore spaces between sediments and between soil organic complexes, soil fertility, vegetation cover, presence of biological soil crusts, and water content become critical in water-limited desert ecosystems. Soils in arid and semi-arid region are important because they can promote microbial and invertebrate populations that facilitate plant growth and nutrient cycling despite water scarcity. The ability of soil to hold water for long periods is critical to photosynthesis in plants that converts atmospheric carbon through plant water use to add or maintain sufficient aboveground vegetation and belowground root biomass.

Important processes in the Mojave Desert are the accumulation of organic matter, the formation of and translocation of clay minerals, the accumulation of particulate matter deposited from the atmosphere, weathering of parent material, sequestration of inorganic carbon, and the formation of desert pavement. Degradation of these soil processes occurs when soils lose their capacity to hold moisture and soil nutrients in desert ecosystems.

Fertility also depends on the availability of soil mineral macronutrients and key micronutrients in desert soils. Low amounts of phosphorus in the soil often limit growth of plants in desert soils, for example. Inputs of nutrients to desert soils come from deposition of minerals, sediments, and organic matter, either from the atmosphere or from water transport. Minerals are important because they bind especially to soil organic compounds for eventual uptake by plants when soil water is sufficient to dissolve the minerals attached to the compounds and transfer dissolved minerals to plant roots.

West Mojave Desert soils locally receive unnaturally high amounts of nutrients, creating environmental problems. One example is the high rate of deposition of nitrogen onto the surfaces of soils. This nitrogen load stems from high amounts of atmospheric nitrogen generated principally by vehicle traffic in the Los Angeles Basin and moving downwind into the West Mojave Desert. Added nitrogen increases the habitat suitability of desert soils for comparatively high-nitrogen consuming plants such as non-native invasive annual grasses. These plants now comprise as much as 90 percent of the annual plant biomass in some areas and subsequently lead to the loss of species-diverse native plant communities and to an unprecedented increase of fire-prone fine fuels in the desert.

Scientists have often underestimated the amount of carbon sequestered in the desert because investigations of soil carbon limited their inquiry to the top one meter of soil and considered only organic carbon (Wang et al., 2010). Soil inorganic carbon, especially in the form of calcium carbonate (CaCO3), results from mineral weathering under dry conditions. Mineral weathering is a major process transforming carbon from the atmosphere and from plants into inorganic carbon sequestered in mineral compounds such as carbonates. Desert soils are the third largest global pool of carbon (Emmerich 2003), most of it stored as inorganic carbon. Soil inorganic carbon tends to be more stable than soil organic carbon over time because inorganic carbon compounds are not readily available for microbial respiration.

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 Rasor 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 sand environments along the Mojave River east of Barstow now represent the farthest west sites for 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 semi-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 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 and plant growth.

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 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. 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, and are more prone to erosion by surface water. Soils that have a high infiltration rate are classified as Group A, 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 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 or occurs on lands designated as "limited" or controlled," the required authorization is an approved mining plan of operations under 43 CFR subpart 3809, 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 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 motorized 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. 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.

3.3.3 Water Resources

Water resources are scarce and critically important in the semi-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.

This chapter describes first the regulatory setting for water resources management. A description of the hydrologic cycle, important water features of the WEMO planning area, and major water management issues follows.

3.3.3.1 Regulatory Setting

Federal Water Resource Management

The Federal Clean Water Act

In 1972, amendments to the Federal Water Pollution Control Act, or "Clean Water Act" (CWA), created a broad national program to protect water quality and regulate waste and pollutant discharges in United States waters (Title 33 United States Code [U.S.C.] Section 1251 et seq.). The CWA authorizes the U.S. Environmental Protection Agency (EPA) to establish water quality standards and to oversee permitting for otherwise prohibited waste and pollutant discharges from "point sources," that is sources from industrial facilities, sewage treatment plants, and stormwater drains. Large amounts of sediment in streams from one or more upslope erosion areas ("non-point sources") may also qualify as pollutants under the CWA.

The CWA also grants to the EPA the authority to delegate to state governments the implementation of CWA provisions. In California, the State Water Quality Control Board (SWRCB) oversees administration of CWA regulations.

Key CWA provisions relevant to the scope of this SEIS include:

- Section 303(d) – Identification of waters where current pollution control technologies alone cannot meet the water quality standards set for that waterbody. Every two years, states are required to submit for EPA approval a list of impaired waters plus any that may soon become impaired. Each state prioritizes impaired waters based on the severity of the pollution and the designated beneficial use of the waterbody (e.g., fish propagation or human recreation). States must establish the total maximum daily load(s) of the pollutant(s) in the waterbody for impaired waters on their list or provide an alternate means to reverse the impairment.
- Section 401 – Water Quality Certification requirements for federally permitted activities involving construction that may result in discharges to surface waters and wetlands.
- Section 404 – Permit program for controlling discharges of dredge or fill materials into surface waters and wetlands. The EPA delegates to the US Army Corps of Engineers implementation of Section 404. Activities in waters of the United States regulated under this program include fill for development, water resource projects (e.g., dams) and infrastructure development (e.g., stream crossings, culverts, visitors centers). Section 404 also requires a permit before dredged or fill material may be discharged into waters of the United States unless the activity is exempt (e.g., certain farming and forestry activities). No discharge of dredged or fill material may be permitted if a practical, less damaging alternative exists, or if waters would be significantly degraded. For most discharges with only minimal adverse impacts, a *general permit* may suffice. Specific categories of activities receive general permits on a national, regional, or state basis. General permitting process eliminates individual review and allows some activities such as minor road activities, utility line backfill, and bedding to proceed with little or no delay once general or specific conditions for the general permit are met. Section 404 permits are also subject to CWA Section 401 water quality certification from the regional representative office for the SWRCB.

Executive Order 13778 Review of the 'Waters of the United States' Rule

The EPA and the US Army Corps of Engineers determine whether Sections 404 and 401 of the CWA protect a waterway, water body, or wetland under the definition of "waters of the United States. On February 28, 2017, Executive Order 13778 "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule" directed the EPA and the Army Corps of Engineers to (1) review and rewrite the final rule entitled "Clean Water Rule: Definition of 'Waters of the United States,'" 80 Fed. Reg. 37054 (June 29, 2015), for consistency with the current policy and (2) publish for notice and comment a proposed rule rescinding or revising the rule, as appropriate and consistent with law. In connection with the proposed rule, the EPA and the Army Corps … shall consider interpreting the term "navigable waters," as defined in 33 U.S.C. 1362(7), in a manner consistent with the opinion of Justice Antonin Scalia in Rapanos v. United States, 547 U.S. 715 (2006).

On July 27, 2017, the EPA Administrator and the acting the Assistant Secretary of the Army for Civil Works proposed a rule to rescind the existing definition. Once the final rule is published, the current definition will be rescinded. A second step in rulemaking intends to return the legal definition of "waters of the United States" to the definition used before 2015.

The text of current rule under rulemaking to be rescinded is available at: https://www.federalregister.gov/documents/2015/06/29/2015-13435/clean-water-rule-definition-of-waters-of-the-united-states. The 2015 Rule recognizes three basic categories of jurisdiction for "waters of the United States": waters that are jurisdictional in all instances, waters that are excluded from jurisdiction, and a narrow category of waters subject to case-specific analysis to determine whether they are jurisdictional.

Under the 2015 definition, waters of the United States comprise:

1. All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide.
2. All interstate waters including interstate wetlands.
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes
    (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
    (iii) Which industries use or could use for interstate commerce.
4. All impoundments of waters otherwise defined as waters of the United States.
5. Tributaries of waters identified in paragraphs (s) (1) through (4) of this section.
6. The territorial sea.

Wetlands that are not waters of the United States include waste treatment systems and treatment ponds and lagoons. Waters of the United States also do not include converted cropland. A project proponent would conduct a Jurisdictional Determination (JD) to determine whether "waters of the United States" are within the project boundaries and whether the proposed action would impact these waters. The US Army Corps makes that final determination whether Section 404 Permits are required and whether Section 401 Certification is issued with additional mitigation required to have the project comply with the CWA.

Executive Order 11990 Protection of Wetlands

Executive Order 11990 requires that federal agencies prohibit construction or management practices that would adversely affect wetlands, unless an agency finds either that no practical alternative exists or that a proposed action has considered all practical measures to minimize harm to the wetlands. EO 11990 directs all federal agencies to minimize the destruction, loss, or degradation of wetlands. The order also directs agencies to preserve and enhance the natural beneficial values of wetlands in the conduct of agency responsibilities for: (1) acquiring, managing, and disposing of federal lands and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resource planning, regulating, and licensing.

Executive Order 11988: Floodplain Management

EO 11988 requires federal agencies to avoid, to the extent possible, both long- and short- term adverse impacts from the occupancy and modification of floodplains, and to avoid both direct and indirect support of floodplain development wherever there is a practical alternative. This order states that "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities" for:

- Acquiring, managing, and disposing of federal lands and facilities.
- Providing federally undertaken, financed, or assisted construction and improvements.
- Conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.

The guidelines follow an eight-step process that agencies are to carry out as part of their decision-making on projects that could potentially impact a floodplain. The eight steps are:

1. Determine whether a proposed action is in the base floodplain (an area that has a 1% or greater chance of flooding in any given year).
2. Conduct early public review, with appropriate advance public notice.
3. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside the floodplain.
4. Identify impacts of the proposed action.

5. Develop measures to minimize impacts and to restore and preserve the floodplain, as appropriate, where impacts cannot be avoided.
6. Re-evaluate alternatives.
7. Present the findings and a public explanation.
8. Implement necessary actions.

The Federal Interagency Task Force on Floodplain Management has clarified requirements for development in floodplains and emphasized that agencies should select alternative sites for projects outside floodplains and, where practical, develop measures to mitigate unavoidable impacts.

Department of Interior and BLM Water Resource Management Policies

Federal policy defines wetlands as areas inundated or saturated by surface water or groundwater at a frequency or duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. BLM Manual 1737, Riparian–Wetland Area Management, includes under this definition marshes, shallow swamps, lakeshores, bogs, muskegs, wet meadows, estuaries, and riparian areas (seeps and springs). The manual defines riparian areas as a form of wetland transition between permanently saturated areas and upland areas. BLM's Riparian-Wetland Initiative for the 1990s established national goals and objectives for managing riparian and wetland resources on public lands. The overall objective was to restore riparian and wetland areas so that 75 percent or more were determined to be in Proper Functioning Condition (PFC). PFC is a qualitative method for assessing the condition of riparian-wetland areas. A PFC assessment considers in a consistent approach hydrology, vegetation, and processes and attributes of erosion and deposition of soils and sediments. BLM staff evaluate conditions of riparian areas using the Standards for Rangeland Health (see 43 CFR 4180.2) and PFC for riparian management as explained in BLM Technical Reference 1737-15 (Prichard 1998) and BLM Technical Reference 1737-16, revised edition (Prichard 2003).

State of California Water Management

California Constitution, Article X, Section 2

The California State Constitution, Article X, Section 2, states that water resources of the state be put to beneficial use to the fullest extent possible and prohibits water waste, unreasonable use, or unreasonable methods of use.

Porter–Cologne Water Quality Control Act, as Amended

The Porter–Cologne Water Quality Control Act protects the water quality and beneficial uses of "waters of the state" (California Water Code, Division 7, Section 13000 et seq.). Under the Act, waters of the state include "any surface or groundwater, including saline water, within boundaries of the state" (California Water Code, Division 7, Section 13050 [e]). All waters of the United States (federal waters) and all non-federal waters are also waters of the state.

The Porter Cologne Act authorizes the SWRCB and the state's nine Regional Water Quality Control Boards (RWQCBs) to establish water quality standards and discharge prohibitions, issue waste discharge requirements, and implement provisions of the federal CWA.

The SWRCB and RWQCBs are the principal state agencies responsible for water quality. On behalf of the federal CWA, they jointly establish water quality standards, beneficial uses, water quality objectives for beneficial uses, best management practices (BMPs), an anti-degradation policy, and regulations for waste discharges to ensure compliance with water quality standards. Basin Plans prepared by the staffs of each RWQCB provide details of these elements.

Two RWQCBs, the Lahontan and Colorado River, have jurisdiction over parts of the WEMO planning area. The Lahontan RWQCB is further divided into north and south basins, of which the south basin covers the larger part of the planning area. BLM WEMO public lands are extensive in both regions. The Colorado River RWQCB has jurisdiction in the WEMO planning area over the BLM public lands approximately south of Barstow and east of Victorville. In 1985, the BLM California Desert District and the Colorado River RWQCB established a memorandum of understanding (Board Resolution 85-24) for collaborative work.

Water quality standards "consist of a designated use or uses for the Waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the CWA" (40 CFR 131.3[i]). Water quality standards developed for particular water segments are therefore location-specific as well. Designated uses in California are fall under categories of "beneficial uses."

California Water Code

The California Water Code stipulates that the primary interest of the people of the State of California is the conservation of all available water resources, and requires that the maximum re-use of reclaimed water offset potable resource use (Sections 451 and 13550 et seq.). The code divides California water rights into three categories: surface water, percolating groundwater, and subterranean streams that flow through known and definite channels (Section 1200). The code defines waters of the state (Section 13050) and requires RWQCBs to prepare Basin Plans that define water quality objectives for protecting beneficial uses of surface water and groundwater and provide comprehensive water quality planning (Sections 13240 through 13243). The code further includes many other provisions that (1) define reasonable and beneficial water uses; (2) set standards for well drilling; (3) require that water supplies for large new developments be demonstrated in advance; (4) require Storm Water Pollution Prevention plans; and (5) address other aspects of water resources, water rights, and water management.

Water Quality, Supply and Infrastructure Improvement Act

In 2014 the Water Quality, Supply and Infrastructure Improvement Act was signed into law. The Water Quality, Supply and Infrastructure Improvement Act institutes funding for integrated regional water management, water recycling, groundwater sustainability, and watershed protection and ecosystem restoration.

Groundwater Sustainability Act, CGC 65350.5

In September of 2014, Governor Brown signed three bills that together constitute the Sustainable Groundwater Management Act (SGMA). SGMA has defined sustainable groundwater management as the management and use of groundwater in a manner that can be maintained

during the planning and implementation horizon without causing undesirable results. SGMA authorizes water management agencies and stakeholders collaborate in the formation of Groundwater Sustainability Agencies to prepare Groundwater Sustainability Plans, with public input, to achieve sustained groundwater yield. The Department of Water Resources publication *California's Groundwater, Bulletin 118, Interim Update 2016* has identified boundaries of groundwater basins, high- and medium-priority groundwater basins, and basins in critical conditions of overdraft. Sustainability Plans for groundwater basins that are both high- or medium-priority *and* in critical conditions of overdraft must be completed January 31, 2020. High- and medium-priority groundwater basins *not* in critical conditions of overdraft must have completed Sustainability Plans by January 31, 2022.

California Fish and Game Code, Sections 1600-1616, as Amended

The California Fish and Game Code states that all streams and lakes are subject to the Code (Section 1600 et seq.). The California Department of Fish and Wildlife (CDFW) is the agency assigned to regulate activities that would divert or obstruct the natural flow or otherwise substantially change the bed, channel, or bank of any river, stream, or lake. The Code also covers deposit or disposal of debris, waste, or other material where it may pass into any river, stream, or lake that supports fish or wildlife (Fish and Game Code, Section 1602). CDFW also has jurisdiction over riparian habitats adjoining watercourses. Any proponent of a project either to substantially divert or to obstruct natural water flow; to substantially change the bed, channel, or bank of any river, stream, or lake; or to use materials from a streambed must formally notify CDFW before beginning the project (Section 1602). If CDFW determines that the project may adversely affect existing fish and wildlife resources, a Lake or Streambed Alteration Agreement is required.

California Fish and Game Code, Sections 5650-5656, as Amended

This part of the Code prohibits any substance from being deposited in, permitted to pass into, or placed where the substance that is deleterious to fish, plant life, mammals, or bird life (Section 5650) can pass into waters of the state. This section does not apply to a discharge or a release that is:

1. expressly authorized and in compliance with the terms and conditions of waste discharge requirements pursuant to Section 13263 of the Water Code;
2. a waiver issued pursuant to subdivision (a) of Section 13269 of the Water Code issued by the State Water Resources Control Board (SWRCB) or a RWQCB after a public hearing; or
3. is certified pursuant to and in compliance with, the terms and conditions of a federal permit that the SWRCB or a RWQCB has, after a public hearing, under Section 13160 of the Water Code.

The California Department of Fish and Wildlife (CDFW) makes a final determination of effects on waters of the state after a project proponent makes a preliminary jurisdictional evaluation. If the CDFW determines that an action would impact waters of the state and could substantially adversely affect an existing fish and wildlife resources, the agency then requires a Streambed

Alteration Agreement to comply with Section 1602. A Streambed Alteration Agreement is required in the event that the CDFW determines the activity.

Executive Order W-59-93

Executive Order W-59-93, signed by Governor Wilson on August 23, 1993, established state policy guidelines, with two primary goals, for wetlands conservation: to ensure no overall net loss, and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage in the state. Currently, in fulfillment of the executive order, the SWRCB is drafting the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (the "Procedures") (formerly called the *Wetland and Riparian Protection Policy*). However, the Lahontan Basin Plan has established a "no net loss" policy for its wetland acreage, function, and value, with concurrence of the SWRCB.

3.3.3.2 Groundwater

The majority of groundwater resources in the planning area are associated with the floodplain aquifer along the Mojave River. Precipitation occurring at the headwaters of the Mojave River near Cajon Pass, as well as further south at San Gorgonio Pass, generates the surface water flow in the Mojave River. As it flows more than 150 kilometers (km) east to Afton Canyon, this surface water infiltrates, recharging groundwater in the hydraulically connected basins along the way (Izbicki and others 2007). The Mojave River Basin has been adjudicated and is managed by Mojave Water Agency (MWA). Ground water withdrawals from the basin greater than 10 acre-feet/year require a Base Production Water-Right issued by the MWA.

Throughout the rest of the planning area, groundwater is also found in unconsolidated alluvial fan deposits, although locally floodplain and lacustrine (lake) beach deposits may yield water to wells. The valleys and basins are generally internally drained, with water from precipitation within the basin recharging the alluvial fan deposits, and then ultimately discharging to the land surface and evaporating within the basin. Groundwater is generally under unconfined, or water table, conditions at the margins of the basins, but as the unconsolidated deposits become finer grained toward the centers of the basins, the water becomes confined.

Dating of the water in the Mojave River floodplain aquifer using tritium and carbon-14 methods indicates that the water is relatively recent. In contrast, groundwater in the regional aquifers in the surrounding mountain and canyons is more than 20,000 years old (Izbicki and Michel 2004), suggesting much lower recharge rates.

Although there are vast quantities of water within the groundwater basins, some of the water is of poor quality. The mineral quality of the groundwater within the WEMO Planning area varies greatly. The geologic setting of the basins directly affects the degree of groundwater mineralization. In general, basins near the source of recharge are less mineralized than those that are more distant.

3.3.3.3 Surface Water

Surface water is very scarce in the WEMO Planning area. Streams that originate high in the surrounding mountains to the west and south may have perennial flow in the higher altitudes; at the lower altitudes and throughout the planning area virtually no water exists in streambeds or

riverbeds, except locally after infrequent, heavy cloudbursts. The playas may be covered by water from runoff for as long as two months a year. There are many locally important creeks, springs, and seeps, most of which are associated with the mountain areas.

Very short flow paths generally characterize small local flow systems, usually no more than a few miles in length. Springs connected to these systems are usually located in or near the mountains and have highly variable annual ranges in discharge that respond to the precipitation that year or a few years previous. Discharge waters have small concentrations of dissolved sodium plus potassium and chloride plus sulfate, large concentrations of tritium, and water temperatures that commonly approach average air temperatures. These characteristics imply that the groundwater that feeds the springs is relatively recent, being recharged within a span of less than 70 years.

In contrast, large local flow systems are characterized by inter-basin flow or flow confined to one basin with longer flow paths. Springs connected to these systems have moderate concentrations of the major salts, no significant concentrations of tritium and water temperatures from 50 to 60 degrees Fahrenheit, suggesting a much longer residence time in the aquifer.

Surface water was and is the major transport agent of the rock material from the mountains to the alluvial fans to the valleys. The intense short duration storms result in rapid floodwaters that have enough energy to transport rock material both in the water column and along the beds of the arroyos. Longer duration storms with less intensity still have the energy to transport finer sediment materials. All ephemeral streams in the planning area have naturally high sediment concentrations. Flows from groundwater sources have low sediment concentrations unless runoff water is dominating the flow. Playa water usually has a high concentration of very fine sediment mixed into the column by wind action and varying salt concentrations that depend on the geology of 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 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.

Surface Water Quality

Surface water quality impacts associated with the transportation management system can occur in two primary ways:

- Releases of petroleum fuels from motorized vehicles; and
- Increased sedimentation and erosion due to soil disturbance.

Any use of motorized vehicles on the transportation network can potentially lead to releases of fuels used to power the vehicles. These releases can potentially occur at any location on the network due to vehicle accidents. However, any such releases are expected to be small in volume. Also, given the scarcity of surface water within the planning area, the potential for these releases to enter surface water bodies or otherwise affect sensitive receptors is low. The only exception may associated with auxiliary fuel tanks used at organized events or remote locations. Some motorized vehicle users may carry additional fuel volume in separate tanks in order to re-fuel their vehicles without having to return to developed areas. In such cases, the potential volume of fuel that could be released would be higher, up to 100 or more gallons. The potential for releases from auxiliary fuel tanks to impact sensitive resources would be directly related to the proximity of the release to those resources.

In the impact analysis in Chapter 4, routes identified as having potential for water quality impacts due to erosion and sedimentation are those which are parallel to, or located within, desert washes. The analysis in Chapter 4 identifies the mileage of routes associated with washes for each of the four alternatives.

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 Zadon & 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 prolong 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 prolong drought conditions. The 2015 and 2016 PFC assessment conducted by Zadon may not reflect the "true" conditions of that source but rather a cumulative, deleterious effect on riparian vegetation's vigor and ability to reproduce as a result of a prolong drought on riparian health. These PFC assessment should not be ignored but may need to be considered skewed based primarily on a natural phenomenon, the prolong drought conditions.

In the Remedy Order associated with 2005 WEMO Final EIS, BLM was required to perform new PFC Assessments for all springs and seeps in the WEMO Planning area. As of April, 2016, , BLM has completed a total of 162 PFC assessments in the planning area. Table 3.3-2 describes those seeps, springs, wetlands and creeks that have been assessed for PFC between 2011 to 2016.

Table 3.3-2. Springs and Seeps Assessed in 2011 through 2016

Subregion	Location	Finding
Ridgecrest Field Office		
Sierra Canyon	Glass Canyon	Proper Functioning Condition
Sierra Canyon	Morris Spring	Proper Functioning Condition
Sierra Canyon	Big Spring	Proper Functioning Condition
Sierra Canyon	Nine Mile Canyon	Functional at risk
Sierra Canyon	Unnamed Canyon	Proper Functioning Condition
Sierra Canyon	Grapevine #1	Proper Functioning Condition
Sierra Canyon	Powers Holding Corral Spring	Proper Functioning Condition
Sierra Canyon	Stone Cabin Spring	Proper Functioning Condition
Sierra Canyon	S. Fork Sand Canyon	Proper Functioning Condition
Sierra Canyon	Nine Mile #2	Functional at risk
Sierra Canyon	Short Canyon Riparian	Proper Functioning Condition
Sierra Canyon	5-Mile Canyon – Upper	Proper Functioning Condition
Sierra Canyon	5-Mile Canyon - Lower	Proper Functioning Condition
Sierra Canyon	Indian Wells Canyon	Proper Functioning Condition
Sierra Canyon	Lower Five Mile Canyon	Proper Functioning Condition

Table 3.3-2. Springs and Seeps Assessed in 2011 through 2016

Subregion	Location	Finding
Sierra Canyon	Mid Indian Wells Canyon	Proper Functioning Condition
Sierra Canyon	S. Fork Grapevine Canyon	Proper Functioning Condition
Sierra Canyon	Coyote Spring	Proper Functioning Condition
Sierra Canyon	N. Fork Grapevine Canyon	Functional at risk
Sierra Canyon	Grapevine #2	Proper Functioning Condition
Sierra Canyon	Indian Wells#2	Proper Functioning Condition
Sierra Canyon	Grant Spring	Functioning at risk: Drought
Sierra Canyon	Olancha Creek	Non-functional
Sierra Canyon	Indian Springs	Proper Functioning Condition
Sierra Canyon	Sacatar Canyon	Proper Functioning Condition
Sierra Canyon	Rose Spring	* Functioning at risk: Drought
Sierra Canyon	Coyote Spring	Proper Functioning Condition
El Paso Mountains	Coffee Can Spring	Proper Functioning Condition
El Paso Mountains	Bob Spring	Proper Functioning Condition
El Paso Mountains	Shelley Spring	Non-functional
El Paso Mountains	La Moureaux Springs	Proper Functioning Condition
El Paso Mountains	Midway Spring	Proper Functioning Condition
El Paso Mountains	Unnamed	Proper Functioning Condition
El Paso Mountains	Louise Spring	Proper Functioning Condition
El Paso Mountains	Sheep Spring 2	Proper Functioning Condition
El Paso Mountains	Sheep Spring	Proper Functioning Condition
El Paso Mountains	Upper Goler Canyon Holland Springs	Proper Functioning Condition
El Paso Mountains	Sheep Spring	Proper Functioning Condition
El Paso Mountains	Louise Spring	Proper Functioning Condition
El Paso Mountains	Petroglyph Spring	Proper Functioning Condition
El Paso Mountains	Holland Spring	Proper Functioning Condition
El Paso Mountains	Holland Spring South	Functional-At-Risk: Salt Cedar
El Paso Mountains	Cut Tree Spring	Proper Functioning Condition
El Paso Mountains	Easter Spring	* Proper Functioning Condition
El Paso Mountains	Mesa Spring	* Proper Functioning Condition
El Paso Mountains	Poison Spring	*Proper Functioning Condition
El Paso Mountains	Mesquite Spring	*Functioning at risk: Drought
Jawbone	Hoffman Spring	Proper Functioning Condition
Jawbone	Cabin Creek	Proper Functioning Condition
Jawbone	Cortez Creek	Proper Functioning Condition
Jawbone	Nudist Spring	Proper Functioning Condition
Jawbone	Sage Canyon Creek	Functional At Risk: lack of recruitment due to grazing

Table 3.3-2. Springs and Seeps Assessed in 2011 through 2016

Subregion	Location	Finding
Jawbone	Boulder Canyon Creek	Proper Functioning Condition
Jawbone	Sage Canyon Spring	Proper Functioning Condition
Jawbone	Willow Spring	Proper Functioning Condition
Red Mountain	**RM01 Cuddeback Alkali Well 1	Proper Functioning Condition
Red Mountain	**RM02 Cuddeback Alkali Well 2	Functioning at risk
Red Mountain	**RM3 Steam Well	Non-functional
Jawbone	North Kelso Spring	Proper Functioning Condition
Jawbone	Lower Butterbredt Cyn.	Proper Functioning Condition
Jawbone	Mohawk Buddy Mine Spring (Butterbredt Cyn)	Proper Functioning Condition
Jawbone	Burning Moscow Spring	Functional -At- Risk
Jawbone	Tanager Spring	Functional -At- Risk
Jawbone	Dove Spring Wash	Non-functional: OHV use
Jawbone	Unnamed Near Burning Moscow Spr	Proper Functioning Condition
Jawbone	Lower Dove Wash	Proper Functioning Condition
Jawbone	Rock Spring	Proper Functioning Condition
Jawbone	Williams Spring	Non-functional
Jawbone	Unnamed SW of Cowboy Spr.	Proper Functioning Condition
Jawbone	Upper Jawbone Canyon	Proper Functioning Condition
Jawbone	Kelso Creek	Proper Functioning Condition
Jawbone	See Line Spring	* Proper Functioning Condition
Jawbone	Public Spring	*Functional -At- Risk: Drought
Darwin	Black Spring	Functional -At- Risk: Upward
Darwin	Lower Centennial Spring	Non-functional
Darwin	China Garden Spring	* Proper Functioning Condition
Darwin	Miller’s Spring	* Proper Functioning Condition
North Searles	North Benko	Proper Functioning Condition
North Searles	South Benko	Proper Functioning Condition
North Searles	Ruth Spring	Proper Functioning Condition
North Searles	Skull Spring	Proper Functioning Condition
North Searles	Christmas Spring	* Proper Functioning Condition
North Searles	Nadeau Spring	* Proper Functioning Condition
North Searles	Austin Spring	* Functional -At- Risk: Burned in 2016
North Searles	Wilson Spring	* Proper Functioning Condition
North Searles	Cabin Spring	Proper Functioning Condition

Table 3.3-2. Springs and Seeps Assessed in 2011 through 2016

Subregion	Location	Finding
Barstow Field Office		
Juniper Flats	*Furnace Spring	*Non-functional: Stop ongoing disturbance. 99% of the water captured in a pipeline system and is unavailable to wildlife.
Juniper Flats	Stone Spring	Proper Functioning Condition.
Juniper Flats	*TV Creek aka Veggie Burrito Spring	Proper Functioning Condition.
Juniper Flats	Arrastre Creek (VP Mine Reach)	Proper Functioning Condition.
Juniper Flats	Arrastre Creek (Tahiti Falls Reach)	Functioning at risk: Rip-rap needed.
Juniper Flats	Cottonwood Creek	Proper Functioning Condition.
Juniper Flats	Round Mountain Spring	Functioning at risk, stable: De-watering due to development.
Juniper Flats	*Greenwalt #1	*Functioning at risk, stable: Water diverted to private land.
Juniper Flats	*Dry Willow Seep	*Functioning at risk: Drought
Afton Canyon	Afton Canyon	Functioning at risk: Channelization.
Ord Mountain	**Aztec Spring (Man-made)*	Proper Functioning Condition
Ord Mountain	**Goat Spring (Man-made)*	Proper Functioning Condition
Ord Mountain	Lower Sweetwater Spring	Proper Functioning Condition
Rattlesnake Canyon	Willow Spring	Proper Functioning Condition
Rattlesnake Canyon	Vaughan Spring	Proper Functioning Condition
Rattlesnake Canyon	Unknown Spring (Section 22)	Proper Functioning Condition.
Rattlesnake Canyon	Rock Corral	Functioning at risk: Water diverted.
Rattlesnake Canyon	Dove Spring	Proper Functioning Condition
Rattlesnake Canyon	Two Hole Spring	Functioning at risk: Water diverted.
Rattlesnake Canyon	Rattlesnake Spring	Functioning at risk: Water diverted.
Rattlesnake Canyon	Mound Spring	Functioning at risk: Water diverted.
Rattlesnake Canyon	Kynna Spring	Nonfunctional; Needs to be located & re-assessed.
Rattlesnake Canyon	*Bobcat Scat Spring	*Functioning at risk: Drought
Stoddard Valley	*SV2630 (Seep) aka Johnson Road Seep	*Non-Functional. Need to close or re-engineer to prevent on-going impacts to the wetland!
Black Mountain	*Opal Spring	*Non-Functional: Needs to be re-develop to increase & enhance sustainability.
Cronese Lake	*Jack Spring	*Proper Functioning Condition.
Morongo Valley	Sherman Shady Spring	Functioning at risk: Land ownership & earth moving activities.
Rattlesnake Canyon	Bighorn Mountain Cherry Stem Spring	Functioning at risk: Grazing, camping and road encroachment.

Table 3.3-2. Springs and Seeps Assessed in 2011 through 2016

Subregion	Location	Finding
Rattlesnake Canyon	Burns Spring	Functioning at risk: Road encroachment causing bifurcation of the spring.
Rattlesnake Canyon	Upper Rattle Spring	Non-Functional: Road encroachment & grazing
Rattlesnake Canyon	Seep Complex adjacent to One-Hole Bighorn Seep	Functional -At- Risk: Grazing, need exclusion fence.
Juniper Flats	Lower White Knob #1	Functioning at risk: Salt cedar.
Juniper Flats	Lower White Knob #2	Proper Functioning Condition
Juniper Flats	White Knob Tailings Spring	Proper Functioning Condition
Juniper Flats	White Knob 71A	Proper Functioning Condition
Juniper Flats	High Road Spring	Proper Functioning Condition
Juniper Flats	White Knob Milepost 61 West Spring	Proper Functioning Condition
Juniper Flats	BLM Silver Creek Spring	Functioning at risk: Road encroachment, water diversion
Stoddard Valley	Quail Spring	Proper Functioning Condition
Stoddard Valley	*Horse Spring	*Proper Functioning Condition
Stoddard Valley	*Horse Spring Southeast	*Functioning at risk: Stable
Stoddard Valley	Amaral Spring*	Proper Functioning Condition
Coolgardie	BAR14-01 Paradise Spring NW	Functioning at risk: Upward trend
Coolgardie	BAR14-02 Paradise Spring East	Functioning at risk: Upward trend
Coolgardie	BAR14-03 Paradise Spring Central	Functioning at risk: Stable
Calico Mountain	*BAR14-04 Sweetwater Spring (Non-Ord Mtn. source)	*Proper Functioning Condition
Coolgardie	*Deep Cave Spring	*Functioning at risk: Development
Coolgardie	**BAR14-05 Lane Well	Functioning at risk: Salt cedar
Coolgardie	**BAR14-06 Noble Well	Nonfunctional: Collapsed well
Coolgardie	**BAR14-07 Williams Well	Nonfunctional: Public hazard
Coolgardie	**BAR14-08 Unknown Well (trespass facility)	Functioning at risk: Stable
Stoddard Valley	BAR14-09 RZ Spring	Proper Functioning Condition
Stoddard Valley	BAR14-10 Stoddard Mtn. Spring	Proper Functioning Condition
Ord Mountain	BAR14-11Upper Sweet Water West	Proper Functioning Condition
Ord Mountain	BAR14-12 Upper Sweet Water East	Functioning at risk: Stable
Ord Mountain	*Willow Spring	*Functioning at risk: Stable
Ord Mountain	*Badger Spring (2002)	Functioning at risk: Stable
Ord Mountain	Fisher Spring	Functioning at risk: Stable
Rattlesnake Canyon	BAR14-13 One Hole Spring	Proper Functioning Condition
Rattlesnake Canyon	BAR14-14 Hidden Spring	Proper Functioning Condition
Rattlesnake Canyon	BAR14-15 Lower Rattle Spring	Private Land Functioning at risk: Road encroachment & grazing

Table 3.3-2. Springs and Seeps Assessed in 2011 through 2016

Subregion	Location	Finding
Juniper Flats	BAR14-16 Andes Trail Spring	Proper Functioning Condition
Juniper Flats	BAR14-17 Lower Arrastre Creek	Proper Functioning Condition
Juniper Flats	*BAR14-18 Coxey Road North Seep aka 4600-ft. Spring	*Proper Functioning Condition
Juniper Flats	BAR14-19 Vine Spring	Proper Functioning Condition
Wonder Valley	BAR15-01 Mesquite Spring	Functioning at risk: Downward Trend
Needles South	BAR15-02 Bagdad Chase Mine Spring	Non-Functional (Drought)
Juniper Flats	BAR15-03 West Grapevine Cyn. Spring (Lovelace Cyn.)	Proper Functioning Condition
Stoddard Valley	BAR15-04 Milpas Dr. Spring	Functioning at risk: Water diverted.
Newberry-Rodman	*BAR15-05 Kane Spring	*Functioning at risk: Stable
Newberry-Rodman	BAR15-06 Sheep Spring	Proper Functioning Condition
Morongo Valley	BAR15-07 Pipes Canyon Preserve Springs	Functioning at risk: Stable
Calico Mountains	BAR16-01 Coyote Spring	Proper Functioning Condition
Morongo Valley	BAR16-02 Royal Spring	Proper Functioning Condition
Morongo Valley	BAR16-03 Little Morongo Spring	Proper Functioning Condition
Juniper Flats	BAR16-04 Grapevine Canyon	Proper Functioning Condition

* Zadon PFC Data
** Man-made Source

In addition to the 162 PFC assessments listed above in Table 3.3-2, BLM conducted PFC assessments while conducting Rangeland Health Assessments on grazing allotments in preparation of grazing permit/lease renewals. Table 3.3-3 summarizes the assessments that were conducted between 1999 and 2010.

Table 3.3-3. PFC Assessments Conducted on Grazing Allotments

Subregion	Location	Findings
Ord Mountain	Lower Sweetwater Spring	Functioning at risk: Upward trend
Ord Mountain	Willow Spring	Functioning at risk: Upward trend
Newberry-Rodman	Kane Spring	Functioning at risk: Upward trend
Ord Mountain	Badger Spring	Non-functional: Unable to locate source
Rattlesnake Canyon	Vaughn Spring	Proper Functioning Condition
Rattlesnake Canyon	Lower Rattle Spring	Non-functional: Road encroachment & grazing
Rattlesnake Canyon	Mound Spring	Proper Functioning Condition

Table 3.3-3. PFC Assessments Conducted on Grazing Allotments

Subregion	Location	Findings
Rattlesnake Canyon	One Hole Spring	Functioning at risk: Upward trend
Rattlesnake Canyon	Two Hole Spring	Proper Functioning Condition
Rattlesnake Canyon	Rattlesnake Spring	Proper Functioning Condition
Rattlesnake Canyon	Dove Spring	Proper Functioning Condition
Rattlesnake Canyon	Willow Spring	Proper Functioning Condition
Rattlesnake Canyon	Viscera Spring (SBNF)	Functioning at risk: Upward trend
El Paso Mountains	Louise Spring	Proper Functioning Condition
El Paso Mountains	Sheep Spring 2	Proper Functioning Condition
El Paso Mountains	Sheep Spring	Proper Functioning Condition
El Paso Mountains	Cut Tree Spring	* Proper Functioning Condition
El Paso Mountains	Easter Spring	* Proper Functioning Condition
El Paso Mountains	Mesa Spring	* Proper Functioning Condition
El Paso Mountains	Poison Spring	* Proper Functioning Condition
El Paso Mountains	Mesquite Spring	* Functioning at risk: Drought
Jawbone	Cortez Spring	Proper Functioning Condition
Jawbone	Sage Canyon Creek	Functioning at risk
Jawbone	Nudist Spring	Proper Functioning Condition
Jawbone	Boulder Canyon Creek	Proper Functioning Condition
Jawbone	Sage Canyon Spring	Proper Functioning Condition
Jawbone	Nicoll Spring	Proper Functioning Condition
Jawbone	Willow Spring	Proper Functioning Condition
Jawbone	Burning Moscow Spring	Functioning at risk
Jawbone	Tanager Spring	Functioning at risk
Jawbone	Dove Spring Wash	Non-functional
Jawbone	Upper Jawbone Canyon	Proper Functioning Condition
Jawbone	Kelso Creek	Functioning at risk
Jawbone	Lower Dove Wash	Functioning at risk
Jawbone	Alphie Canyon	Non-functional
Jawbone	Rock Spring	Proper Functioning Condition
Jawbone	Unnamed Near Burning Moscow Spring	Proper Functioning Condition
Jawbone	Lower Butterbredt Canyon	Proper Functioning Condition
Jawbone	Mohawk Buddy Mine Spring	Functioning at risk
Jawbone	Butterbredt Spring	Proper Functioning Condition
Jawbone	Upper Shoemacher Spring	Functioning at risk

Table 3.3-3. PFC Assessments Conducted on Grazing Allotments

Subregion	Location	Findings
Jawbone	Williams Spring	Functioning at risk
Jawbone	Unnamed Southwest of Cowboy Spring	Proper Functioning Condition
Jawbone	Hoffman Well	** Non-functional
Jawbone	See Line Spring	* Proper Functioning Condition
Darwin	Black Spring	Functioning at risk: Upward
Darwin	Lower Centennial Spring	Non-functional
Sierra Canyon	Grant Spring	*Functioning at risk: Drought
Sierra Canyon	Rose Spring	*Functioning at risk: Drought

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 motorized vehicles 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 motorized vehicles. 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 motorized vehicle 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.

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, especially with respect to climate change. 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	10,715.5
Barstow	BA	5,263.1
Black Mountain	BM	41,321.7
Calico Mountains	CM	36,614.7
Coolgardie	CG	54,280.2
Cronese Lake	CL	26,636.9
El Mirage	EM	11,933.4
El Paso	EP	75,970.5
Fremont Peak	FP	45,699.0
Harper Lake	HL	19,036.3
Iron Mountain	IM	8,811.4
Jawbone	JB	84,338.8
Johnson Valley	JV	18,209.7
Juniper Flats	JF	20,569.5
Kramer Hills	KH	40,176.6
Lancaster	LA	1,942.5

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
Middle Knob	MK	18,354.2
Mitchel Mountains	MM	7,487.3
Mojave Trails National Monument	MT	93,209.7
Newberry-Rodman	NR	4,951.2
North Searles	NS	37,488.7
Ord Mountains	OM	26,177.9
Rands	RA	14,628.5
Rattlesnake Canyon	RC	28,839.7
Red Mountain	RM	100,766.4
Ridgecrest	RI	53,620.2
Sand-to-Snow National Monument	SA	7,157.2
Sierra	SI	47,392.7
South Searles	SS	258.5
Stoddard Valley	SV	77,145.7
Victorville	VV	1,309.3
Wonder Valley	WV	6,739.3

3.4.2 Unusual Plant Assemblages

The CDCA recognized areas throughout the CDCA as Unusual Plant Assemblages (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
Olancha 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

Table 3.4-2. UPAs in WEMO Planning Area

UPA	Field Office	Estimated Acreage
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
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	PFC
Ord Mountain	Upper Sweetwater Spring - East	FAR – No Apparent Trend (Stable)
Ord Mountain	Lower Sweetwater Spring	PFC
Ord Mountain	Willow Spring	FAR – Stable
Ord Mountain	Kane Spring	FAR – Upward Trend
Ord Mountain	Badger Spring	FAR- 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 C, a total of 58 special status plant species were identified as potentially occurring within the planning area, and potentially affected by the Proposed Action (BLM 2005, 2013a, b; Dudek and ICF International 2012). The total acreage identified as potential occurrence for each of the 58 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	CNDDB	332.9
		Creamy blazing star	CNDDB	101.4
		Mojave monkeyflower	CNDDB	36.0
Black Mountain	BM	Barstow woolly sunflower	CNDDB	4.9
		Creamy blazing star	CNDDB	775.7
		Desert cymopterus	CNDDB	724.7
Broadwell Lake	BL	White-margined beardtongue	CNDDB	69.1
Calico Mountains	CM	Beaver Dam Breadroot	CNDDB	954.6
		Creamy blazing star	CNDDB	66.8
		Mojave monkeyflower	CNDDB	915.9
		Parish's phacelia	CNDDB	325.8
Coolgardie	CG	Alkali mariposa lily	CNDDB	3.3
		Barstow woolly sunflower	CNDDB	5.0
		Beaver Dam Breadroot	CNDDB	1,523.4
		California alkali grass	CNDDB	138.7
		Clokey's cryptantha	CNDDB	247.5
		Creamy blazing star	CNDDB	96.9
		Lane Mountain milk-vetch	CNDDB	2,005.6
			Critical Habitat	9,896.9
Cronese Lake	CL	Parish's phacelia	CNDDB	579.6
Darwin	DA	Curved-pod milk-vetch	CNDDB	181.8
		Death Valley sandpaper-plant	CNDDB	1,426.3
El Mirage	EM	Beaver Dam Breadroot	CNDDB	11.2
El Paso	EP	Charlotte's phacelia	CNDDB	103.7
		Pale-yellow layia	CNDDB	24.1
		Red Rock poppy	CNDDB	162.8
Fremont Peak	FP	Barstow woolly sunflower	CNDDB	1,836.8
		Desert cymopterus	CNDDB	9.9
Harper Lake	HL	Barstow woolly sunflower	CNDDB	1,489.9
		Beaver Dam Breadroot	CNDDB	1,790.9
		Chaparral sand-verbena	CNDDB	1.2
		Creamy blazing star	CNDDB	69.8
		Desert cymopterus	CNDDB	737.3
		Mojave Menodora	CNDDB	69.8
		Mojave monkeyflower	CNDDB	37.9
		Parish's phacelia	CNDDB	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	CNDDB	35.2
Jawbone	JB	Charlotte's phacelia	CNDDB	239.5
		Creamy blazing star	CNDDB	18.3
		Kelso Creek monkeyflower	CNDDB	651.6
		Kern River evening-primrose	CNDDB	11.8
		Mojave tarplant	CNDDB	7.48
		Pale-yellow layia	CNDDB	45.4
		Palmer’s mariposa lily	CNDDB	160.6
		San Bernardino aster	CNDDB	153.0
		Spanish Needle onion	CNDDB	1.4
Johnson Valley	JV	Mojave Menodora	CNDDB	11.9
Joshua Tree	JT	Little San Bernardino Mountains linanthus	CNDDB	14.8
		Mojave Menodora	CNDDB	8.9
Juniper Flats	JF	Beaver Dam Breadroot	CNDDB	52.6
		Cushenbury buckwheat	CNDDB	31.6
			Critical Habitat	31.8
		Cushenbury milk-vetch	CNDDB	4.2
			Critical Habitat	8.4
		Latimer’s woodland-gilia	CNDDB	155.7
		Mojave tarplant	CNDDB	52.6
		Parish's daisy	CNDDB	52.1
			Critical Habitat	64.3
		San Bernardino milk-vetch	CNDDB	325.8
Kramer Hills	KH	Barstow woolly sunflower	CNDDB	36.9
		Beaver Dam Breadroot	CNDDB	2,236.4
		Desert cymopterus	CNDDB	4.9
Lancaster	LA	Robbins’ nemacladus	CNDDB	660.7
Middle Knob	MK	Bakersfield cactus	CNDDB	1.0
		Charlotte's phacelia	CNDDB	19.0
		Grey-leaved violet	CNDDB	30.0
		Horn’s milk-vetch	CNDDB	195.1
		Kern buckwheat	CNDDB	23.0
		Pale-yellow layia	CNDDB	1.4
		Tehachapi monardella	CNDDB	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	CNDDB	1.0
		Creamy blazing star	CNDDB	56.2
		Mojave Menodora	CNDDB	28.3
		Mojave monkeyflower	CNDDB	125.4
Mojave Trails National Monument	MT	Harwood's eriastrum	CNDDB	73.7
		Mojave Menodora	CNDDB	33.5
		White-margined beardtongue	CNDDB	2,894.3
Newberry-Rodman	NR	Beaver Dam Breadroot	CNDDB	61.7
		Boyd's Monardella	CNDDB	14.6
		Creamy blazing star	CNDDB	37.1
		Mojave Menodora	CNDDB	53.9
		Mojave monkeyflower	CNDDB	250.7
		White-margined beardtongue	CNDDB	9.2
Ord Mountains	OM	Beaver Dam Breadroot	CNDDB	253.1
		Boyd's Monardella	CNDDB	38.7
		Clokey's cryptantha	CNDDB	5.0
		Creamy blazing star	CNDDB	2,713.1
		Mojave Menodora	CNDDB	44,017.2
		Mojave monkeyflower	CNDDB	223.8
Rands	RA	Charlotte's phacelia	CNDDB	28.4
		Clokey's cryptantha	CNDDB	1,690.5
		Desert cymopterus	CNDDB	0.3
		Red Rock Canyon monkeyflower	CNDDB	1,286.4
		Red Rock poppy	CNDDB	6.9
Rattlesnake Canyon	RC	Big Bear Valley woollypod	CNDDB	740.9
		Creamy blazing star	CNDDB	390.2
		Cushenbury buckwheat	CNDDB	732.8
			Critical Habitat	390.5
		Cushenbury milk-vetch	CNDDB	153.6
			Critical Habitat	830.1
		Cushenbury oxytheca	CNDDB	83.2
		Latimer's woodland-gilia	CNDDB	12.6
		Little San Bernardino Mountains linanthus	CNDDB	224.6
		Mojave monkeyflower	CNDDB	390.6
		Palmer's Mariposa Lily	CNDDB	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	CNDDB	288.2
			Critical Habitat	880.7
		Robison's monardella	CNDDB	55.9
		San Bernardino milk-vetch	CNDDB	1,126.3
		White-bracted spineflower	CNDDB	390.2
Red Mountain	RM	Barstow woolly sunflower	CNDDB	16.3
		Desert cymopterus	CNDDB	719.6
		Red Rock Canyon monkeyflower	CNDDB	393.7
		Red Rock poppy	CNDDB	176.3
Ridgecrest	RI	Red Rock poppy	CNDDB	1,811.0
Sand-to-Snow National Monument	SA	Latimer's woodland-gilia	CNDDB	34.8
		Little San Bernardino Mountains linanthus	CNDDB	17.6
		Palmer's mariposa lily	CNDDB	8,195.6
		Triple-Ribbed Milkvetch	CNDDB	210.8
		White-bracted spineflower	CNDDB	364.7
Sierra	SI	Charlotte's phacelia	CNDDB	690.9
		Chimney Creek nemacladus	CNDDB	6.0
		Creamy blazing star	CNDDB	1,366.1
		Dedecker's clover	CNDDB	28.8
		Gilman's goldenbush	CNDDB	4.9
		Hall's daisy	CNDDB	65.3
		Kern Plateau bird's beak	CNDDB	27.3
		Latimer's woodland-gilia	CNDDB	9.9
		Mojave tarplant	CNDDB	20.8
		Muir's tarplant	CNDDB	25.2
		Nine Mile Canyon phacelia	CNDDB	245.6
		Owens Peak lomatium	CNDDB	79.5
		Owens Valley checkerbloom	CNDDB	31,171.6
		Rose-flowered larkspur	CNDDB	481.0
		Sanicle cymopterus	CNDDB	752.1
		Spanish Needle onion	CNDDB	5.0
		Sweet-smelling monardella	CNDDB	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	CNDDB	856.5
		Beaver Dam Breadroot	CNDDB	103.8
		Creamy blazing star	CNDDB	42.1
		Mojave Menodora	CNDDB	5.6
		Mojave monkeyflower	CNDDB	169.7
		Parish's phacelia	CNDDB	395.2
Victorville	VV	Short-joint beavertail cactus	CNDDB	24.7
		White-bracted spineflower	CNDDB	240.8
Wonder Valley	WV	Harwood's eriastrum	CNDDB	4.9
		Little San Bernardino Mountains linanthus	CNDDB	53.3
		Mojave Menodora	CNDDB	97.9
		Robison's monardella	CNDDB	82.2
		San Bernardino milk-vetch	CNDDB	236.9

The 53 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)*

Background information for this species would not change from the previous analysis included in the affected environment of the 2005 WEMO Final EIS (BLM 2005).For a general discussion of this species, please refer to Section 3.3.8.1, pp. 3-184 to 3-185 of the 2005 WEMO Final EIS. The supplemental information presented below is based on the species accounts prepared for the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012) and recent BLM data.

Life History

Alkali mariposa lily grows in seasonally moist alkaline habitats with calcareous sandy soil within Mojavean desert scrub communities (Dudek and ICF International 2012). This species prefers claypans and sand dunes, especially along drainages, in halophytic (associated with saline soils) saltbush scrub (Dudek and ICF International 2012). It has been reported that periodic natural inundation is important to alkali mariposa lily, however, alkali mariposa lily has been reported as absent from areas with surface salts or areas with permanent standing surface water (Dudek and ICF International 2012). This species ranges in elevation from 224 to 5,240 feet (Dudek and ICF International 2012).

Some associated species include saltgrass (*Distichlis spicata*), rushes (*Juncus* spp.), sedges (*Carex* spp.), beardgrass (*Polypogon* sp.), dock (*Rumex* sp.), alkali sacaton (*Sporobolus airoides*), beardless wildrye (*Elymus triticoides*), dwarf checkerbloom (*Sidalcea malviflora*), rabbitbrush (*Chrysothamnus* sp.), Baltic rush (*Juncus balticus*), and yellow sweetclover (*Melilotus indicus*) (Dudek and ICF International 2012).

Population Status in the Planning Area

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 CNDDB identifies approximately 3.3 acres within element occurrences for this species on BLM lands within the subregion Coolgardie (Table 3.4-4).

Regulatory Status

The regulatory status for the alkali mariposa lily has been updated from the 2005 WEMO Final EIS (BLM 2005) to eliminate the California Species of Special Concern status (as described in Section 3.3.8.1, pg. 3-185 of the 2005 WEMO Final EIS) and add a BLM sensitive designation.

Alkali mariposa lily is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "seriously threatened in California, with 20% to 80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The alkali mariposa lily has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The greatest threat to alkali mariposa lily is the lowering of water tables through hydrological alterations and water diversions, which alters the seasonally moist alkaline habitat that this species requires. Other threats include urbanization, grazing, trampling, road construction, dumping, and military operations (NatureServe 2011).

Big Bear Valley woollypod (*Astragalus leucolobus*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Big Bear Valley woollypod is a perennial herb which is endemic (limited) to California (CalFlora 2017). It occurs within Inyo, Kern, Los Angeles, Riverside, San Bernardino, San Benito, San Diego, and Ventura counties (CNPS 2017). This species generally blooms from May through July (CNPS 2017). This species often occurs in rocky areas associated with the following habitat types: lower montane coniferous forest, pebble (pavement) plain, pinyon and juniper woodland, and upper montane coniferous forest (CNPS 2017). This species ranges in elevation

from 1100 to 2885 meters (CNPS 2017). Known from about 35 extant occurrences and about 3500 individuals (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 741 acres within element occurrences for this species on BLM lands within the subregion Rattlesnake Canyon (Table 3.4-4).

Regulatory Status

The Big Bear Valley woollypod is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Big Bear Valley woollypod has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Big Bear Valley woollypod is threatened by development, recreational activities, and vehicles (CNPS 2017).

Barstow Woolly Sunflower *(Eriophyllum mohavense)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.2, pp. 3-185) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Barstow woolly sunflower is in the aster family (Asteraceae) (Jepson Flora Project 2011). It is an annual herb standing approximately 1 to 2.5 centimeters (0.4 to 1 inch) in height that blooms from March to April or May, then goes to fruit in May (CNPS 2011; Jepson Flora Project 2011; NatureServe 2011). Plants tend to be clumped together. As an annual, germination and establishment of this species depends on the amount and timing of winter and spring rains. There is no information available regarding pollinators, seed dispersal, seed germination, or seedling establishment.

Barstow woolly sunflower prefers sandy or rocky areas within chenopod scrub, Mojavean desert scrub, creosote bush scrub, and also occurs on playas (NatureServe 2011; CNPS 2011; Jepson Flora Project 2011). This species prefers bare areas with little soil that frequently contain a shallow subsurface caliche layer (BLM 2005).

Population Status in the Planning Area

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 CNDDB occurrences are in the planning area (CDFW 2012b; see Figure SP-P7 in Appendix B). In 2006, there were approximately 10,600 known Barstow woolly sunflower individuals (NatureServe 2011). Population trends for this species are unknown.

The CNDDB 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.

Regulatory Status

Barstow woolly sunflower is not Federally or state listed, but is a BLM sensitive species. Barstow woolly sunflower has a CRPR of 1B.2. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .2 are “seriously threatened in California, with 20% to 80% of occurrences threatened/moderate degree and immediacy of threat” (CNPS 2011). The Barstow woolly sunflower has a California Heritage Element Ranking of S2, indicating that it is “imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province” (CDFW 2012b).

Threats

Threats to Barstow woolly sunflower include energy and subdivision development, sheep grazing, off-road vehicle use, highway and road improvements and building, mining, dumping, and pipeline construction (NatureServe 2011; CNPS 2011). Of these threats, those of primary concern include energy development, sheep grazing, off-road vehicles, and highway improvements (NatureServe 2011). According to NatureServe (2010), several Barstow woolly sunflower sites may be extirpated, but their status has not been reported to the CNDDB. Currently, only one CNDDB occurrence is recorded as possibly extirpated (CDFW 2012b).

California alkali grass (*Puccinellia simplex*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The California alkali grass is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Lake, Los Angeles, Madera, Merced, Napa, San Bernardino, Santa Clara, Santa Cruz, San Luis Obispo,

Solano, Stanislaus, Tulare, and Yolo counties (CNPS 2017). This species generally blooms March through May (CNPS 2017). This species occurs in alkaline, vernally mesic sinks, flats, and lake margins associated with the following habitat types: chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools (CNPS 2017). This species ranges in elevation from 2 to 930 meters (CNPS 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 139 acres within element occurrences for this species on BLM lands within the subregion Coolgardie (Table 3.4-4).

Regulatory Status

The California alkali grass is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The California alkali grass has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The California alkali grass is threatened by hydrological alterations, urbanization, agricultural conversion, development, and habitat fragmentation, disturbance, alteration, and loss; resulting in extirpation of some occurrences (CNPS 2017). This species is also possibly threatened by solar energy development, grazing and proximity to roads (CNPS 2017).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The chaparral sand-verbena is an annual herb which is not endemic (limited) to California (CalFlora 2017). It occurs within Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties in California as well as in Arizona and Baja California (CNPS 2017). This species generally blooms from March through September (CNPS 2017), with some blooming as early as January. This species occurs in sandy areas associated with the following habitat types: chaparral, coastal scrub, and desert dunes. (CNPS 2017). This species ranges in elevation from 75 to 1600 meters (CNPS 2017). Known from around 80 occurrences in California (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 1 acre within element occurrences for this species on BLM lands within the subregion Harper Lake (Table 3.4-4).

Regulatory Status

The chaparral sand-verbena is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.1 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The chaparral sand-verbena has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The chaparral sand-verbena is threatened by non-native plants, alteration of fire regimes, road maintenance, flood control activities, vehicles, and development (CNPS 2017).

Charlotte's Phacelia *(Phacelia nashiana)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.4, pp. 3-186 and 3-187) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Charlotte's phacelia is an annual herb in the borage or waterleaf family (Boraginaceae) that is endemic to California. Charlotte's phacelia is typically 3 to 18 centimeters (1.2 to 7.1 inches) tall (Jepson Flora Project 2011). Flowering periods have been variously reported between March and June and Charlotte's phacelia can be found in flower by late March at lower elevations (White 2006a; CCH 2011). However, specimens collected by Chester, Kay, and Madore from Borrego Palm Canyon were also flowering in February (CCH 2011).

Some *Phacelia* species, such as Parry's phacelia, are fire-adapted, but it is unknown whether Charlotte's phacelia has any similar adaptation trigger. The habitats occupied by Charlotte's phacelia are frequently open and sparse, and the elevation ranges are higher than other *Phacelia* species, which could suggest that a similar, fire-adapted lineage is not likely (White 2006a). Pollination vectors and seed dispersal remain unknown for the species. Population data collected in a few known locations over time appear to fluctuate widely (CDFW 2012b), and hydrology could be key in both distribution and population size.

Population Status within the Planning Area

Based on the evident taxonomic confusion described in Appendix B, 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 CNDDB 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).

Regulatory Status

Charlotte's phacelia is not Federally or state listed, but is a BLM sensitive species. Charlotte's phacelia has a CRPR of 1B.2. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "seriously threatened in California, with 20% to 80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Barstow woolly sunflower has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

Impacts to Charlotte's phacelia from grazing and off-road vehicles are the most frequently noted threats in the CNDDB records (CDFW 2012b). Trampling and collecting by hikers were also listed as threats to populations that occur along trails and within parks and recreational areas. Mining activities were noted as threats in a few locations, and activities and/or expansion of facilities at China Lake Naval Air Weapons Center could also pose a threat to populations near Volcano Peak outside of the planning area and Indian Wells within the planning area.

Chimney Creek nemacladus (*Nemacladus calcaratus*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Chimney Creek nemacladus is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Inyo, and Tulare counties (CNPS 2017). This species generally blooms May through June (CNPS 2017). This species occurs in granitic flats associated with the following habitat types: pinyon and juniper woodland (CNPS 2017). This species ranges in elevation from 1900 to 2100 meters (CNPS 2017). This species is thus far known only from three specimens found in the Chimney Creek area in Tulare County at the southern end of the Pacific Crest (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 6 acres within element occurrences for this species on BLM lands within the subregion Sierra (Table 3.4-4).

Regulatory Status

The Chimney Creek nemacladus is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .2 are “fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat” (CNPS 2011). The Chimney Creek nemacladus has a California Heritage Element Ranking of S1, indicating that it is “critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province” (CDFW 2012b).

Threats

The Chimney Creek nemacladus is possibly threatened by foot traffic and grazing (CNPS 2017).

Clokey's Cryptantha *(Cryptantha clokeyi)*

Life History

Clokey’s cryptantha is an annual herb in the borage or waterleaf family (Boraginaceae) that is endemic to California. Clokey’s cryptantha is typically 8 to 15 centimeters (3.1 to 5.9 inches) tall (Jepson Flora Project 2013). Flowering period is from April to May (Jepson Flora Project 2013).

Clokey’s cryptantha is found on slopes and ridge crests. Substrates may be sandy, rocky, or gravelly (CNPS 2013; Jepson Flora Project 2013). This species is found in desert woodland vegetation communities. The elevation range of Clokey’s cryptantha is 3,445 to 5,413 feet amsl (Jepson Flora Project 2013).

Population Status in the Planning Area

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 CNDDB 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.

Regulatory Status

Clokey's cryptantha is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Clokey's cryptantha has a CRPR of 1B.2 (CNPS 2013). CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "seriously threatened in California, with 20% to 80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). Clokey's cryptantha has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

Clokey's cryptantha is threatened by military activities and alteration of fire regimes (CNPS 2013).

Creamy blazing star (*Mentzelia tridentata*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The creamy blazing star is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Imperial, Inyo, Kern, Riverside, San Bernardino, and San Diego counties (CNPS 2017). This species generally blooms from March through May (CNPS 2017). This species occurs in rocky, gravely, and sandy areas associated with the following habitat types: Mojavean desert scrub (CNPS 2017). This species ranges in elevation from 700 to 1175 meters (CNPS 2017). Only 12 specimens are currently known and all other site locations are considered historic since they are from over 20 years ago (NatureServe 2017). Likely range-wide population is less than 1,000 individuals, though there are no current counts (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 5,734 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Regulatory Status

The creamy blazing star is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). The creamy blazing star has a California Heritage Element Ranking of S3, indicating that it is "vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation" (CDFW 2012b).

Threats

The creamy blazing star is threatened by vehicles, mining, and grazing (CNPS 2017).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The curved-pod milk-vetch is an annual herb which is not endemic (limited) to California (CalFlora 2017). It occurs within Inyo County in California as well as in Nevada (CNPS 2017). This species generally blooms from April through June (CNPS 2017). This species often occurs in carbonate areas associated with the following habitat types: Joshua tree woodland and Mojavean desert scrub (CNPS 2017). This species ranges in elevation from 1250 to 1620 meters (CNPS 2017). Known only from the Charleston Mountains of southern Nevada and one occurrence in California where it was rediscovered in 2001 (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 182 acres within element occurrences for this species on BLM lands within the subregion Darwin (Table 3.4-4).

Regulatory Status

The curved-pod milk-vetch is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.1 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The curved-pod milk-vetch has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

The curved-pod milk-vetch is potentially threatened by mining (CNPS 2017).

Cushenbury Buckwheat *(Eriogonum ovalifolium var. vineum)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.3, pp. 3-186) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Cushenbury buckwheat is in the buckwheat family (Polygonaceae) (Jepson Flora Project 2011). It is a mound-forming perennial herb approximately 1.5 to 2.5 decimeters (5.9 to 9.8 inches) in diameter (Sanders 2003).

A study of the Cushenbury buckwheat's reproduction patterns found it to be an outcrossed species with high levels of diversity, low levels of inbreeding among maternal individuals, and selection against homozygous offspring (Neel and others 2001). The main flowering period is May and June, and fruits ripen in about July and prepare for germination during any summer rains in August and September (Sanders 2003). There can also be later flowering in September. It is probably pollinated by small insects and possibly by generalist flower visitors rather than a specialist (Sanders 2003). A personal communication to Sanders (2003) by Morita indicated that nearly 100 insect species visited flowers, including potential pollinators and plant feeders. Insect taxa visiting flowers included many flies (particularly tachinids), bee-flies (Bombylidae), and smaller species such as chloropids (Sanders 2003). A reintroduction study onto a disturbed site by Mistretta and White (2001) showed about 77% survival from 1991 to 1998 and successful reproduction within 6.6 feet of planting areas. Mistretta and White (2001) suggested that Cushenbury buckwheat does not depend on specialized pollinators or soil microorganisms due to the success of the species at the disturbed site, as well as in botanical gardens. Short dispersals likely are wind-aided, with the dried tepals (a division of the perianth where the petals and sepals are indistinguishable) acting as wings (Sanders 2003). Long-distance seed dispersal by this species has not been directly studied, but buckwheat seeds are thought to be dispersed by birds; however, there is no evidence of long-distance dispersal by Cushenbury buckwheat given its restricted distribution (Sanders 2003). As noted previously, Mistretta and White (2001) documented progeny within 6.6 feet of planting areas and no individuals were found more than 98 feet from planting areas.

The species *Eriogonum ovalifolium* is not well adapted to competing for light due to its low stature, but it competes well on sites with moisture and nutrient deficiencies, wind, and winter cold due to its compact "cushion" habit (Sanders 2003). The dense covering wool on its leaves, which

reduces water loss, indicates that moisture and light are not controlling factors for this species. Tall, fast-growing species that may out compete *Eriogonum ovalifolium* for light do not grow well on limestone sites with nutrient deficiencies and high pH, which interferes with mineral uptake (Sanders 2003).

Cushenbury buckwheat does not appear to tolerate high or continuing levels of anthropogenic or natural disturbance (e.g., washes and canyon bottoms), but has been observed colonizing abandoned haul roads (Sanders 2003). Mistretta and White (2001) were able to successfully reintroduce it to a barren cut slope above a quarry haul road where no habitat enhancements were made other than irrigation the first summer and fall after planting and use of the potting soil mix surrounding the roots of the plantings.

Cushenbury buckwheat is closely associated with carbonate substrates on stable slopes with bedrock outcrops and elevations between about 4,600 and 7,900 feet (Sanders 2003; USFWS 2009d; CDFW 2012b). It has never been found away from carbonate substrates and appears to be more closely associated with limestone than dolomite, but this preference needs confirmation (Sanders 2003). General vegetation communities associated with the species are pinyon-juniper woodland, Joshua tree woodland, and Mojavean desert scrub (CNPS 2011; CDFW 2012b). Sanders (2003) notes that it also has been observed in Jeffrey pine-western juniper woodland. It occurs in open areas on gentle to steep slopes with north or west aspects, little accumulation of organic material, open canopy cover (generally less than 15%), and powdery fine soils with rock cover exceeding 50% (USFWS 2009d). Although it may be locally common, individuals tend to occur in scattered distributions (Sanders 2003), and only about 25% of less than 20 occurrence locations known in 1984 supported more than 1,000 individuals (USFWS 2009d).

Population Status in the Planning Area

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; see Figure SP-P9 in Appendix B).

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 CNDDB 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.

Regulatory Status

Cushenbury buckwheat is Federally listed as endangered but is not state listed. A recovery plan addresses this species: *San Bernardino Mountains Carbonate Plants Draft Recovery Plan* (USFWS 1997b). Cushenbury buckwheat has a CRPR of 1B.1. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California, with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Cushenbury buckwheat has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

The main threat to Cushenbury buckwheat when it was Federally listed in 1994 was mining (USFWS 2009d). Other threats at the time included OHV use, a hydroelectric project, and a 115-kilovolt power line proposed for construction through Cushenbury Canyon (USFWS 2009d). About 75% of occupied habitat was under threat as a result of being under claim for mining, in private ownership and subject to mining, or as a result of other disturbances (USFWS 2009d). Mining continues to be the primary threat to the species, but other threats include energy development and OHV use, which can result in direct ground disturbance and dust generation (USFWS 2009d). Further, dispersed target shooting, dispersed camping areas, and fuelwood collection can result in trampling of Cushenbury buckwheat and impact its habitat through ground disturbance or dust creation (USFWS 2009d). Padgett and others (2007) conducted a study examining dust deposition from mining activities and potential effects to Cushenbury buckwheat and other carbonate plant species. This study documented lower photosynthetic activity and less growth for plants near mining activities due to dust. Fire suppression activities can result in ground disturbance through fire line construction, retardant and water drops, and establishment of fire camps (USFWS 2009d). Artificial lighting is also cited as a potential threat due to potential impacts on the behavior of pollinators or seed dispersers, or by altering photoperiod responses (USFWS 2009d).

The specific potential effects of climate change on Cushenbury buckwheat are unknown, but if climate change caused a shift to higher elevations due to warmer and drier conditions, as has occurred with other plant species on the Santa Rosa Mountains of Southern California (Kelley and Goulden 2008), this endemic species could be concentrated in a smaller area and more vulnerable to extinction (USFWS 2009d).

Cushenbury Milk-vetch *(Astragalus albens)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.3, pp. 3-186) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Cushenbury milk-vetch is a member of the legume family (Fabaceae). It is a prostrate annual or perennial plant with stems approximately 2 to 30 centimeters (0.8 to 12 inches) in length (MacKay 2003). Individual plants may be annual or perennial (MacKay 2003; Hickman 1996), but otherwise little is known of its natural history, including reproduction (MacKay 2003). Flowering occurs from late March to mid-June and pods ripen as early as May (MacKay 2003). It is probably pollinated by small bees given flower shape and color (MacKay 2003; USFWS 2009e). It is unknown whether plants flower and fruit in their first year, how long they live, or what conditions cause them to be annuals or perennials (MacKay 2003). They reproduce by seed and seeds have been shown to have high viability (MacKay 2003). Seeds require scarification (cutting of the outer seed coat) to germinate and may remain dormant in the soil during drought years (MacKay 2003). The length of time seeds can remain viable, the characteristics of seed banks (e.g., size, kinds of seeds), and the type and extent of seed predation and/or dispersal are unknown (MacKay 2003). However, populations increase in response to rainy seasons after droughts, indicating that seed banks persist and seeds remain viable for at least several years (MacKay 2003).

Other than their association with carbonate soils and some other habitat features such as canopy, litter, and slope described in Habitat Requirements, little is known of the life history and ecological relationships of Cushenbury milk-vetch. Pollinators are probably small bees and seeds appear to have high viability and resistance to drought (MacKay 2003). Dispersal mechanisms are unknown. Of particular interest is the factor(s) related to whether individuals are annual or perennial. A factor potentially related to conservation and management of the species is its apparent ability to colonize slightly disturbed sites such as little used roads and long abandoned quarries, but it does not appear to tolerate high or continuing levels of disturbance (MacKay 2003).

Cushenbury milk-vetch 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). General vegetation communities associated with the species are pinyon-juniper woodland, Joshua tree woodland, and Mojave desert scrub (CNPS 2011). Most occurrences are between 5,000 and 6,600 feet for soils deriving from decomposed limestone (USFWS 2009e). In some cases, the species has been found in carbonate alluvium that was deposited over granitic rocks or has fallen into other soils as a result of a debris slide (MacKay 2003).

Population Status in the Planning Area

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 CNDDB 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 CNDDB 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.

Regulatory Status

Cushenbury milk-vetch is Federally listed as endangered but is not state listed. Critical habitat was designated on December 24, 2002 (67 FR 78570–78610). A recovery plan addresses this species, *San Bernardino Mountains Carbonate Plants Draft Recovery Plan* (USFWS 1997b). Cushenbury milk-vetch has a CRPR of 1B.1. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .1 are “seriously threatened in California, with over 80% of occurrences threatened/high degree and immediacy of threat” (CNPS 2011). The Cushenbury milk-vetch has a California Heritage Element Ranking of S1.1, indicating that it is “critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province” (CDFW 2012b).

Threats

The main threat to Cushenbury milk-vetch when it was Federally listed in 1994 was mining (USFWS 2009e). Other threats at the time included OHV use, a hydroelectric project, and a 115-kilovolt power line proposed for construction through Cushenbury Canyon (USFWS 2009e). About 97% of occupied habitat was under threat as a result of being under claim for mining, in private ownership and subject to mining, or as a result of other disturbances (USFWS 200e). Mining continues to be the primary threat to the species, but other threats include energy development and OHV use, which can result in direct ground disturbance and dust generation (USFWS 2009e). Further, dispersed target shooting, dispersed camping areas, and fuel wood collection can result in trampling of Cushenbury milk-vetch and impact its habitat through ground disturbance or dust creation (USFWS 2009e). Dust can reduce plant viability by altering soil chemistry and light penetration into the seed banks (USFWS 2009e). Fire suppression activities can result in ground disturbance through fire line construction, retardant and water drops, and establishment of fire camps (USFWS 2009e). Artificial lighting is also cited as a potential threat

due to potential impacts on the behavior of pollinators or seed dispersers, or by altering photoperiod responses (USFWS 2009e).

The specific potential effects of climate change on Cushenbury milk-vetch are unknown, but if climate change caused a shift to higher elevations due to warmer and drier conditions, as has occurred with other plant species on the Santa Rosa Mountains of Southern California (Kelley and Goulden 2008), this endemic species could be concentrated in a smaller area and more vulnerable to extinction (USFWS 2009e).

Cushenbury Oxytheca *(Acanthoscyphus parishii var. goodmaniana)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.3, pp. 3-186) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Cushenbury oxytheca is a small annual plant approximately 0.5 to 3 decimeters (2 to 12 inches) in size that germinates in late fall, producing a relatively long taproot and basal rosette of leaves that remain until the inflorescence develops and flowers bloom from May to October (Sanders 2007). Observations suggest that it is pollinated by generalist insects, such as small flies and small beetles (S. Morita, cited in Sanders 2007). Little is known about seed bank, seedling establishment, or population structure (USFWS 2009f).

Other than Cushenbury oxytheca's association with carbonate soils, little is known of the life history and ecological relationships of this species. What is known of its life history is based on personal observations and museum records; little information has been published on the species (Sanders 2007). Gonella and Neel (1995) noted its presence/absence on plots in relation to Cushenbury buckwheat and Cushenbury milk-vetch; generally is does not co-occur with these two species.

Cushenbury oxytheca is an annual herb that generally grows on limestone or a mixture of limestone and dolomite soils. This species is most commonly found on talus slopes within pinyon and juniper woodland (Hickman 1996, p. 886; CNPS 2011; CDFW 2012b; USFWS 2009f). Slope where it occurs are usually steep and almost always on loose scree or talus (Sanders 2007). Habitat preferences include an open canopy structure with little or no accumulation of organic material at the soil surface.

Dominant species within pinyon and juniper woodland include single-leaf pinyon pine (*Pinus monophylla*), Utah juniper (*Juniperus osteosperma*), and more rarely California juniper and western juniper (*Juniperus occidentalis*). Understory species within pinyon and juniper woodland are more variable, but may include mountain-mahogany (*Cercocarpus ledifolius*), Mormon tea (*Ephedra viridis*), Mojave yucca (*Yucca schidigera*), Joshua tree, and brittlebush. Cushenbury oxtheca co-occurs with another carbonate endemic, Parish's daisy (*Erigeron parishii*). Its presence, however, appears to be negatively related to at least two other carbonate soils species that tend to occur on stable slopes. Gonella and Neel (1995) never found Cushenbury oxytheca on sample plots centered on Cushenbury milk-vetch (*Astragalus albens*), but it was fairly regularly found on plots without the milk-vetch. Cushenbury milk-vetch is a species typical of stable, often bedrock, slopes. Cushenbury oxytheca also appears to be negatively correlated with the presence

of Cushenbury buckwheat (*Eriogonum ovalifolium* var. *vineum*). However, later surveys conducted by Rancho Santa Ana Botanic Garden for the USFS did find Cushenbury oxytheca growing with Cushenbury milk-vetch and Cushenbury buckwheat in some areas (V. Sosa, cited in Sanders 2007).

Population Status in the Planning Area

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 CNDDB 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.

Regulatory Status

Cushenbury oxytheca is Federally listed as endangered but is not state listed. Critical habitat was designated on December 24, 2002 (67 FR 78570–78610). A recovery plan addresses this species: *San Bernardino Mountains Carbonate Plants Draft Recovery Plan* (USFWS 1997b). Cushenbury oxytheca has a CRPR of 1B.1. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California, with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Cushenbury oxytheca has a California Heritage Element Ranking of S1.1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

According to a variety of sources, the primary threat to Cushenbury oxytheca is limestone mining (CDFW 2012b; Sanders 2007; Hickman 1996). Besides direct impacts, dust and artificial lighting can affect the species through dust impacts on soil chemistry and potential lighting impacts on seedbanks and pollinators and seed dispersers (USFWS 2009f). The USFWS (2009f) reports that 79% of known occupied habitat is currently subject to mining claims. Additional threats are non-native plant encroachment, power line maintenance, a hydroelectric project, and OHVs (CNPS 2011; USFWS 2009f).

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

Life History

Death Valley sandpaper-plant is a perennial subshrub in the loasa family (Loasaceae) that is native and endemic to California. Death Valley sandpaper-plant is typically less than 100 centimeters (39.4 inches) tall (Jepson Flora Project 2013) and flowers from May to June and September to November (Calflora 2013; Jepson Flora Project 2013).

Death Valley sandpaper-plant is found on dunes and in sandy washes (Jepson 2013); and within sagebrush scrub, Joshua tree woodlands, and pinyon-juniper woodlands in the vicinity of Panamint and Death Valleys. Substrates are sandy (CNPS 2013). This species is found in desert dunes and Mojavean desert scrub vegetation communities (CNPS 2013). Elevation range reported as 0 to 3,937 (Jepson 2013) and 853 to 4,741 feet amsl (CNPS 2013).

Population Status in the Planning Area

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 CNDDB 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.

Regulatory Status

Death Valley sandpaper-plant is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Death Valley sandpaper-plant has a CRPR of 1B.3 (CNPS 2013). CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .3 are “not very threatened in California, with less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known” (CNPS 2011).The Death Valley sandpaper-plant has a California Heritage Element Ranking of S2.3, indicating that it is “imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province” (CDFW 2012b).

Threats

Death Valley sandpaper-plant has no known threats (CNPS 2013).

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

Life History

Dedecker's clover is a perennial herb in the legume family (Fabaceae) that is endemic to California. Flowering period is from May to July (Calflora 2013).

Dedecker's clover is found on alpine crests and in rock crevices (Jepson 2013). Substrates are granitic and rocky (CNPS 2013). This species is found in lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, and upper montane coniferous forest vegetation communities (CNPS 2013). Elevation range reported as 6,890 to 11,483 feet amsl (CNPS 2013).

Population Status in the Planning Area

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 CNDDB identifies approximately 29 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Regulatory Status

Dedecker's clover is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Dedecker's clover has a CRPR of 1B.3 (CNPS 2013). CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California, with less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). Dedecker's clover has a California Heritage Element Ranking of S2.3, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

Dedecker's clover is possibly threatened by mining and grazing (CNPS 2013).

Desert Cymopterus *(Cymopterus deserticola)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.6, pp. 3-187 and 3-188) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Desert cymopterus is in the carrot family (Apiaceae) (Jepson Flora Project 2011). Desert cymopterus is a tap-rooted perennial about 15 centimeters (5.9 inches) in height (Jepson Flora Project 2011). As a taprooted perennial, desert cymopterus does not appear to reproduce vegetatively, but rather reproduces via seeds. Seedling establishment has not been reported for this species. Establishment of new individuals in a population may be infrequent given that many reported desert cymopterus populations are highly dispersed and low density (NatureServe 2011).

Depending on the year, desert cymopterus flowers between early March and mid-May, and may not flower at all in unfavorable years. Poor seed production or seed survival may be a factor in infrequent establishment observed in field studies. Fruits of desert cymopterus are fairly large and do not seem well adapted for dispersal over long distances. Fruits generally seem to fall relatively close to the parent plant. However, the fruits have a marginal wing that may facilitate dispersal by wind. In addition, the fruits mature late in the season, typically after the end of the rainy season, so they remain dry and light. Therefore, given that wind is relatively common in the open sandy habitats where this species is found, it could easily push the fruits along the soil surface, although the fruits probably don't become airborne (NatureServe 2011).

Because of the annual variability in rainfall, the underground parts of herbaceous desert perennials, including desert cymopterus, must be able to maintain the populations over time with frequent years of reproductive failure; in addition, they must be able to survive prolonged periods of low soil moisture and entire years without aboveground photosynthetic activity (NatureServe 2011). In dry years, desert cymopterus may not produce flowers or fruit and may even remain dormant underground during the usual growing season. In very wet years, however, they may produce flowers and fruits abundantly.

Population sizes appear to vary greatly from year to year, evidently in response to the amount and timing of winter and spring rainfall, making it difficult to determine population trends (NatureServe 2011).

Desert cymopterus grows in Joshua tree woodland, saltbush scrub, and Mojavean desert scrub communities on loose, sandy soils. The sandy soils required by this species occur on alluvial fans and basins, stabilized sand fields, and occasionally sandy slopes of desert dry lake basins (69 FR 64884–64889).

Population Status in the Planning Area

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 many 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 CNDDB (CDFW 2012b). There are three CNDDB 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 CNDDB 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.

Regulatory Status

Desert cymopterus (*Cymopterus deserticola*) is not Federally or state listed, but is a BLM sensitive species. Desert cymopterus has a CRPR of 1B.2. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .2 are “fairly threatened in California, with 20% to 80% of occurrences threatened/moderate degree and immediacy of threat” (CNPS 2011). Desert cymopterus has a California Heritage Element Ranking of S2, indicating that it is “imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province” (CDFW 2012b).

Threats

Desert cymopterus is potentially threatened by habitat alteration and destruction resulting from military activities on Edwards Air Force Base, the expansion of Fort Irwin, oil and gas development, utility construction, renewable energy development, off-road vehicle use, sheep grazing, Land Tenure Adjustment, and urban development (69 FR 64884–64889; CNPS 2011). However, according to the proposed rule (69 FR 64884–64889), the magnitude and relative

importance of most of these potential threats were unknown. Grazing by native and non-native herbivores—presumably including mammals, insects, and desert tortoise—is also a threat to this species. This may contribute to the low density, dispersed nature of the majority of reported desert cymopterus populations by limiting the plants' reproductive potential and reducing their vigor (Bagley 2006).

Gilman's goldenbush (*Ericameria gilmanii*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Gilman's goldenbush is a perennial shrub which is endemic (limited) to California (CalFlora 2017). It occurs within Inyo, Kern, and Tulare counties (CNPS 2017). This species generally blooms from August through September (CNPS 2017). This species occurs in carbonate or granitic areas associated with the following habitat types: subalpine coniferous forest and upper montane coniferous forest. This species ranges in elevation from 2100 to 3400 meters (CNPS 2017). There are six known occurrences for this species and only one has been seen in the past 20 years (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 5 acres within element occurrences for this species on BLM lands within the subregion Sierra (Table 3.4-4).

Regulatory Status

The Gilman's goldenbush is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). The Gilman's goldenbush has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

There are six historic populations of Gilman's goldenbush known, but only 1 has been seen in the past 20 years. This single site is on USFWS lands and seems unthreatened at this time NatureServe 2017). Only 11 plants occur at this site (NatureServe 2017), so low population size is a concern.

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The grey-leaved violet is a perennial herb which is endemic (limited) to California (CalFlora 2017). It occurs within Fresno, Inyo, Kern, Los Angeles, Madera, San Bernardino, Tulare, and Ventura counties (CNPS 2017). This species generally blooms April through July (CNPS 2017). This species occurs in the following habitat types: meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest (CNPS 2017). This species ranges in elevation from 1500 to 3400 meters (CNPS 2017). This species is known from just over 50 populations (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 30 acres within element occurrences for this species on BLM lands within the subregion Middle Knob (Table 3.4-4).

Regulatory Status

The grey-leaved violet is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .2 are “fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat” (CNPS 2011). The grey-leaved violet has a California Heritage Element Ranking of S2, indicating that it is “imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province” (CDFW 2012b).

Threats

The grey-leaved violet is threatened by grazing, trampling, and vehicles and possibly threatened by recreational activities (CalFlora 2017). Other threats mentioned include grazing and OHVs (NatureServe 2017).

Hall's Daisy *(Erigeron aequifolius)*

Life History

Hall’s daisy is perennial herb in the sunflower family (Asteraceae) that is endemic to California. Hall’s daisy is typically 10 to 20 centimeters (3.9 to 7.9 inches) tall (Jepson Flora Project 2013). Flowering period is from June to August (Calflora 2013).

Hall's daisy is found on rock ledges and in crevices (Jepson Flora Project 2013). Substrates are granitic and rocky (CNPS 2013). This species is found in broad-leafed upland forest, lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest vegetation communities. The elevation range of Hall's daisy is 4,921 to 8,005 feet amsl (CNPS 2013).

Population Status in the Planning Area

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 CNDDB identifies approximately 65 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Regulatory Status

Hall's daisy is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Hall's daisy has a CRPR of 1B.3 (CNPS 2013). CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California, with less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). Hall's daisy has a California Heritage Element Ranking of S2.3, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

Hall's daisy has no known threats (CNPS 2013).

Harwood's eriastrum (*Eriastrum harwoodii*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Harwood's eriastrum is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Riverside, San Bernardino, and San Diego counties (CNPS 2017). This species generally blooms from March through June (CNPS 2017). This species occurs in desert dunes associated with the following habitat types: desert playa, North American warm desert dunes and sand flats, lower bajada and fan Mojavean-Sonoran desert scrub, and Madrean warm semi-desert wash woodland/scrub (CNPS 2017). This species ranges in elevation from 125 to 915 meters (CNPS 2017).

Population Status in the Planning Area

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 CNDDB 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).

Regulatory Status

The Harwood's eriastrum is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Harwood's eriastrum has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province"(CDFW 2012b).

Threats

The Harwood's eriastrum is potentially impacted by solar energy development by grazing and trampling (CNPS 2017). More likely threats include mining, non-native plant competition, and vehicles (CNPS 2017).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Horn's milk-vetch is an annual herb which is not endemic (limited) to California (CalFlora 2017). It occurs within Inyo, Kern, San Bernardino, and Tulare counties in California as well as Nevada (CNPS 2017). This species generally blooms from May through October (CNPS 2017). This species often occurs along lake margins or alkaline areas associated with the following habitat types: meadows and seeps, and playas (CNPS 2017). This species ranges in elevation from 60 to 850 meters (CNPS 2017). NatureServe currently does not have occurrence data for this species (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 195 acres within element occurrences for this species on BLM lands within the subregion Middle Knob (Table 3.4-4).

Regulatory Status

The Horn's milk-vetch is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.1 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Horn's milk-vetch has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

The Horn's milk-vetch was subject to eradication efforts in early 1900's because it was poisonous to sheep and is now threatened by habitat alteration (CNPS 2017).

Kelso Creek Monkeyflower *(Mimulus shevockii)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.7, pp. 3-188) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Kelso Creek monkeyflower is a tiny ephemeral winter annual herb in the lopseed family *(Phrymaceae*), which was recently segregated from the figwort family (*Scrophulariaceae*) (Jepson Flora Project 2011; Beardsley and Olmstead 2002). Kelso Creek monkeyflower stands approximately 2 to 12 centimeters (0.8 to 4.7 inches) in height (Jepson Flora Project 2011; Elvin 2006). Kelso Creek monkeyflower blooms from March to May (CNPS 2011). It is unknown whether Kelso Creek monkeyflower is self-sterile or self-fertile (Elvin 2006). Given the relative size of its corolla, the nectar guide patterning, and corolla colors, Kelso Creek monkeyflower is probably outcrossing, and is probably pollinated by small solitary native bees; soft-wing flower beetles (*Trichochrous* sp.) have been observed visiting flowers (Fraga 2007).

It fruits from April to June (Fraga 2007). The fruit is a 0.25-inch capsule that contains more than 100 seeds and is dehiscent at the end and along both sutures (Heckard and Bacigalupi 1986). Although not directly observed, water is a likely seed dispersal mechanism since Kelso Creek monkeyflower occurs in washes (Elvin 2006).

The role of the seedbank is probably very important for the long-term survival of populations. It is known from similar annual *Mimulus* species that even in high rainfall years, some fraction of seed stays dormant and remains in the seed bank (Fraga 2007). Kelso Creek monkeyflower does not germinate at all in drought years. The amount and timing of rainfall affect the number of seeds that germinate, the timing of germination, and the size and longevity of desert annuals (Fraga 2007).

Although Kelso Creek monkeyflower is highly restricted in distribution, it appears to be common where it occurs in years of ample rain (Fraga 2007). It does not appear to have very exacting habitat requirements (Fraga 2007), although there appears to be hundreds of acres of apparently suitable habitat that are unoccupied (Heckard and Bacigalupi 1986). In wet years, Kelso Creek

monkeyflower can form carpets on the desert floor, but can be difficult to locate in drier years (CPC 2011).

Kelso Creek monkeyflower hybridizes with its closest relative Tehachapi monkeyflower (*Mimulus androsaceus*) (Audubon 2011; CDFW 2012b). This suggests that the Kelso Creek monkeyflower may have evolved from Cyrus Canyon and spread southward to other locations in the Kern and Kelso Valleys (Audubon 2011).

Kelso Creek monkeyflower occurs predominately in loamy, coarse sands on alluvial fans, dry streamlets, or washes and granitic deposits within Joshua tree or California juniper xeric woodlands (59 FR 50540–50550; Heckard and Bacigalupi 1986). Substrates where Kelso Creek monkeyflower are found are generally granitic or metamorphic, and sandy or gravelly (CNPS 2011). However, the population near Cyrus Flat grows on finer soils developed from metasedimentary rocks (CDFW 2012b; Heckard and Bacigalupi 1986). The California Native Plant Society (CNPS) (2011) reports an elevation range for this species from 800 to 1,340 meters (2,625 to 4,396 feet). However, the CNDDB (CDFW 2012b) includes one occurrence at 4,500 feet. Species strongly associated with Kelso Creek monkeyflower include pygmy poppy (*Canbya candida)*, silver cholla (*Cylindropuntia echinocarpa),* purple sage (*Salvia dorrii*), golden gilia (*Leptosiphon aureus*), Tehachapi monkeyflower, Fremont's monkeyflower (*Mimulus fremontii*), and white burrobrush (*Ambrosia salsola* var. *pentalepis*) (Heckard and Bacigalupi 1986).

Population Status in the Planning Area

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 CNDDB identifies approximately 651 acres of element occurrences for this species on BLM lands within the Jawbone subregion (Table 3.4-4).

Regulatory Status

Kelso Creek monkeyflower (*Mimulus shevockii*) is not Federally or state listed, but is a BLM sensitive species. It was proposed for federal listing in 1994 (59 FR 50540–50550), but the proposal was withdrawn in 1998 when it was determined that the species was not threatened with extinction and therefore did not meet the definition of a threatened or endangered species (63 FR 49065–49075). Kelso Creek monkeyflower has a CRPR of 1B.2. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California, with 20% to 80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Kelso Creek monkeyflower has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

Threats to Kelso Creek monkeyflower have not changed since the 2005 WEMO Final EIS (BLM 2005). The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.7, pp. 3-188) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Kelso Creek monkeyflower is threatened by urbanization, OHV use, agricultural land conversion, road maintenance, cattle grazing, habitat loss from water inundation, fire suppression activities, and competition from non-native species (59 FR 50540–50550; CNPS 2011; NatureServe 2011). The extremely limited distribution of this plant puts it at risk of stochastic extinction events (Elvin 2006).

This species is primarily threatened by the current or potential destruction, modification, or curtailment of its habitat or range. Mobile home and subdivision development and associated grading threaten or have impacted 6 of the 11 occurrences (CDFW 2012b). Cattle grazing, introduction of non-native plant species, and conversion of habitat to orchards have begun to modify the landscape and threaten Kelso Creek monkeyflower occurrences and limited natural habitat (Elvin 2006; CDFW 2012b).

Of the seven occurrences within the planning area, three are entirely on BLM Ridgecrest RA lands, two are partially on BLM Ridgecrest RA lands and partially on private lands, and two are partially on BLM land outside of Ridgecrest RA and partially on private lands (CDFW 2012b). Although occurrences on BLM lands are provided some protection, there are still documented threats to these populations (Elvin 2006). All of the populations on private land are at risk of mobile home or subdivision development. Populations located on BLM lands adjacent to private property are also affected by this threat (Elvin 2006).

The effect that highway and road maintenance has on populations on or adjacent to private property is twofold: improved access has increased development and the additional traffic has created pressure to add or widen roads. At least one population has been bisected by road development. OHV use directly impacts or threatens approximately half of the known occurrences throughout its range (Elvin 2006). At least one population site has been highly disturbed, probably from uncontrolled overgrazing during drought (CDFW 2012b). Water developments and impoundments also potentially threaten this species (Elvin 2006).

Kern Buckwheat *(Eriogonum kennedyi var. pinicola)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.8, pp. 3-189) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Kern buckwheat is a perennial herb in the buckwheat family (Polygonaceae) (CNPS 2011; Reveal 2003). Kern buckwheat stands approximately 0.5 to 1.3 decimeters (2.0 to 5.1 inches) in height (Jepson Flora Project 2011). The species blooms from May to June (CNPS 2011; Jepson Flora Project 2011). The fruit ripens and is dispersed around July. Sexual reproduction in Kern buckwheat is probably both selfing and outcrossing (NatureServe 2011) considering the Federally listed variety *E. k.* var. *austromontanum* produces seeds by self-pollinating and insect-mediated outcrossing (71 FR 67712–67754).

Eriogonum species generally attract small generalist pollinators. Visitors, and potential pollinators, of the species *Eriogonum kennedyi* are small wasps, flies, bees, butterflies, and ants (O'Brien 1980). A small, silvery-white, iridescent butterfly has been observed pollinating this variety (Hare, pers. obs., cited in Sanders and Greene 2006). Kern buckwheat flowers change to red when pollinated suggesting that bees are important pollinators.

Though seed dispersal for this taxon has not been studied, birds may play a role in the dispersal of all *Eriogonum* seeds. Although there is little information available, wind, rain and streams may also act as dispersal agents (Sanders and Greene 2006).

Kern buckwheat appears to share many general ecological characteristics with other varieties of *E. kennedyi*. It occurs in open areas and prefers full sunlight, appearing to be intolerant of extensive shading. Although not well adapted to competing for light, it is very competitive on sites where tall and fast-growing species are excluded by moisture deficiencies, wind, and cold (Walter 1973, cited in Sanders and Greene 2006). Its compact cushion-like habit probably helps to reduce moisture loss (Walter 1973, cited in Sanders and Greene 2006). Therefore, this variety appears to favor sites where moisture stress is combined with high insulation (Sanders and Greene 2006).

Moisture rather than light is probably a controlling factor for Kern buckwheat. The foliage is densely covered with tomentum (wool) that substantially reduces the amount of light that strikes the leaf tissue. Although pubescence may affect photosynthesis, it also forms a layer of dead air at the leaf surface, which can reduce water loss from wind (Johnson 1975, cited in Sanders and Greene 2006).

Kern buckwheat is found in poorly draining depressions in white bentonite clay soils that are derived from volcanic ash (Sanders and Greene 2006). The depressions have pebbles, gravel, and rock cemented into the soil surface that form exposed open flats located on ridge tops and saddles between knolls (Sanders and Greene 2006).

This species occurs in chaparral and pinyon and juniper woodland (CDFW 2012b; CNPS 2011). Associated species include California sagebrush (*Artemisia californica*), Great Basin sagebrush (*Artemisia tridentata*), adobe yampah (*Perideridia pringlei*), fivetooth spineflower (*Chorizanthe watsonii*), and old fallen Jeffrey pines (CDFW 2012b; CCH 2011).

Population Status in the Planning Area

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 CNDDB 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 CNDDB are in the planning area (CDFW 2012b). Two occurrences recorded in the CNDDB 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 CNDDB 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 CNDDB identifies approximately 23 acres of element occurrences for this species on BLM lands within the Middle Knob subregion (Table 3.4-4).

Regulatory Status

Kern buckwheat (*Eriogonum kennedyi* var. *pinicola*) is not Federally or state listed, but is a BLM sensitive species. Kern buckwheat has a CRPR of 1B.1. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California, with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Kern buckwheat has a California Heritage Element Ranking of S1.1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

Current threats to Kern buckwheat are wind energy development on private land and vehicles (CNPS 2011). OHVs have already destroyed plants and habitat in one of the occurrences on BLM land. The highly restricted distribution and small number of remaining plants make this species vulnerable to stochastic extinction (Sanders and Greene 2006).

Approximately half of the 1-acre population on private land on Sweet Ridge was destroyed by the construction of wind energy facilities. Suitable habitat and plants were destroyed with the construction of access roads to newly subdivided lots and the construction of a ramp to a proposed campsite along the Pacific Crest Trail. Illegal grading has resulted in an erosion problem that threatens part of one population (Hare 1995 and Rutherford 1998, cited in Sanders and Greene 2006). Although cattle grazing is not known around the populations now, the area has been grazed in the past (Sanders and Greene 2006).

Based on observations, Kern buckwheat has been unable to recolonize disturbed areas (Hare 1995, cited in Sanders and Greene 2006).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Kern Plateau bird's-beak is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs on the Kern Plateau within Inyo, Kern, and Tulare counties (CNPS 2017). This species generally blooms from July through September, which some blooming taking place as early as May (CNPS 2017). This species occurs in wetlands, and occasionally non-wetlands (CalFlora 2017) associated with the following habitat types: Great Basin scrub, Joshua tree woodland, pinion and juniper woodland, and upper montane coniferous forest (CNPS 2017). This

species ranges in elevation from 1675 to 3000 meters (CNPS 2017). Known from 14 sites in California (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 27 acres within element occurrences for this species on BLM lands within the subregion Sierra (Table 3.4-4).

Regulatory Status

The Kern Plateau bird's-beak is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). The Kern Plateau bird's-beak has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Kern Plateau bird's-beak is potentially impacted by trail maintenance, foot traffic, and OHV use (CNPS 2017).

Kern River evening-primrose (*Camissonia integrifolia*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Kern River evening-primrose is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Kern County (CNPS 2017). This species generally blooms in May but may also bloom in April (CNPS 2017). This species occurs in chaparral (CNPS 2017). This species ranges in elevation from 700 to 1000 meters (CNPS 2017). Known from three occurrences in California (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 12 acres within element occurrences for this species on BLM lands within the subregion Jawbone (Table 3.4-4).

Regulatory Status

The Kern River evening-primrose is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). The Kern River evening-primrose has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Kern River evening-primrose is potentially threatened by road maintenance (CNPS 2017).

Lane Mountain Milk-vetch *(Astragalus jaegerianus)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.9, pp. 3-189 and 3-190) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Lane Mountain milk-vetch is a member of the legume family (Fabaceae). It is a perennial herb approximately 3 to 7 decimeters (11.8 to 27.6 inches) in size (Charis 2002). It flowers in April and May and fruits ripen from the end of April to the end of May (Charis 2002). Work on pollinators indicates the species most likely to be effective pollinators include the megachilid bees *Anthidium dammersi, A. emarginatum,* and *Osmia latisculata* (Hopkins 2005; USFWS 2008c).

Greenhouse studies have shown higher rates of seed production in individuals that are self and cross-pollinated compared with unpollinated individuals, so pollination appears to be important for reproduction by this species (Rundel and others 2005, cited in USFWS 2008c). Genetic studies indicate that Lane Mountain milk-vetch is a facultative outcrosser (i.e., cross-pollinator) that relies more on outcrossing within dense populations than within low-density populations (Walker and Metcalf 2008). Dispersal mechanisms in Lane Mountain milk-vetch are unknown, although Charis (2002) suggests that dispersal may be by gravity, but notes that seeds and pods of other *Astragalus* species are fed upon by various birds, rabbits, and rodents.

Lane Mountain milk-vetch exhibits a relatively low recruitment rate; less than 2% of the 4,888 individuals detected by Charis (2002) were seedlings. Field and greenhouse studies by Rundel and others (2007) found that key factors for seedling growth and survival include the amount, frequency, and timing of precipitation. Generally, seed germination may be high under controlled greenhouse conditions, but much lower in the wild (Rundel and others 2007).

Community structure and the availability of suitable host plants for Lane Mountain milk-vetch appear to be important ecological factors. Charis (2002) found that Lane Mountain milk-vetch occurs in Mojave creosote scrub and Mojave mixed woody scrub with widely scattered Joshua trees. It does not occur in creosote scrub habitat dominated by creosote and white bursage. More

than 99% of mature individuals were found on host plants, and the association with host plants appears to be non-random, with turpentinebroom accounting for about 20% of the host records, and white bursage, Mojave Desert California buckwheat, Cooper's goldenbush, Nevada jointfir, and "dead shrub" accounting for about 10% each (Charis 2002). Some common shrubs, such as creosote bush and white bursage, are used less frequently as host plants in relation to their abundance.

The growth patterns and distribution of Lane Mountain milk-vetch also appear to be related to the availability of moisture. Individuals annually go dormant during the hot, dry summer season and respond with vegetative growth to winter rains, or possibly also in response to temperature and photoperiod (Charis 2002). In very dry years, the species may have little vegetative growth, flowering, or fruiting (Bagley 1989, cited in Charis 2002). The greater presence of Lane Mountain milk-vetch on shallow ridges where soils are thinner and bedrock much closer to the surface, as opposed to deeper alluvial soils, suggests that occupied sites have a better moisture supply (Charis 2002).

Precipitation amounts, timing, and frequency are key factors in seedling growth and survival of Lane Mountain milk-vetch. In the wild, wet years are critical for seedling growth and survival, but invasive species may also proliferate in wet years, and may compete with and promote herbivory of milk-vetch (Rundel and others 2007). Even in a wet year (2004–2005), on a study plot, seedling survival to the following year was only 16% (8 of 49 individuals) (Rundel and others 2007). Rundel and others (2007) suggest that summer rains may be critical for seedling establishment and survival. More recent information indicates that drought over the last decade has had severe adverse effects on Lane Mountain milk-vetch populations, because of low seedling survival and depleted seed banks.

Lane Mountain milk-vetch occurs in Mojave creosote scrub and Mojave mixed woody scrub with widely scattered Joshua trees, and intergrades of the two communities that have relatively high shrub diversity (Charis 2002). The California Native Plant Society (CNPS 2011) also lists Joshua tree woodland as habitat occupied by the species, but the Charis (2002) study indicates that Joshua trees are widely scattered in occupied habitat. The species does not occur in areas dominated by creosote bush and white bursage (Charis 2002). Occupied habitat is characterized by gentle slopes and low ridges 6.5 to 8.8 feet high, with shallow and lighter granitoid soils (Charis 2002). The species' distribution suggests that it may be responding to water supply (Charis 2002). It occurs at elevations of 3,100 to 4,200 feet above MSL (Charis 2002).

Lane Mountain milk-vetch typically occurs in patchy (i.e., clustered) distributions, but also occurs less commonly in distributions of a few scattered individuals over a broader area. It almost always is associated with a host2 shrub, which the Lane Mountain milk-vetch uses as a trellis. Of 4,888 mature plants recorded by Charis (2002), less than 0.5% were found growing alone. The six most frequent host plants accounted for approximately 75% of the records, with turpentinebroom (*Thamnosma montana*) accounting for about 20% of the host records, and white bursage, Eastern Mojave buckwheat (*Eriogonum fasciculatum* ssp. *polifolium*), Cooper's goldenbush (*Ericameria cooperi*), Nevada jointfir (*Ephedra nevadensis*), and "dead shrub" accounting for about 10% each (Charis 2002). Host-specific selection was apparent because some relatively frequent shrubs had extremely low frequencies as hosts, including creosote bush, littleleaf rhatany (*Krameria erecta*), Johnson's indigo bush (*Psorothamnus arborescens* var. *minutifolius*), desert peppergrass (*Lepidium fremontii*), and peach thorn (*Lycium cooperi*).

Population Status in the Planning Area

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 CNDDB includes 22 occurrences in this area (CDFW 2012b).

Within the planning area, the CNDDB 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).

Regulatory Status

Lane Mountain milk-vetch (*Astragalus jaegerianus*) is Federally listed as endangered but is not state listed. The final rule for critical habitat for Lane Mountain milk-vetch was published May 19, 2011 (76 FR 29108–29129). Lane Mountain milk-vetch has a CRPR of 1B.1. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California, with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Lane Mountain milk-vetch has a California Heritage Element Ranking of S1.1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

The main anthropogenic threats to Lane Mountain milk-vetch are surface mining, OHV recreation, and military training activities (USFWS 2008c). The Coolgardie Mesa area has high mineral potential, with several small recreational mining operations that may have cumulative effects (USFWS 2008c). Unauthorized OHV use increased in one portion of the Coolgardie Mesa site in the 2000s, creating a barren area of approximately 20 acres where the species formerly occurred (USFWS 2008c). In the critical habitat rule, the USFWS also acknowledged the potential effects of climate change on Lane Mountain milk-vetch, but there is no information specific to this species indicating what areas may become important in the future in response to climate change (76 FR 29108–29129). The USFWS (2008c) also identifies two other threats to Lane Mountain milk-vetch: wildfires and nonnative species.

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Latimer's woodland-gilia is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Inyo, Kern, Riverside, and San Bernardino (SBD) counties (CNPS 2017). This species generally blooms March through June (CNPS 2017). This species occurs in rocky or sandy, often granitic, soils associated with the following habitat types: chaparral, Mojavean desert scrub, and pinyon and juniper woodland (CNPS 2017). This species ranges in elevation from 400 to 1900 meters (CNPS 2017). This species is known from San Bernardino and Riverside counties

with outlier populations in Kern and Inyo counties. There is a disjunct population in Inyo County, some 120 miles from the other known occurrences (NatureServe 2017). As of 2005, there were 16 occurrences known for this species (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 213 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Regulatory Status

The Latimer's woodland-gilia is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Latimer's woodland-gilia has a California Heritage Element Ranking of S3, indicating that it is "vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation" (CDFW 2012b).

Threats

The Latimer's woodland-gilia is possibly threatened by recreation. (CNPS 2017).

Little San Bernardino Mountains Linanthus *(Linanthus maculates)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.10, pp. 3-190) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Little San Bernardino Mountains linanthus is an annual herb in the phlox (*Polemoniaceae*) family. It is a diminutive, densely hairy, alternate-leaved annual species approximately 1 to 3 centimeters (0.4 to 1.2 inches) in height (Jepson Flora Project 2011; Patterson 1989). It reproduces via seed, but otherwise its ecology has not been well studied. As such, little is known about the plant's pollinator relationships, seed viability, or seed germination (Patterson 1989; Sanders 2006; CVAG 2006). The flower is white with a vermilion spot on each spreading lobe on most individuals, suggesting that the species is almost certainly insect-pollinated (Munz 1974; Sanders 2006). The flowering time for this species is March through May (CNPS 2011). A review of the collections shows that approximately one-third of the specimens were collected in March, two-thirds in April, and only a few in February and May (CCH 2011).

Little San Bernardino Mountains linanthus grows on loose, well-aerated, open sandy benches and flats on the margins of desert washes (Sanders 2006; Jepson Flora Project 2011). This plant is always found in open areas that receive no shade from nearby shrubs and is associated with other small annual species, such as sigmoid threadplant (*Nemacladus sigmoideus*), blushing threadplant

(*N. rubescens*), evening primrose (*Camissonia pallida*), common loeflingia (*Loeflingia squarrosa*), Arizona nest straw (*Filago arizonica*), and Wallace's woolly sunflower (*Eriophyllum wallacei*) (Sanders 2006).

Population Status in the Planning Area

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 CNDDB records 27 occurrences for this species (CDFW 2012b). Of the 15 occurrences documented in the CNDDB 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 CNDDB 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.

Regulatory Status

Little San Bernardino Mountains linanthus (*Linanthus maculatus*) is not Federally or state listed and has no other federal designations (e.g., BLM or USFS sensitive). Little San Bernardino Mountains linanthus has a CRPR of 1B.2. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California, with 20% to 80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). Little San Bernardino Mountains linanthus has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

Little San Bernardino Mountains linanthus is potentially threatened by habitat disturbance and destruction due to urban expansion, OHV use, flood control activities, illegal dumping, and an increase in invasive non-native species (CNPS 2011). The largest populations are adjacent to communities, such as Yucca Valley, Joshua Tree, and Desert Hot Springs, that have grown substantially in the last two decades. Additional development pressures associated with the expansion of these communities could impact core populations (Sanders 2006).

Flood control maintenance activities pose a specific threat to the species as these activities change the hydrological regime and sediment-carrying capacity of flows within wash systems. In particular, flood control activities pose a substantial threat to populations of Little San Bernardino Mountains linanthus in the Whitewater Canyon, Mission Creek, and Dry Morongo Canyon Wash areas (CVAG 2006).

OHV use is a threat to Little San Bernardino Mountains linanthus because the species grows only in desert wash areas, which are favored by OHV users because they are so sparsely vegetated (Sanders 2006).

Mojave Monkeyflower *(Mimulus mohavensis)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.11, pp. 3-190 and 3-191) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Most members of the lopseed family are insect pollinated (Beardsley and Olmstead 2002); and given the showy flowers, Mojave monkeyflower pollinators are probably Hymenoptera (bees, wasps, ants, and sawflies) or Lepidoptera (butterflies and moths). MacKay (2006) hypothesized that the white margin of the corolla reflects ultraviolet light, and the maroon veins extending into this margin act as nectar guides to facilitate pollination.

Small seeds and an annual habit suggest that dispersal of Mojave monkey flower is mostly abiotic (MacKay 2006; NatureServe 2011). For populations located on rocky slopes above washes, it is probable that gravity carries seeds down into the washes and intermittent water flow may carry seeds further down washes. Although biotic vectors of seed transport are unknown, granivorous ants or rodents may transport seeds over short distances and birds may transport seeds longer distances (MacKay 2006).

Although suitable habitat for this species appears to be fairly abundant, it is quite restricted geographically. Population sizes fluctuate substantially from year to year, probably in response to the amount and timing of precipitation; as an annual, germination and establishment are dependent on the timing and amount of spring rains (MacKay 2006; NatureServe 2011). Unknown unusual germination and establishment requirements may account for the considerable variability in population sizes from year to year (MacKay 2006).

This species occurs in Joshua tree woodland and Mojavean desert scrub, specifically creosote bush scrub (MacKay 2006; CNPS 2011). Mojave monkeyflower is associated with the following species or genera, among others: creosote bush, desert senna (*Senna armata*), white burrobrush, ratany (*Krameria erecta* and *K. grayi*), chollas (*Cylindropuntia* spp.), white bursage, prairie-clovers (*Dalea* spp.), catclaw, Bigelow's monkeyflower (*Mimulus bigelovii*), desert bells (*Phacelia campanularia*), desert fivespot (*Eremalche rotundifolia*), spiny hopsage (*Grayia spinosa*), and desert trumpet (*Eriogonum inflatum* var. *inflatum*) (MacKay 2006; CDFW 2012b).

Mojave monkeyflower commonly occurs in areas that are not subject to regular water flow (MacKay 2006). These areas include the gravelly banks of desert washes with granitic soils and rocky slopes above washes, as well as the sandy openings of creosote bush scrub (MacKay 2006).

Population Status in the Planning Area

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 CNDDB occurrence has been possibly extirpated, and the status of 9 of

the 56 total CNDDB occurrences of Mojave monkeyflower in the planning area has not been updated since 1990 (CDFW 2012b; MacKay 2006).

There are a total of 56 CNDDB 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 CNDDB occurrences in the planning area, 47 have been recorded in the CNDDB since 1990 and are presumed extant. One of the major populations of Mojave monkeyflower recorded in the CNDDB 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 CNDDB 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.

Regulatory Status

Mojave monkeyflower is not Federally or state listed, but is a BLM sensitive species. Mojave monkeyflower has a CRPR of 1B.2. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .2 are “fairly endangered in California, with 20%–80% of occurrences threatened/moderate degree and immediacy of threat” (CNPS 2011). Mojave monkeyflower has a California Heritage Element Ranking of S2, indicating that it is considered imperiled in California (CDFW 2012b).

Threats

Threats to Mojave monkeyflower include development, mining, non-native plants, solar and wind energy projects, grazing, vehicles, and road development (CNPS 2011; NatureServe 2011; MacKay 2006). Additional potential threats include pipeline installation and quarries and test pits adjacent to populations (MacKay 2006). Mojave monkeyflower is also under threat by the potential for the BLM to convert land occupied by this species to private lands, which could then be developed (MacKay 2006; CDFW 2012b). The area under consideration for disposal or land exchange is located between Barstow and Victorville (CDFW 2012b).

Because population sizes fluctuate considerably annually in response to environmental conditions, Mojave monkeyflower is susceptible to depletion of the seed bank after a series of drought years. In addition, small population sizes increase the risk of inbreeding, which may result in reduced seed set or reduced seed viability (MacKay 2006).

Mojave Tarplant *(Deinandra mohavensis)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.12, pp. 3-191) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Mojave tarplant is in the sunflower family (Asteraceae) (Jepson Flora Project 2011). The plant was thought to be extinct at one time but was rediscovered in 1994 by A. Sanders in the San Jacinto Mountains, in Riverside County (Sanders and others 1997). Mojave tarplant is an annual plant approximately 1 to 10 decimeters (3.9 to 39 inches) in height. Mojave tarplant and the closely related Red Rock tarplant (*Deinandra arida*) are the only two self-compatible species in the genus *Deinandra* (Tanowitz 1982; Baldwin pers. comm. 1997, cited in Sanders 2006b). This may be the result of genetic drift and/or the relative isolation of these two species, which occur on the edge of the desert as local populations (Sanders 2006b). Pollination studies have not been conducted for this Mojave tarplant; however, Faull (1987) has observed small beetles and honey bees visiting Red Rock tarplant flowers.

Mojave tarplant is known to reproduce easily in cultivation (B. Baldwin, pers. comm. 1998, cited in Sanders 2006a) and at a botanical garden has been known to escape into disturbed places (S. Boyd, pers. comm. 1998, cited in Sanders 2006a).

Mojave tarplant blooms from June through January (CNPS 2011). Flowering peaks between August and October. Once flowering has begun, it continues until the plants begin to senesce. Fruit maturity and dispersal are continuous as well. Seed dispersal vectors have not been reported for this species; however, the seeds are relatively heavy and may just fall to the ground around the source plant. The seeds are not armed with any obvious mechanisms, such as hooks or wings, for long-distance dispersal (Sanders 2006a). Baldwin (pers. comm., cited in Sanders 2006b) reports that *Hemizonia* (now *Deinandra*) ray achenes maintain some degree of dormancy while the disk achenes freely germinate.

Mojave tarplant is associated with seasonally saturated clay or silty soils on gentle slopes or low gradient streams, with few shrubs and trees. These saturated areas are typically dry at the surface but provide a substantial water source at depth through summer (Sanders and others 1997). This species has a discontinuous and possibly relictual distribution (Sanders 2006a), and little is known of its life history and ecological relationships.

The Mojave tarplant occurs in open moist sites in arid regions near the margins of the desert, within chaparral, coastal scrub, and riparian scrub (CNPS 2011; Sanders 2006a). Plants are typically observed at seeps and along grassy swales and intermittent creeks. The most suitable habitat occurs in mountainous areas within microhabitats of low gradient streams and on gentle slopes with few shrubs and trees. This species is associated with clay or silty soils that are saturated with water early in the year. Mojave tarplant prefers areas that are dry at the surface but which have a substantial water source at depth through summer. Dwarfed plants occasionally are found in drier sites near occupied moist areas (Sanders and others 1997). This cycle of early saturation with later desiccation may reduce competition from other plant species; dryness during drought years may further reduce competition (Sanders 2006a).

At the type locality, Mojave tarplant was known to occur along a sandy intermittent creek; however, this habitat is now believed to be atypical and not sufficient to maintain a permanent population. Sanders and others (1997) does note that there are some occurrences of Mojave tarplant associated with sand, where the sand is adjacent to more typical habitat.

Population Status in the Planning Area

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 CNDDB, 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 CNDDB 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.

Regulatory Status

Mojave tarplant (*Deinandra mohavensis*) is not Federally listed, but is California endangered and a BLM sensitive species. Mojave tarplant has a CRPR of 1B.3. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California, with less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). Mojave tarplant has a California Heritage Element Ranking of S2, indicating that it is considered imperiled in California (CDFW 2012b).

Threats

Mojave tarplant is threatened by grazing, recreational activities, development, hydrological alterations, road maintenance, and vehicles (CNPS 2011). The type locality was modified by construction of the Mojave River Forks Dam. Within the planning area cattle grazing occurs at some of the Mojave tarplant occupied areas, and in some areas is locally intense and may pose a threat. However, plants of the genus *Deinandra* may not be palatable to cattle, so grazing may not be a major threat. Trampling by cattle may be a threat around limited watering sources in dry areas (Sanders 2006a).

Muir's tarplant (*Carlquistia muirii*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Muir's tarplant is a perennial rhizomatous herb which is endemic (limited) to California (CalFlora 2017). It occurs within Fresno, Kern, Monterey, and Tulare counties (CNPS 2017). This species generally blooms July through August but may also bloom in October (CNPS 2017). This species occurs in granitic soils associated with the following habitat types: chaparral (montane), lower montane coniferous forest, and upper montane coniferous forest (CNPS 2017). This species ranges in elevation from 755 to 2500 meters (CNPS 2017). Known from fourteen occurrences in California which comprise of approximately 1,600 individuals (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 25 acres within element occurrences for this species on BLM lands within the subregion Sierra (Table 3.4-4).

Regulatory Status

The Muir's tarplant is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat

or no current threats known" (CNPS 2011). The Muir's tarplant has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Muir's tarplant is potentially threatened by recreational activities. (CNPS 2017). Some populations are threatened by road maintenance and timber harvesting (NatureServe 2017).

Nine Mile Canyon Phacelia *(Phacelia novenmillensis)*

Life History

Nine Mile Canyon phacelia is an annual herb in the borage or waterleaf family (Boraginaceae) that is endemic to California. Nine Mile Canyon phacelia is typically 5 to 10 centimeters (2.0 to 3.9 inches) tall (Jepson Flora Project 2013). Flowering period is from May to June (Calflora 2013) or February to June (CNPS 2013).

Nine Mile Canyon phacelia is found in open foothills. Substrates are sandy to gravelly (Jepson Flora Project 2013). This species is found in broad-leafed upland forest, Cismontane woodland, pinyon and juniper woodland, and upper montane coniferous forest vegetation communities (CNPS 2013). Elevation range reported as 5,397 to 8,661 feet amsl (CNPS 2013).

Population Status in the Planning Area

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 CNDDB identifies approximately 246 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Regulatory Status

Nine Mile Canyon phacelia is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Nine Mile Canyon phacelia has a CRPR of 1B.2 (CNPS 2013). CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly endangered in California, with 20%–80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). Nine Mile Canyon phacelia has a California Heritage Element Ranking of S2.2, indicating that it is considered imperiled in California (CDFW 2012b).

Threats

Nine Mile Canyon phacelia is threatened by grazing and recreation (CNPS 2013).

Owens Peak Lomatium *(Lomatium shevockii)*

Life History

Owens Peak lomatium is a perennial herb in the carrot family (Apiaceae) that is endemic to California. Owens Peak lomatium is typically 4 to 12 centimeters (1.6 to 4.7 inches) tall with an elongated taproot (Jepson Flora Project 2013). Flowering period is from April to May (Calflora 2013).

Owens Peak lomatium is found on rocky slopes and talus. Substrates are rocky (Jepson Flora Project 2013). This species is found in lower montane coniferous forest and upper montane coniferous forest vegetation communities (CNPS 2013). Elevation range is 5,807 to 7,218 feet amsl (CNPS 2013) or 7,218 to 8,202 feet amsl (Jepson Flora Project 2013).

Population Status in the Planning Area

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 CNDDB identifies approximately 79 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Regulatory Status

Owens Peak lomatium is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Owens Peak lomatium has a CRPR of 1B.3 (CNPS 2013). CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .3 are “not very threatened in California, with less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known” (CNPS 2011). Owens Peak lomatium has a California Heritage Element Ranking of S2, indicating that it is considered imperiled in California (CDFW 2012b).

Threats

Threats to Owens Peak lomatium are not described (CNPS 2013).

Owens Valley checkerbloom (*Sidalcea covillei*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Owens Valley checkerbloom is a perennial herb which is endemic (limited) to California (CalFlora 2017). It occurs within Inyo County (CNPS 2017). This species generally blooms April through June (CNPS 2017). This species occurs in alkaline, mesic soils associated with the following habitat types: chenopod scrub, and meadows and seeps (CNPS 2017). This species ranges in elevation from 1095 to 1415 meters (CNPS 2017). Several large populations of over 100,000 individuals exist and over 2 million plants were reported in 2004 (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 31,172 acres within element occurrences for this species on BLM lands within the subregion Sierra (Table 3.4-4).

Regulatory Status

The Owens Valley checkerbloom is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.1 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Owens Valley checkerbloom has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Owens Valley checkerbloom is possibly threatened by ground water pumping, ground and surface water diversions, and long-term drought (NatureServe 2017). Other possible threats identified include non-native plants, grazing, and meadow succession (CalFlora 2017).

Pale-yellow layia (*Layia heterotricha*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The pale-yellow layia is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Kern County (CNPS 2017). This species generally blooms from March through June (CNPS 2017). This species occurs in alkaline or clay areas associated with the following habitat types: cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland (CNPS 2017). This species ranges in elevation from 300 to 1705 meters (CNPS 2017). There are 30 recently verified populations of this species identified throughout its range with several thousand individuals in total (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 71 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Regulatory Status

The pale-yellow layia is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.1 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The pale-yellow layia has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The pale-yellow layia is threatened by agricultural conversion and previous construction of San Antonio Reservoir, grazing, non-native plants, and vehicles. It is also potentially threatened by road maintenance and wind energy development (CNPS 2017).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Palmer's mariposa-lily is a perennial bulbiferous herb which is endemic (limited) to California (CalFlora 2017). It occurs within Kern, Los Angeles, Riverside, Santa Barbara, San Bernardino, San Luis Obispo, and Ventura counties (CNPS 2017). This species generally blooms from April through July (CNPS 2017). This species often occurs in mesic areas associated with the following habitat types: chaparral, lower montane coniferous forest, and meadows and seeps (CNPS 2017). This species ranges in elevation from 710 to 2390 meters (CNPS 2017). Known from seven counties and may be declining but field surveys are needed to confirm this determination (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 14,841 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Regulatory Status

The Palmer's mariposa-lily is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Palmer's mariposa-lily has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Palmer's mariposa-lily occurs in wet meadows which are threatened by grazing, recreational activities, non-native species, and many other site specific threats (NatureServe 2017).

Parish's Daisy *(Erigeron parishii)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.3, pp. 3-186) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Parish's daisy is in the Asteraceae family (IPNI 2011). It is an herbaceous, long-lived perennial subshrub approximately 7 to 30 centimeters (3 to 12 inches) in height from its taproot (Mistretta and White 2001; Sanders 2006). It flowers from May through August (CNPS 2011), peaking mid-May to mid-June (Sanders 2006). Based on the conspicuous flowers, pollinators are probably insects and likely include bees, butterflies, and other known pollinators of similar and related species (Sanders 2006). Parish's daisy produces plumed achenes adapted for wind dispersal (Mistretta and White 2001) and does not appear to have a seed dormancy mechanism (Mistretta 1994). Based on observations of seedlings at several sites (Krantz 1979), reproduction is probably primarily by seed rather than vegetatively by rhizomes or stolons. A recent study by Neel and Ellstrand (2001) found no evidence of vegetative reproduction, concluding that the species probably primarily reproduces sexually through outcrossing.

Recent research on allozyme diversity showed that genetic diversity was high (compared to many narrowly endemic plant taxa) and populations were only moderately differentiated, suggesting that gene flow among populations is still high and any recent fragmentation has not yet affected genetic diversity (Neel and Ellstrand 2001).

Parish's daisy occurs in Mojavean desert scrub and pinyon and juniper woodlands (CNPS 2011) and is largely restricted to loose, carbonate alluvium, although it is occasionally found on other rock types (Sanders 2006). Populations of Parish's daisy are most commonly found along washes on canyon bottoms or on loose alluvial deposits on adjacent benches, but they are also occasionally found on steep rocky slopes (Sanders 2006). Based on this species' occurrence on noncarbonate granitic soils, it is possible that the apparent carbonate preference is due to reduced competition from other plants, although reports of this species on noncarbonate soils are few (Sanders 2006). It

has also been observed at sites where soils have been found to be strongly alkaline, implying that the noncarbonated granitic soils may have been influenced in their soil chemistry by adjacent carbonate slopes (Sanders 2006).

Specific plant species associated with Parish's daisy have not been described in the literature, but dominant species within pinyon and juniper woodland where Parish's daisy is typically found include single-leaf pinyon pine, Utah juniper, and more rarely California juniper and western juniper. Understory species within pinyon and juniper woodland are more variable, but may include mountain-mahogany (*Cercocarpus ledifolius*), Mormon tea (*Ephedra viridis*), Mojave yucca, Joshua tree, and brittlebush.

Parish's daisy co-occurs with another carbonate endemic, Cushenbury oxtheca (*Acanthoscyphus parishii var. goodmaniana*). Its presence, however, appears to be negatively related to at least two other carbonate soils species - Cushenbury milk-vetch (*Astragalus albens*), and Cushenbury buckwheat (*Eriogonum ovalifolium* var. *vineum*), which tend to occur on more stable slopes.

Population Status in the Planning Area

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 CNDDB 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).

Regulatory Status

Parish's daisy is Federally listed as threatened, but is not state listed. Critical habitat was designated on December 12, 2002 (67 FR 78570–78610). A recovery plan addresses this species, *San Bernardino Mountains Carbonate Plants Draft Recovery Plan* (USFWS 1997b). As of 2010,

no status changes for Parish's daisy were indicated by USFWS (75 FR 28636–28642). Parish's daisy has a CRPR of 1B.1. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California, with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Parish's daisy has a California Heritage Element Ranking of S2S3, indicating that it is somewhere between "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" and "vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation" (CDFW 2012b).

Threats

The main threat to Parish's daisy is limestone mining because this species is mostly restricted to carbonate deposits (USFWS 2009g). Besides direct impacts, dust and artificial lighting can affect the species through dust impacts on soil chemistry and lighting availability for seeds and the impacts of artificial lighting on growing conditions (USFWS 2009g). Sanders (2006) notes that that after moistening, the mining dust appears to harden into a cement-like coating. Additional threats listed by USFWS and CNPS include energy development projects, OHVs, grazing, fuel-wood collection, fire suppression activities, camping, target shooting, road construction, and residential developments, but these threats are relatively low compared to mining (USFWS 2009g; CNPS 2011).

The specific potential effects of climate change on Parish's daisy are unknown, but if climate change caused a shift to higher elevations due to warmer and drier conditions, as has occurred with other plant species on the Santa Rosa Mountains of Southern California (Kelley and Goulden 2008), this endemic species could be concentrated in a smaller area and more vulnerable to extinction (USFWS 2009g).

Parish's Phacelia *(Phacelia parishii)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.14, pp. 3-192) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Parish's phacelia is a low-growing, annual herb in the borage or waterleaf family (Boraginaceae) ranging in height from 5 to 15 centimeters (0.2 to 0.5 inch) (Jepson Flora Project 2011). The comparatively simple, toothed to shallowly lobed leaves, and the unequal sepal size in fruit distinguish Parish's phacelia from many other phacelias; other species within its range that also have unequal sepals and have much showier flowers. The flowering season for Parish's phacelia is reported as April to July (CNPS 2011; Jepson Flora Project 2011), but all of the California collections have been made between April and May (White 2006b). The Mojave Desert flowering period is earlier than that of the Great Basin, and Smith (1997) reported that the California populations were fruiting by late April; the later dates have generally been for collections made in White Pine County, Nevada, at much higher elevation and latitude than the California occurrences.

Not much is known about the reproductive biology of the species, but it likely depends on wind and rain for seed dispersal. Given its restriction in California to seasonally wet alkaline flats, and its many small seeds, its seed dispersal range is probably quite short, but seeds may occasionally be ingested by shorebirds or picked up with mud on their feet and carried long distances (White 2006b).

Although some precipitation data are known for the Nevada populations of Parish's phacelia (Smith 1997), there is little information on the ecology of the species in California. In Nevada at one of the Pahrump Valley sites, bees are thought to contribute to pollination, and at another Nevada site (Indian Springs Valley), moths are believed to be at least partially involved with pollination (Smith 1997).

Typical habitat for Parish's phacelia includes clay and alkaline soils, and dry lake margins at elevations of 1,772 to 3,937 feet. In California, the species has been documented in central San Bernardino County on playas and valley floors that are relatively unvegetated and have few associated species. Habitats are creosote bush scrub and alkali sinks. According to White (2006b), all the known occurrences of Parish's phacelia in California occur on sparsely vegetated alkaline flats, generally in dry, cracked mud flats of seasonal pools, and growth is apparently controlled by water level as plants may appear within different levels of the pools, depending on the hydrologic conditions and the timing of rainfall. Smith (1997) reports that the species tends to occupy flat, open expanses, but may also occur on gentle slopes.

Population Status in the Planning Area

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 CNDDB (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 CNDDB); 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 CNDDB 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.

Regulatory Status

Parish's phacelia (*Phacelia parishii*) is not Federally or state listed. This species was previously classified as a Category 2 Candidate for Listing under the federal ESA as amended in 1988 (58 FR 51144–51190). Parish's phacelia has a CRPR of 1B.1. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). Parish's phacelia has a California Heritage Element Ranking of S1.1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

The known California populations of Parish's phacelia are confined to a relatively small area, which makes the species vulnerable to extinction. With the exception of the Stewart Valley site, all

occurrences of the species are within the vicinity of the Fort Irwin Military Base and could be extirpated if the populations are disturbed by military exercises, or by the expansion of the current military facilities in the area (White 2006b).

Populations that occur southeast of Coyote Lake in the Fort Irwin area are threatened by tank use and other off-road vehicles (CDFW 2012b). White (2006b) notes that other reports have indicated that access road construction and the establishment of power line corridors could disrupt the local hydrology, and that these potential activities threaten current populations. The BLM's special-status plant management program also lists overgrazing by cattle and horses as a threat to populations in the Barstow area (BLM 2005).

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

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.16, pp. 3-193) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Red Rock poppy is a small annual herb in the poppy family (*Papaveraceae*) that stands approximately 2 to 14 inches tall (BLM 2010b; Jepson Flora Project 2011). It blooms from March to May (CNPS 2011). Red Rock poppy has a relatively large colorful flower, so it is most likely probably insect pollinated. Potential pollinators of Red Rock poppy that have been recorded on Edwards Air Force Base include solitary bees (*Dufourea desertorum, D. malacothricis, D. vernalis*), a hersperapis bee (*Hesperapis parva*), and miner bees (*Perdita carinata, P. inflexa, P. mortuaria, P. mucronata, P. robustula*) (Buchman and others 2010).

Information on the natural history of Red Rock poppy, such as seed germination, and seed dispersal has not been reported. However, it is a desert annual that reproduces by seed. In addition, the soil seed bank is probably important for the long-term survival of populations, as it is for many other desert annuals.

Red Rock poppy is associated with bajadas and alluvial fans, flats, washes, and slopes in Mojavean desert scrub communities on volcanic tuff (CNPS 2011; CDFW 2012b). It has a very limited geographic distribution, and little is known of its life history and ecological relationships. As an annual species the population numbers vary widely from year to year in response to annual rainfall. Plants may not appear at all in low rainfall years (CDFW 2012b).

Red Rock poppy occurs on volcanic tuff in Mojavean desert scrub on desert washes, flats, and slopes (CNPS 2011; CDFW 2012b). It has been recorded on bajadas and alluvial fans, flats, washes, and slopes (CDFW 2012b). The subspecies may be specific to rhyolite tuffs and granitic derived soils (Clark and Faull 1991), but these are common in the area where Red Rock poppy occurs (Sanders and Pitzer 2006). Red Rock poppy has also been reported on sedimentary mounds, limestone, metamorphic rocks, and rocky basalt (CDFW 2012b). Aspects are generally west, southwest, or south (CDFW 2012b). Associated species include a variety of common Mojave desert scrub shrubs and herbs (CDFW 2012b). The subspecies ranges in elevation from 680 to 1,230 meters (2,231 to 4,035 feet) according to CNPS (2011), but one occurrence is at 4,040 feet (CDFW 2012b).

Population Status in the Planning Area

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 CNDDB 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 CNDDB occurrences are in the planning area (CDFW 2012b). There are two historical CNDDB 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 CNDDB 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 CNDDB 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.

Regulatory Status

Red Rock poppy is not Federally or state listed, but is a BLM sensitive species. Red Rock poppy has a CRPR of 1B.2. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly endangered in California, with 20%–80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). Red Rock poppy has a California Heritage Element Ranking of S2.2, indicating that it is considered imperiled in California (CDFW 2012b).

Threats

Red Rock poppy is primarily threatened by OHV activity (CNPS 2011; CDFW 2012b). In Red Rock Canyon State Park, habitat for Red Rock poppy occurs along the main routes of travel (Sampson 2007). OHVs disrupt the surface soil and compact the surface soil and subsoil, leading to soil loss. The most significant long term effect is the accelerated erosion and associated inability of areas subject to heavy OHV use to support natural revegetation. OHV use also directly damages and destroys plants. Plant rehabilitation efforts are often marginally successful or unsuccessful (as cited in Sampson 2007).

Red Rock Canyon monkeyflower (*Erythranthe rhodopetra*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Red Rock Canyon monkeyflower is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Kern County (CNPS 2017). This species generally blooms from March through April (CNPS 2017). This species occurs in sandy areas and canyon washes associated with the following habitat types: Mojavean desert scrub (CNPS 2017). This species ranges in elevation from 610 to 915 meters (CNPS 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 1,680 acres within element occurrences for this species on BLM lands within the subregions Rands and Red Mountain (Table 3.4-4).

Regulatory Status

The Red Rock Canyon monkeyflower is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.1 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). The Red Rock Canyon monkeyflower has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province"(CDFW 2012b).

Threats

The Red Rock Canyon monkeyflower is possibly threatened by mining, vehicles, recreational activities, foot traffic, and non-native plants (CNPS 2017).

Red Rock Tarplant *(Deinandra arida)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.17, pp. 3-193) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

Red Rock tarplant is an annual herb in the sunflower family (Asteraceae) that stands approximately 2 to 8 decimeters (7.9 to 32 inches) in height. Red Rock tarplant blooms from April through November (CNPS 2011). Pollination studies have not been conducted for this species; however, Faull (1987) has observed small beetles and honey bees visiting Red Rock tarplant flowers.

Red Rock tarplant does not appear to reproduce vegetatively, but rather by seeds.

However, seed germination and seedling establishment has not been reported for this species. Baldwin reports that *Hemizonia* (now *Deinandra*) ray achenes maintain some degree of dormancy while the disk achenes freely germinate (Sanders 2006). Red Rock tarplant consistently produces fertile ray achenes (but few to zero fertile disk achenes). Sanders (2006) suggests that the ray achenes could contribute to the persistence of a Red Rock tarplant seed bank through difficult climatic cycles vegetatively.

Red Rock tarplant and Mojave tarplant (*Deinandra mohavensis*) are the only two self-compatible species of *Hemizonia* (now *Deinandra*) (Tanowitz 1982; Sanders 2006). This may be the result of genetic drift and/or the relative isolation of these two species, which occur on the edge of the desert as local populations (Sanders 2006).

Red Rock tarplant grows in Mojavean desert scrub communities on clay soils and volcanic tuff (CNPS 2011). In general, this species is associated with seeps and seasonally moist substrates along ephemeral streams (sandy and gravelly washes), low ridges, and road shoulders (CDFW 2012b). Faull (1987) found that Red Rock tarplant habitat consists of the following:

1. Sandy to gravelly ephemeral alluvial washes, sometimes exhibiting surface platey structure;
2. Moist alkaline fringes of seeps and springs along alluvial flats and washes;
3. Relatively shallow, dry, sandy alluvial and colluvial slopes at the base of ridges and cliffs and associated erosional ravines; and
4. Ledges of dry colluvium suspended on steep cliff slopes up to 160 feet above the valley floor by ribs of resistant bedrock.

Preferred habitat appears to be adjacent to seeps and along washes (Sanders 2006). From a geologic substrate perspective, Red Rock tarplant appears to prefer erosional remnants of the Ricardo Group, but also occurs on Quaternary alluvium (Faull 1987). Associated species in moister locations include the seep-spring monkeyflower (*Mimulus guttatus*) and Palmer's monkeyflower (*Mimulus palmeri*) (Faull 1987).

Population Status in the Planning Area

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 CNDDB records were 3,060 plants (1,250 plants in

1986), 2 plants, 1 plant, and 2,300 plants. The 2004 CNDDB record abundance estimate was 3,400 plants (11,000+ in 1986). The 1993 CNDDB 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 CNDDB 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 CNDDB identifies approximately 69 acres of element occurrences for this species on BLM lands within the El Paso subregion (Table 3.4-4).

Regulatory Status

Red Rock tarplant is not Federally or state listed, but is a BLM sensitive species. Red Rock tarplant was previously a candidate for federal listing (58 FR 64828–64845), but was removed from candidacy on February 28, 1996, in a notice of review (61 FR 7597–7613). Red Rock tarplant has a CRPR of 1B.2. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly endangered in California, with 20%–80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). Red Rock tarplant has a California Heritage Element Ranking of S1.2, indicating that it is considered critically imperiled in California (CDFW 2012b).

Threats

The primary threat appears to be OHV use and colonization by invasive non-natives such as shrub tamarisk (*Tamarisk ramosissima*) (Faull 1987). Red Rock tarplant are vulnerable to anthropogenic disturbances such as OHV use (Faull 1987). Camping and vehicle parking at Red Cliffs in Red Rock Canyon may also be threats. Measures to control these threats have been implemented by the DPR in the past (Faull 1987), but current management is uncertain. Faull (1987) observed that Red Rock tarplant experiences herbivory by rabbits (and possibly ground squirrels): the main stems and branches of up to 75% of plants at one location were observed to have been removed by herbivores.

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Robbins' nemacladus is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Los Angeles, Santa Barbara, San Benito, San Luis Obispo, and Ventura counties (CNPS 2017). This species generally blooms April through June (CNPS 2017). This species occurs in openings associated with the following habitat types: chaparral and valley and

foothill grassland (CNPS 2017). This species ranges in elevation from 350 to 1700 meters (CNPS 2017). This species is found in the South Coast Ranges with one population found in the Green Mountains in Tulare County (Nature Serve 2017).

Population Status in the Planning Area

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

Regulatory Status

The Robbins' nemacladus is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Robbins' nemacladus has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Robbins' nemacladus is possibly threatened by road maintenance and widening (CNPS 2017).

Robison's Monardella *(Monardella robisonii)*

Life History

Robinson's monardella is a perennial subshrub or shrub in the mint family (*Lamiaceae*) that is endemic to California. Robinson's monardella is typically 15 to 50 centimeters (5.9 to 19.7 inches) tall and it has an erect, multi-branched habit (Jepson Flora Project 2013). Flowering period is from April to September (Calflora 2013) or February to October (CNPS 2013).

Robinson's monardella is found among granite boulders (Jepson Flora Project 2013). This species is found in desert scrub (Jepson 2013) and pinyon and juniper woodland vegetation communities (CNPS 2013). Elevation range is 2,001 to 4,921 feet amsl (CNPS 2013).

Population Status in the Planning Area

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 CNDDB 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.

Regulatory Status

Robinson's monardella is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Robinson's monardella has a CRPR of 1B.3 (CNPS 2013). CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California, with less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). Robinson's monardella has a California Heritage Element Ranking of S3, indicating that it is "vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation" (CDFW 2012b).

Threats

Robinson's monardella threats are not described (CNPS 2013).

Rose-flowered larkspur (*Delphinium purpusii*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Rose-flowered larkspur is a perennial herb which is endemic (limited) to California (CalFlora 2017). It occurs within Kern and Tulare counties (CNPS 2017). This species generally blooms from April through May, which some blooming taking place as early as March (CNPS 2017). This species occurs in rocky, often carbonate soils, associated with the following habitat types: chaparral, cismontane woodland, and pinyon and juniper woodland (CNPS 2017). This species ranges in elevation from 300 to 1340 meters (CNPS 2017). The California Native Plant Society indicates that this species is found in a limited number of occurrences and that precise location and endangerment information is needed (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 481 acres within element occurrences for this species on BLM lands within the subregion Sierra (Table 3.4-4).

Regulatory Status

The Rose-flowered larkspur is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Rose-flowered larkspur has a California Heritage

Element Ranking of S3, indicating that it is "vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation" (CDFW 2012b).

Threats

Specific threats have not been identified for this species, but they are likely similar to other plant species listed here.

San Bernardino aster (*Symphyotrichum defoliatum*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The San Bernardino aster is a perennial rhizomatous herb which is endemic (limited) to California (CalFlora 2017). It occurs within Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and San Luis Obispo counties (CNPS 2017). This species generally blooms July through November (CNPS 2017). This species occurs near ditches, streams, springs associated with the following habitat types: cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland (vernally mesic) (CNPS 2017). While this species usually occurs in meadows, springs, and streams, it also occurs in upland habitat (NatureServe 2017). This species ranges in elevation from 2 to 2040 meters (CNPS 2017). This species has been seldom reported in recent years (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 153 acres within element occurrences for this species on BLM lands within the subregion Jawbone (Table 3.4-4).

Regulatory Status

The San Bernardino aster is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The San Bernardino aster has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The San Bernardino aster is possibly threatened by non-native plants (CalFlora 2017) and development of private lands (NatureServe 2017).

San Bernardino milk-vetch (*Astragalus bernardinus*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The San Bernardino milk-vetch is a perennial herb which is endemic (limited) to California (CalFlora 2017). It occurs within Riverside and San Bernardino counties (CNPS 2017). This species generally blooms from April through June (CNPS 2017). This species often occurs in granitic or carbonate areas associated with the following habitat types: Joshua tree woodland and pinyon and juniper woodland (CNPS 2017). This species ranges in elevation from 900 to 2000 meters (CNPS 2017). Known from forty-two occurrences in California (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 1,689 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Regulatory Status

The San Bernardino milk-vetch is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .1 are “fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat” (CNPS 2011). The San Bernardino milk-vetch has a California Heritage Element Ranking of S3, indicating that it is “vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation” (CDFW 2012b).

Threats

The San Bernardino milk-vetch is threatened by mining, grazing, development, and recreation (CNPS 2017).

Sanicle Cymopterus *(Cymopterus ripleyi var. saniculoides)*

Life History

Sanicle cymopterus is a small perennial herb in the carrot family (Apiaceae) that is known from California and Nevada. Sanicle cymopterus is typically 10 to 15 centimeters (3.9 to 5.9 inches) tall,

sprouting from a buried root crown (Jepson Flora Project 2013). Flowering period is from April to June (Calflora 2013).

Sanicle cymopterus is found on gravelly, sandy, or carbonate substrates (Jepson Flora Project 2013). This species is found in Joshua tree woodland and Mojavean desert scrub vegetation communities (CNPS 2013). Elevation range is 3,609 to 5,446 feet amsl (CNPS 2013).

Population Status in the Planning Area

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 CNDDB identifies approximately 389 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-4).

Regulatory Status

Sanicle cymopterus is not a federal or state listed species (CNPS 2013), but is a BLM sensitive species. Sanicle cymopterus has a CRPR of 1B.2 (CNPS 2013). CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly endangered in California, with 20%–80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). Sanicle cymopterus has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

Sanicle cymopterus is threatened by cattle grazing on BLM land at Lee Flat, as well as by vehicles and mining (CNPS 2013).

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

Background information for the short-joint beavertail would not change from the previous analysis included in the affected environment of the 2005 WEMO Final EIS (BLM 2005). For a general discussion of this species, please refer to Section 3.3.8.20, pgs. 3-194 and 3-195. The supplemental information presented below is based on the species account from the California Native Plant Society (CNPS 2014) and recent BLM data.

Life History

Short-joint beavertail cactus is mostly associated with Joshua tree, pinyon pine, and juniper woodlands, although it also occurs in chaparral and Mojave desert scrub communities. It has been reported from a wide variety of well-drained soils, from sandy to rocky, in open streambeds and on

rocky slopes. Flowering period is from April to August (CNPS 2014). It occurs between elevations of 3000 – 6500 feet.

Population Status in the Planning Area

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 CNDDB identifies approximately 25 acres of element occurrences for this species on BLM lands within the Victorville subregion (Table 3.4-4).

Regulatory Status

The short-joint beavertail is not Federally or state listed, but is a BLM sensitive species and has a CRPR of 1B.2 (CNPS 2013). CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly endangered in California, with 20%–80% of occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). Short-joint beavertail has a California Heritage Element Ranking of S3, indicating that it is "vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation" (CDFW 2012b).

Threats

This species is threatened by urbanization, mining, horticultural collecting, grazing, and vehicles (CNPS 2014). Other possible threats include powerline construction and non-native plant encroachment (CNPS 2014).

Spanish Needle Onion *(Allium shevockii)*

The Spanish Needle onion was not included in the 2005 WEMO Final EIS (BLM 2005), but is considered to potentially occur within the planning area based on recent documentation (Dudek and ICF International 2012) and consultation with BLM biologists. The information presented below is based on the species accounts prepared for the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012).

Life History

Spanish Needle onion is a perennial bulbiferous herb that stands approximately 10 to 20 centimeters (3.9 to 7.9 inches) tall (Jepson Flora Project 2011). It grows each year from an underground bulb, with the leaves withering after flowering, which is given variously as May to June (CNPS 2011) and June to July (Jepson Flora Project 2011). This information probably comes from the original Spanish Needle Peak population, because the lower elevation Tehachapi populations flower as early as late April.

Like several other onion species in California, Spanish Needle onion appears to reproduce mostly vegetatively, by production of new bulbs that form on short rhizomes growing from the base of the parent bulb (McNeal 1987), at least as indicated by the Spanish Needle Peak population (Pitzer 2006). The flowers, however, are large and distinctive and are probably attractive to insect

pollinators, and plants in the Horse Canyon area have been reported to produce seed (Hare pers. comm. 1997, cited in Pitzer 2006). There has been no research on pollinators, seed production, establishment of bulbs, or other aspects of its reproduction (Pitzer 2006).

Spanish Needle onion grows in rocky soil and at the edge of rock outcrops and talus derived from volcanic and metamorphic rock (Pitzer 2006; CDFW 2012b; Jepson Flora Project 2011). The rocky sites inhabited by Spanish Needle onion are sparsely vegetated; the occurrences are surrounded by sparse pinyon-juniper woodland with pinyon pine, California juniper, chaparral yucca (*Hesperoyucca whipplei*), and narrowleaf goldenbush (*Ericameria linearifolia*) (CDFW 2012b). An elevation range of 2,000 to 2,500 meters (6,560 to 8,200 feet) is given in recent literature (Jepson Flora Project 2011), whereas CNPS (2011) provides a low elevation of 850 meters (2,790 feet). The Horse Canyon occurrences are at 4,800 to 5,225 feet, and recent records in the CNDDB give much lower elevations for the Jawbone Canyon occurrences: 1,050 and 3,000 feet (CDFW 2012b). Therefore, based on records in the CNDDB, its elevation range in the planning area appears to be 1,050 to 5,400 feet (CDFW 2012b).

Population Status in the Planning Area

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 CNDDB 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 CNDDB 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 CNDDB 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.

Regulatory Status

Spanish Needle onion (*Allium shevockii*) is not Federally or state listed, but is a BLM sensitive species. Spanish needle onion has a CRPR of 1B.3. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b).

Threats

Because of the relatively remote and rugged character of its habitat, threats to the species are considered minimal (Pitzer 2006; CDFW 2012b). However, because it occurs in relatively small numbers at each known occurrence, it may be vulnerable to local extirpation from random events. Potential threats mentioned by surveyors are wind energy development, grazing, OHV use, and road/trail construction (CDFW 2012b), but there is no evidence that these threats are causing actual damage to any populations. An additional potential threat comes from the showy flowers that could attract collectors, but so far, there is no evidence that bulb collection is occurring (Pitzer 2006).

Sweet-smelling monardella (*Monardella beneolens*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The sweet-smelling monardella is a perennial rhizomatous herb which is endemic (limited) to California (CalFlora 2017). It occurs within Inyo, Kern, and Tulare counties (CNPS 2017). This species generally blooms from June through September (CNPS 2017). This species occurs in granitic areas associated with the following habitat types: alpine boulder and rock field, subalpine coniferous forest, and upper montane coniferous forest (CNPS 2017). This species ranges in elevation from 2475 to 3500 meters (CNPS 2017). Known from only three occurrences on the eastern crest of the Sierra Nevada (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 52 acres within element occurrences for this species on BLM lands within the subregion Sierra (Table 3.4-4).

Regulatory Status

The sweet-smelling monardella is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3

are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). The creamy blazing star has a California Heritage Element Ranking of S2, indicating that it is "Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The sweet-smelling monardella is known only from the eastern Sierran crest. Remoteness of occurrences limits disturbance. However this species hybridizes with *M. linoides* ssp. *Linoides* and M. *odoratissima* ssp. *pallida* (CNPS 2017).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The Tehachapi monardella is a perennial rhizomatous herb which is endemic (limited) to California (CalFlora 2017). It occurs within Kern, Los Angeles, Tulare, and Ventura counties (CNPS 2017). This species generally blooms June through August with some blooming starting as early as May (CNPS 2017). This species occurs in the following habitat types: lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest (CNPS 2017). This species ranges in elevation from 900 to 2470 meters (CNPS 2017).

Population Status in the Planning Area

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

Regulatory Status

The Tehachapi monardella is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). The Tehachapi monardella has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Tehachapi monardella is threatened by road maintenance, ORVs, and wind energy (NatureServe 2017).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB data base.

Life History

The white-bracted spineflower is an annual herb which is endemic (limited) to California (CalFlora 2017). It occurs within Los Angeles, Riverside, San Bernardino, and San Diego counties (CNPS 2017). This species generally blooms April through June (CNPS 2017). This species occurs in sandy or gravelly soils associated with the following habitat types: coastal scrub (alluvial fans), Mojavean desert scrub, and pinyon and juniper woodland (CNPS 2017). This species ranges in elevation from 300 to 1200 meters (CNPS 2017). Known from fifty occurrences in California (NatureServe 2017).

Population Status in the Planning Area

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 CNDDB identifies approximately 996 acres within element occurrences for this species on BLM lands (Table 3.4-4).

Regulatory Status

The White-bracted spineflower is not Federally or state listed, but is a BLM sensitive species.

This species is also a CRPR 1B.2 species. CRPR 1B species are considered “rare, threatened, or endangered in California and elsewhere” (CDFW 2012b). CRPR species with a threat rank of .2 are “fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat” (CNPS 2011). The White-bracted spineflower has a California Heritage Element Ranking of S3, indicating that it is “vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation” (CDFW 2012b).

Threats

The White-bracted spineflower is threatened by development, flood control projects, mining, and vehicles (CNPS 2017). Other threats include grazing and weeds (NatureServe 2017).

White-margined Beardtongue *(Penstemon albomarginatus)*

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.8.22, pp. 3-195 and 3-196) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

Life History

White-margined beardtongue is a short-lived perennial member of the plantain family (*Plantaginaceae*) that is 15 to 35 centimeters (5.9 to 13.8 inches) tall (CNPS 2011; Jepson Flora Project 2011). It appears to reproduce primarily through production and dispersal of seed (Etyemezian and others 2010) and blooms between March and May (Jepson Flora Project 2011). Peak flowering appears to occur in April of most years (Etyemezian and others 2010).

Like many Mojave Desert perennial plants, white-margined beardtongue reproductive events are rare and episodic and may require a combination of successive wet years that favor seed production, seed germination, and seedling growth (Etyemezian and others 2010). Andre (2010) notes that this species maintains a substantial soil seed bank and survives underground as a subterranean heterotrophy (root/caudex) during dry years (Andre 2010). Even during average years of precipitation, a large percentage of the seed bank will not germinate and many living plants remain dormant underground. Only a subset of plants will put on above ground growth, and an even fewer number flower and set seed. Seed banks can persist in the soil for many decades before germinating (Andre 2010).

Andre (2010) also has observed and documented frequent localized extinctions of cohorts with rapid establishment of plants in previously unoccupied areas. He concludes that plants at the California occurrence behave like biennials or short-lived perennials, relying upon the maintenance of a viable seed bank, and over time exhibit a shifting distribution within the aeolian sands where they occur (Andre 2010).

Etyemezian and others (2010) observed very limited seed production and dispersal of whitemargined beardtongue at study sites in Nevada during the drought years of 2008–2009. They attributed the lack of reproductive success to drought and insect herbivory at two sites, but did observe seed dispersal at one site in 2009. Seed dispersal distances ranged from 1 to 15 centimeters (0.4 to 6 inches) at this site.

MacKay (2006) noted that white-margined beardtongue is present in some washes but absent in other drainages nearby, and suggests that might be due to both limited seed dispersal distances and the lack of suitable stabilized deep sand in those other drainages (MacKay 2006). She suggests that the small seeds could be scattered short distances by ants or rodents, or may get transported by water in very wet years.

The tendency for plants to occur in scattered groups of up to 20 individuals, and the fact that young cuttings produce adventitious roots in experiments (Scogin 1989, as cited in MacKay 2006), suggest that vegetative reproduction may occur in this species in its natural habitat, even though attempts to propagate from cuttings at the garden failed (Scogin 1989, as cited in MacKay 2006).

The success of white-margined beardtongue is dependent upon a variety of interactions with pollinators and other nearby plant species, as well as a variety of ecological processes. The showy flowers are visited by several insects, including small carabid beetles, large flies, and vespid wasps

with orange abdomens. Pollen was observed on upper-body surfaces of the vespids, making them the most likely pollinator of white-margined beardtongue (Scogin 1989, as cited in MacKay 2006).

White-margined beardtongue establishment is much more likely in canopy inter-spaces than under plant canopies, but Etyemezian and others (2010) could not determine whether competition with other perennial species or other micro-environmental factors were responsible for this phenomenon (Etyemezian and others 2010). For the few individuals they noticed growing in under canopy locations, the overstory species was equally likely to be white bursage or big galleta grass (only in Clark County), but never creosote bush.

The CNDDB element occurrence information cites the habitat requirements of whitemargined beardtongue as Mojave Desert scrub and desert dunes, specifically in deep, stabilized desert sand, and in washes and along roadsides (CDFW 2012b). Within California, Andre (2010) notes that this species occurs on mostly "fine alluvial sands within a sparse creosote bush scrub community."

White-margined beardtongue occurs from 635 to 1,065 meters (2,083 to 3,494 feet) (CDFW 2012b). There are additional records in the CCH database that, if verified, would extend this elevation range to as low as 426 meters (1,398 feet) (Jepson Flora Project 2011).

Population Status in the Planning Area

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 CNDDB, 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 CNDDB 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 CNDDB 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 CNDDB 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.

Regulatory Status

White-margined (*Penstemon albomarginatus*) beardtongue is not Federally or state listed, but is a BLM sensitive species. White-margined beardtongue has a CRPR of 1B.1. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .1 are "seriously threatened in California, with over 80% of occurrences threatened/high degree and immediacy of threat" (CNPS 2011). White-margined beardtongue has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

At the time of the 2006 WEMO Plan analysis, all of the white-margined beardtongue occurrences in California were located within or adjacent to BLM verified solar and wind project applications, the BLM Pisgah Solar Energy Zone, approved solar projects, or on military bases. The proposed solar projects have been withdrawn from consideration for a variety of reasons and the Pisgah SEZ was eliminated from further consideration in the Final Solar PEIS. These locations are also near possible military base expansion lands, including Fort Irwin Army Base and the Twenty-Nine Palms MCAGCC (29 Palms). According to the 29 Palms Land Acquisition/Airspace Establishment Study FEIS (29 Palms FEIS), white-margined beardtongue is located in the Lavic Lake Training Area, but it was not observed or discussed as potentially occurring in the expansion areas to the west, south, and east of the existing combat center (Department of the Navy 2011b). However, the 29 Palms FEIS also reports potential habitat (i.e., creosote bush scrub and/or desert dunes) for white-margined beardtongue in all three expansion areas, so there is likely some risk to this species that would result from these expansion plans.

This species is also potentially threatened by the presence of I-40 and numerous utility access roads that facilitate movement of people and OHVs to the occupied habitat areas. MacKay (2006) notes that repeated destruction of above-ground plants may use up nutrient stores within the long taproot of the plant and result in declines of this species. Large, organized off-road races also create massive dust clouds and are held in areas adjacent to white-margined beardtongue habitat areas in Nevada. The dust has been seen rising hundreds of feet into the air (Mangrich, pers. obs. 2009), and poses a potential threat to the Nevada population's pollinators, as well as the plant's photosynthetic capacity (Mangrich, pers. obs. 2009). Although there are no known organized off-road races held near occupied habitat within the planning area, OHV activity in the planning area could pose similar, albeit somewhat less severe, threats.

Other threats include the presence of power lines and pipelines that bring human disturbance into areas of occupied habitat (MacKay 2006). Military activities (e.g., camping) have also been observed in the vicinity of occupied habitat areas, which could increase trampling damage to the species (MacKay 2006).

Although white-margined beardtongue is a showy plant, it does not appear that there is a threat resulting from horticultural efforts because it doesn't propagate well from cuttings, and transplantation efforts have been unsuccessful (Scogin 1989, as cited in MacKay 2006).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the November 2012 DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDDB database.

Life History

The Beaver dam breadroot, a dicot, and a perennial herb that is native to California and is also found outside of California, but is confined to western North America (CalFlora 2017). It is native to the deserts around the intersection of California, Nevada, and Arizona, where it grows in local habitat including disturbed areas (CNPS 2017). Found in open areas and on roadcuts (Jepson 2013) and in washes. Substrate is sandy. Found in Joshua tree woodland and Mojavean desert scrub vegetation communities. Elevation range 2,001 to 5,003 feet amsl (CNPS 2013) or < 5,741 feet amsl (Jepson 2013). Flowering April to May (Calflora 2013).

Population Status in the Planning Area

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 CNDDB identifies approximately 7,321 acres of element occurrences for this species on BLM lands (Table 3.4-4).

Regulatory Status

The Beaver dam breadroot is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Beaver dam breadroot has a California Heritage Element Ranking of S2, indicating that it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province" (CDFW 2012b).

Threats

The Beaver dam breadroot is potentially impacted by vehicles and road widening (CNPS 2011).

Boyd's monardella (*Monardella boydii*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the November 2012 DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDDB database.

Life History

The Boyd's monardella is a dicot, and an annual herb that is native to California (CalFlora 2017). Endemic to California (San Bernardino County) (CNPS 2013) in the south-central Mojave Desert (Jepson 2013). Present in the Project Area (pers. comm. Chavez 2013). Known occurrences within the Project Area are clustered to the southeast of Barstow, near Ord Mountain, Camp Rock Mine, and Silver Bell Mine (CNPS 2013). Found on rocky slopes and in canyon bottoms or washes (Jepson 2013). Substrate is usually alluvial soils and bedrock cracks. Found in Mojavean desert scrub, pinyon and juniper woodland, and desert riparian scrub vegetation communities. Elevation range 4,593 to 5,413 feet amsl (CNPS 2013). Flowering August to October (Calflora 2013).

Population Status in the Planning Area

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

Regulatory Status

The Boyd's monardella is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Boyd's monardella has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CNPS 2017).

Threats

The Boyd's monardella is potentially impacted by mining, vehicles, wind and solar energy development, trampling, and climate change (CNPS 2017).

Mojave menodora (*Menodora spinescens var. mohavensis*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) nor was it discussed in the November 2012 DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDDB database.

Life History

The Mojave menodora is a dicot, and a shrub that is native to California (CalFlora 2017). Endemic to California (Inyo and San Bernardino Counties) (CNPS 2013) on the north slope of the San Bernardino Mountains (Jepson 2013). Wide-spread distribution in Project Area (pers. comm. Chavez 2013). Known occurrences within the Project Area occur in the general vicinity of Barstow and on the north side of Joshua Tree NP into the Yucca Valley (CNPS 2013). Found on rocky desert hillsides and in canyons (Jepson 2013). Substrate is andesite gravel. Found in Mojavean desert scrub vegetation communities. Elevation range 2,264 to 6,562 feet amsl (CNPS 2013).

Population Status in the Planning Area

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

Regulatory Status

The Mojave menodora is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.3 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .3 are "not very threatened in California with <20% of occurrences threatened/low degree and immediacy of threat or no current threats known" (CNPS 2011). The Mojave menodora has a California Heritage Element Ranking of S2S3, indicating uncertainty whether it is "imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province," and/or indicating that it is "vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation" (CDFW 2012b).

Threats

The Mojave menodora is potentially impacted by vehicles (CNPS 2011).

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

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) but was discussed in the November 2012 DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDB database.

Life History

The Piute Mountains jewelflower is a dicot, and perennial herb that is native to California and is endemic (limited) to California (CalFlora 2017). Endemic to California (Kern County) in the southern Sierra Nevada. Known occurrences within the project area are concentrated near Sweet Ridge, south of Cache Peak near the City of Mojave (CNPS 2017). Found on metamorphic rocks and sandy slopes, though the limited distribution makes it difficult to generalize these observations. Found in broadleaf upland forests, closed-cone coniferous forest, and pinyon-juniper woodland vegetation communities and is associated with species including associated with Bodfish

Piute cypress (*Cupressus nevadensis*) and California juniper (*Juniperus californica*). Elevation range 3,592 to 7,000 feet amsl. Flowering June to July (Jepsen 2017).

Population Status in the Planning Area

Within the planning area, the CNDDB identifies approximately 0 acres of element occurrences for this species on BLM lands within the Project Area, but it does occur near the Sierra subregion (Table 3.4-3).

Regulatory Status

The Piute Mountains jewelflower is not Federally or state listed, but is a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Piute Mountains jewelflower has a California Heritage Element Ranking of S1, indicating that it is of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

The Piute Mountains jewelflower is potentially impacted by wind energy development (CNPS 2015).

Triple-ribbed milkvetch (*Astragalus tricarinatus*)

This species was not analyzed previously in the 2005 WEMO Final EIS (BLM 2005) but was discussed in the November 2012 DRECP baseline biology report (Dudek and ICF International 2012). This species is being added as a result of a review of the current CNDDB database.

Life History

The Triple-ribbed milkvetch is a dicot, is a perennial herb that is native to California and is endemic (limited) to California. (CalFlora 2017). Known from California (Riverside and San Bernardino Counties), mainly in the eastern San Bernardino Mountains/Whitewater Canyon area, Morongo Canyon, and the western part of the Little San Bernardino Mountains, with disjunctive occurrences in the Orocopia and Santa Rosa mountain ranges (CNPS 2017). On edge of Project Area, no designated routes in habitat (pers. comm. Chavez 2013). Known occurrences within the Project Area are in Big Morongo Canyon and adjacent canyons. Found commonly on rocky slopes and ridges that are mostly barren. Substrate is coarse and granitic. Found in Joshua tree woodland and Sonoran desert scrub vegetation communities with associated species including associated plants including giant needlegrass (*Achnatherum coronatum*), California buckwheat (*Eriogonum fasciculatum*), ceanothus (*Ceanothus greggii*), bush poppy (*Dendromecon rigida*), bigberry manzanita (*Arctostaphylos glauca*), bitter snakewood (*Condalia globosa*), yerba santa (*Eriodictyon*

trichocalyx), and Spanish bayonet (*Yucca schidigera*). Elevation range 2,300 to 4,000 feet amsl. Flowering February to May (Jepsen 2017).

Population Status in the Planning Area

Within the planning area, the CNDDB identifies approximately 21 acres of element occurrences for this species on BLM lands in the Sand to Snow National Monument (Table 3.4-3).

Regulatory Status

The Triple-ribbed milkvetch is Federal but not state listed species. It is also a BLM sensitive species. This species is also a CRPR 1B.2 species. CRPR 1B species are considered "rare, threatened, or endangered in California and elsewhere" (CDFW 2012b). CRPR species with a threat rank of .2 are "fairly threatened in California with 20-80% occurrences threatened/moderate degree and immediacy of threat" (CNPS 2011). The Triple-ribbed milkvetch has a California Heritage Element Ranking of S1, indicating that it is "critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province" (CDFW 2012b).

Threats

The Triple-ribbed milkvetch is potentially impacted by pipeline maintenance and vehicles (CNPS 2010).

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 C, 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 C, 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 CNDDB, 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	6,099.6
		Mojave fringe-toed lizard	BLM ACEC	2,895.4
		Nelson's bighorn sheep	CNDDB	626.8
		Pallid bat	CNDDB	17.4
		Southwestern pond turtle	BLM Staff Observation	1.0
Barstow	BA	Burrowing owl	CNDDB	2.0
		Desert tortoise	Critical Habitat	639.4
			DT ACEC	44,664.1
		Golden eagle	4 Mile Buffer	1,699.8
		Pallid Bat	CNDDB	37.4
		Mojave fringe-toed lizard	BLM ACEC	3,339.6
		Le Conte's thrasher	BLM Designated Habitat	86.3
Black Mountain	BM	Desert tortoise	Critical Habitat	93,098.8
		Golden eagle	4 Mile Buffer	26,590.9
		Mohave ground squirrel	Core Areas	2,051.8
		Bendire's thrasher	BLM Designated Habitat	1,404.2
Broadwell Lake	BL	Bendire's thrasher	BLM Designated Habitat	4.9
		Burrowing owl	CNDDB	9.9
		Golden eagle	4 Mile Buffer	5,141.7
		Mojave fringe-toed lizard	CNDDB	17.1
		Nelson's bighorn sheep	CNDDB	734.7
Calico Mountains	CM	Golden eagle	4 Mile Buffer	31,274.0
		Le Conte's thrasher	BLM Designated Habitat	38.7
		Desert tortoise	Critical Habitat	29,146.2
			DT ACEC	28,526.1
Coolgardie	CG	Golden eagle	4 Mile Buffer	1,596.1
		Le Conte's thrasher	BLM Designated Habitat	49.4
		Mohave ground squirrel	Core Areas	31,745.3
		Desert tortoise	Critical Habitat	81,795.7
			DT ACEC	65,398.5
Cronese Lake	CL	Golden eagle	4 Mile Buffer	15,611.9
		Desert tortoise	Critical Habitat	80,354.9
			DT ACEC	77,624.1
		Mojave fringe-toed lizard	CNDDB	5,336.3
Darwin	DA	Nelson's bighorn sheep	CNDDB	311.1
		LeContes thrasher	BLM Designated Habitat	276.7
		Pallid bat	CNDDB	13.4

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
El Mirage	EM	Desert tortoise	Critical Habitat	27,111.3
			DT ACEC	29,190.6
El Paso	EP	Burrowing owl	CNDDB	4.9
		Desert tortoise	Critical Habitat	67.9
		Golden eagle	4 Mile Buffer	50,042.4
		Le Conte's thrasher	BLM Designated Habitat	31.0
		Mohave ground squirrel	Core Areas	27,224.3
			Leitner Population	2,700.2
			Other Known Populations	259.6
Fremont Peak	FP	Golden eagle	4 Mile Buffer	12,575.3
		Desert tortoise	Critical Habitat	72,950.2
			DT ACEC	53,878.9
		Mohave ground squirrel	Leitner Population	28,216.3
			Other Known Populations	13,348.8
Harper Lake	HL	Desert tortoise	Critical Habitat	27,296.4
			DT ACEC	40,570.6
		Golden eagle	4 Mile Buffer	174.7
		Mohave ground squirrel	Leitner Population	3,051.4
		Mojave fringe-toed lizard	CNDDB	4,947.5
		Burrowing owl	CNDDB	936.3
Iron Mountain	IM	Burrowing owl	CNDDB	6.1
		Desert tortoise	Critical Habitat	8,486.7
			DT ACEC	17,135.9
		Mohave ground squirrel	Leitner Population	1,061.1
Jawbone	JB	Bendire's thrasher	BLM Designated Habitat	13,261.0
		Burrowing owl	CNDDB	59.2
		Golden eagle	4 Mile Buffer	82,541.5
		Le Conte's thrasher	BLM Designated Habitat	238.5
		Mohave ground squirrel	Core Areas	54,509.8
		Pallid bat	CNDDB	776.5
Johnson Valley	JV	Golden eagle	4 Mile Buffer	52,893.1
		Le Conte's thrasher	BLM Designated Habitat	102.0
		Western mastiff bat	CNDDB	154.5
		Desert tortoise	Critical Habitat	4,919.1
			DT ACEC	173.5

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
Joshua Tree	JT	Nelson's bighorn sheep	CNDDB	8,265.4
		Desert tortoise	Critical Habitat	103,059.9
			DT ACEC	108,034.0
		Mojave fringe-toed lizard	BLM ACEC	1,418.9
		Pallid bat	CNDDB	5.0
Juniper Flats	JF	Golden eagle	4 Mile Buffer	14,227.4
Kramer Hills	KH	Mohave ground squirrel	Leitner Population	8,056.5
		Desert tortoise	DT ACEC	65,732.6
			Critical Habitat	65,734.5
Lancaster	LA	Golden eagle	4 Mile Buffer	40.9
		Desert tortoise	Critical Habitat	1,370.2
			DT ACEC	1,367.0
		Le Conte's thrasher	BLM Designated Habitat	1.2
		Mohave ground squirrel	Core Areas	126.1
Mojave Trails National Monument	MT	Desert tortoise	Critical Habitat	1,195.9
			DT ACEC	159.7
		Fringed myotis	CNDDB	4.9
		Golden eagle	4 Mile Buffer	113,521.7
		LeContes thrasher	BLM Designated Habitat	4.6
		Mojave fringe-toed lizard	BLM ACEC	13,562.2
			CNDDB	13,153.2
		Pallid bat	CNDDB	5.0
		Nelsons bighorn sheep	CNDDB	55,736.4
Middle Knob	MK	Golden eagle	4 Mile Buffer	35,054.4
		Burrowing owl	CNDDB	1.0
		Le Conte's thrasher	BLM Designated Habitat	15.3
Mitchel Mountains	MM	Golden eagle	4 Mile Buffer	6,751.9
		Desert tortoise	Critical Habitat	13,936.5
			DT ACEC	13,904.0
Newberry-Rodman	NR	Golden eagle	4 Mile Buffer	83,198.7
		Desert tortoise	Critical Habitat	101,437.6
			DT ACEC	104,362.0
		Mojave fringe-toed lizard	CNDDB	1,599.3
		Nelson's bighorn sheep	CNDDB	24,749.6

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
North Searles	NS	Golden eagle	4 Mile Buffer	33,753.4
		Le Conte's thrasher	BLM Designated Habitat	4,766.6
		Mohave ground squirrel	Leitner Population	15,337.4
		Nelson's bighorn sheep	CNDDB	31,332.5
		Pallid bat	CNDDB	25.1
		Western small-footed myotis	CNDDB	25.1
Ord Mountains	OM	Burrowing owl	CNDDB	1.7
		Desert tortoise	Critical Habitat	106,658.7
			DT ACEC	100,325.2
		Golden eagle	4 Mile Buffer	121,524.2
		Nelson's bighorn sheep	CNDDB	879.8
Rands	RA	Burrowing owl	CNDDB	69.2
		Desert tortoise	Critical Habitat	52,712.4
			DT ACEC	20,434.8
		Golden eagle	4 Mile Buffer	49,979.8
		Gray vireo	CNDDB	69.2
		Le Conte's thrasher	BLM Designated Habitat	1.1
		Mohave ground squirrel	Leitner Population	10,269.8
			Other Known Populations	18,420.7
		Pallid bat	CNDDB	1,157.3
		Spotted bat	CNDDB	12.9
Rattlesnake Canyon	RC	Bendire's thrasher	BLM Designated Habitat	34.6
		Golden eagle	4 Mile Buffer	36,604.6
		Le Conte's thrasher	BLM Designated Habitat	5.3
Red Mountain	RM	Golden eagle	4 Mile Buffer	52,381.0
		Desert tortoise	Critical Habitat	107,571.2
			DT ACEC	110,167.7
		Mohave ground squirrel	Leitner Population	13,015.9
			Other Known Populations	28,508.3
Ridgecrest	RI	Golden eagle	4 Mile Buffer	13,317.9
		Le Conte's thrasher	BLM Designated Habitat	118.7
		Mohave ground squirrel	Leitner Population	14,415.7
			Other Known Populations	14,286.5
		Pallid bat	CNDDB	416.4
		Nelsons bighorn sheep	CNDDB	6,163.2

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
Sierra	SI	Golden eagle	4 Mile Buffer	184,152.1
		Burrowing owl	CNDDB	752.2
		Le Conte's thrasher	BLM Designated Habitat	1,968.7
		Least Bell's vireo	CNDDB	
		Mohave ground squirrel	Core Areas	63,961.5
		Northern sagebrush lizard	CNDDB	9.9
		Swainson's hawk	CNDDB	68.6
		Mohave ground squirrel	Other Known Populations	6,957.9
Stoddard Valley	SV	Bendire's thrasher	BLM Designated Habitat	214.8
		Burrowing owl	CNDDB	10.6
		Golden eagle	4 Mile Buffer	98,486.0
		Le Conte's thrasher	BLM Designated Habitat	1,851.0
		Mojave fringe-toed lizard	CNDDB	3.6
		Western mastiff bat	CNDDB	835.4
Victorville	VV	Golden eagle	4 Mile Buffer	122.0
		Desert tortoise	Critical Habitat	334.7
			DT ACEC	334.6
		Western mastiff bat	CNDDB	47.4
Wonder Valley	WV	Bendire's thrasher	BLM Designated Habitat	0.3
		Golden eagle	4 Mile Buffer	9,098.0
		Le Conte's thrasher	BLM Designated Habitat	9.2
		Mojave fringe-toed lizard	CNDDB	447.9
			BLM ACEC	1,223.9
		Nelson's bighorn sheep	CNDDB	6,666.9

Additionally, 20 species were not included in the 2005 WEMO Final EIS (BLM 2005), but are in this SEIS since they are considered to potentially occur within the planning area based on recent documentation (Dudek 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

The 22 special status wildlife species identified as potentially affected by the proposed action or alternatives within the planning area are described in the following section.

The majority of the updated summaries of species are based on the Species Accounts prepared for the March 2012 draft DRECP Baseline Biology Report (Dudek and ICF International 2012) baseline biology report. The WEMO Planning area exists within the boundaries of the DRECP LUPA planning area.

3.4.3.2.1 Mammals

Mohave Ground Squirrel

The information from the 2005 WEMO Final EIS (BLM 2005)is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 3.3.3, pp. 3-144 to 3-169 of the 2005 WEMO Final EIS.

Life History

There is little direct information on the potential role of MGS in maintaining ecological relationships and processes. Their burrow systems likely provide refuge for other species that do not dig their own burrows such as snakes and lizards and potentially other small rodents. The range of the MGS is entirely overlapped by the diurnal white-tailed antelope squirrel, but there appears to be little direct competition between the two species (MGSWG 2011). They are probably prey for several natural predators, such as coyote, American badger, bobcat, red-tailed hawk, golden eagle, prairie falcon, common raven, and Mojave rattlesnake (Best 1995).

MGS maintain three types of burrows within their home ranges: (1) home burrows that are used overnight during the active season and usually located at the edge of a home range; (2) aestivation burrows; and (3) accessory burrows that are used during social interactions or for escape and thermoregulation during the midday (Best 1995). Burrows are typically constructed under large shrubs (MGSWG 2011).

Harris and Leitner (2004) conducted a 5-year radiotelemetry study of home range use by MGS in the Coso Range in Inyo County. At this study site, individual MGS home ranges (calculated using both minimum convex polygon and adaptive kernel methods) varied substantially by year, individual, sex, and season (i.e., mating season vs. post-mating season). Generally, males have larger home ranges than females, with the most pronounced differences during the mating season.

Harris and Leitner (2005) used radiotelemetry to track dispersal movements by juvenile MGS in their first year to hibernation sites. Most juveniles dispersed relatively long distances from their natal burrow area, and exhibited dispersal that is farther than other squirrels and other mammals in proportion to home range sizes (Harris and Leitner 2005).

The MGS breeding season is from mid-February to mid-March (Best 1995; Laabs 2006). Males emerge from hibernation in February, up to two weeks before females, and during this time they may be territorial (Best 1995). Females generally only occupy male territories for one or two days then establish their own home ranges after copulation. Males stake out the overwintering sites of females to mate with them when they emerge (MGSWG 2011).

Pregnant females are present from February to May and gestation lasts from 29 to 30 days (Best 1995). Litter sizes range from four to nine (Best 1995), though mortality of juveniles is high during the first year, especially for juvenile males (MGSWG 2011). Parental care and lactation continues through mid-May and juveniles emerge above ground from 10 days to 2 weeks later. Litters generally appear above ground in early May (Harris and Leitner 2004). Females will breed at 1 year of age if environmental conditions are suitable, but males do not mate until 2 years of age (MGSWG 2011).

Population Status in the Planning Area

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 (CNDDB) 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 CNDDB 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 3.4-56.

Table 3.4-6. Acres of Leitner Data for the Mohave Ground Squirrel within the Planning Area[1]

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

Table 3.4-6. Acres of Leitner Data for the Mohave Ground Squirrel within the Planning Area[1]

Subregion	Subregion Abbreviation	Name	Sum of Acres
Total			**96,124**

[1]Data 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 3.4-56.

Table 3.4-7. Acres of Mohave Ground Squirrel Other Known Population Data within the Planning Area[1]

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**

[1]Data overlaps with Leitner data and Core Areas for the Mohave ground squirrel
[2]NA = 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 3.4-56).

Table 3.4-8. Acres of Mohave Ground Squirrel Core Area within the Planning Area[1]

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

Table 3.4-8. Acres of Mohave Ground Squirrel Core Area within the Planning Area[1]

Subregion	Subregion Abbreviation	Core Area Name	Sum of Acres
Sierra	SI	Coso Range-Olancha	63,164.9
		Little Dixie Wash	796.7
Total			**179,618.9**

[1]Data overlaps with Leitner data and Core Areas for the Mohave Ground Squirrel
[2]NA = BLM lands outside designated subregion boundaries within the WEMO planning area.

Threats

Threats to the Mohave ground squirrel would not change from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) within the planning area. For a discussion of these threats, please refer to Section 3.3.3.5, pg. 3-157 to 167.

Bats

The information from the 2005 WEMO Final EIS (BLM 2005)is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 these species, please refer to Section 3.3.4, pp. 3-169 to 3-170 of the 2005 WEMO Final EIS.

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.4, pg. 3-169 to 3-170) is supplemented by the following updated information from the DRECP Baseline Biology Report (Dudek and ICF International 2012).

Life History

Five species occurring within the planning area could potentially be affected by the proposed action or alternatives: spotted bat, pallid bat, western mastiff bat, fringed myotis, and western small-footed myotis.

The fringed myotis and western small-footed myotis were not included in the 2005 WEMO Final EIS (BLM 2005). The fringed myotis and western small-footed myotis occur within a wide variety of habitats, but use caves, mines, buildings, and crevices as roost sites. Hibernation lasts from October/November through March. Mating occurs in the fall and the young are born from May through July (Zeiner, D.C. et al 1988-1990).

The fringed myotis is widespread in California and the western small-footed myotis is a common resident of arid uplands in California occurring from on the west and east sides of the Sierra Nevada, and in Great Basin and desert habitats from Modoc to Kern and San Bernardino counties. The range for both species occurs along the western and northern boundaries of the planning area (Zeiner, D.C. et al 1988-1990).

All other life history information for the other three species 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 these species, please refer to Section 3.3.4, pp. 3-169 to 3-170 of the 2005 WEMO Final EIS.

Population Status in the Planning Area

Within the planning area, the CNDDB identifies approximately 3,495 acres of element occurrences for these species on BLM lands (Figure 3.4-57). 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.

Regulatory Status

The regulatory status for the five bat species 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 these species, please refer to Section 3.3.4, pp. 3-169 to 3-170 of the 2005 WEMO Final EIS.

Threats

The threats identified for the five bat species 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 these species, please refer to Section 3.3.4, pp. 3-169 to 3-170 of the 2005 WEMO Final EIS.

Nelson's Bighorn Sheep

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 3.3.5, pp. 3-170 to 3-171 of the 2005 WEMO Final EIS.

Life History

The life history of the bighorn sheep would not change from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) within the planning area. Please refer to Section 3.3.5.1, pg. 3-171

Population Status in the Planning Area

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 CNDDB identifies approximately 136,350 acres of element occurrences for this species on BLM lands (Figure 3.4-58). The amount of acres identified within each subregion is detailed above in Table 3.4-5.

Regulatory Status

The regulatory status of the bighorn sheep would not change from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) within the planning area. Please refer to Section 3.3.5.1, pg. 3-171.

Threats

Threats to this species would not change from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) within the planning area. For a discussion of these threats, please refer to Section 3.3.5.1, pg. 3-171.

3.4.3.2.2 Birds

Southwestern Willow Flycatcher

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 these species, please refer to Section 3.3.6.11, pp. 3-178 to 3-179 of the 2005 WEMO Final EIS.

Life History

In California, the southwestern willow flycatcher is restricted to riparian habitats occurring along streams or in meadows (Craig and Williams 1998; Sogge and others 2010). The structure of these habitats typically consists of a dense mid-story and understory and can also include a dense canopy (60 FR 10695–10715). However, suitable vegetation is not uniformly dense and typically includes interspersed patches of open habitat. Typical plant species associated with their habitat include willow (*Salix* spp.), mulefat (*Baccharis salicifolia*), box-elder (*Acer negundo*), stinging nettle

(*Urtica* spp.), cottonwood (*Populus* spp.), tamarisk (*Tamarix* spp.), and Russian olive (*Elaeagnus angustifolia*). Within the habitat structure parameters discussed above, southwestern willow flycatcher does demonstrate adaptability in that it can occupy riparian habitats composed of native broadleaf species, a mix of native and exotic species, or monotypic stands of exotics (Sogge and others 2010). This subspecies is known to nest in monotypic stands of Russian olive and tamarisk (60 FR 10695–10715). Furthermore, along the San Luis Rey River in San Diego County, southwestern willow flycatcher has nested in riparian habitat dominated by coast live oak (*Quercus agrifolia*), and in Cliff-Gila Valley in New Mexico they are known to nest in tall box-elder. Plant species composition does not seem as important as a dense twig structure and an abundance of live, green foliage (Sogge and others 2010). Also, the location of the nest seems to depend more on suitable twig structure and live vegetative cover than height or plant species composition (Sogge and others 2010).

Southwestern willow flycatcher nesting sites are located near surface water or saturated soils. Due to the variability of hydrologic conditions in Southern California, water availability at a site may range from inundated to dry from year to year or within the breeding season. Nonetheless, moisture levels must remain high enough to support appropriate riparian vegetation (Sogge and others 2010). Dense willow thickets are the most important habitat component for breeding E. t. adastus and E. t. brewsteri in California (Stefani and others 2001).

Southwestern willow flycatchers are insectivorous and forage at the edges or internal openings of their territory, above the canopy or over open water. Their diet consists mainly of bees, wasps, flies, leaf hoppers, and beetles (Durst and others 2008b), which they catch in the air, glean from vegetation, or occasionally pick, catch, or seize from the ground (Sedgwick 2000). Presumably, the diets of migrating *E. t. adastus* and *E. t. brewsteri* are similar.

Southwestern willow flycatcher is predominantly monogamous although reports of polygyny are not uncommon (Sedgwick 2000). Males arrive at the breeding sites between early May and early June (USFWS 2002). Females arrive 1 to 2 weeks after males and inhabit the territory of a male (Finch and Stoleson 2000). Nest building begins approximately 2 weeks after pair formation. The female incubates the eggs for an average of 12 to 13 days. The nestlings fledge between 12 and 15 days after hatching (Sogge and others 2010). Southwestern willow flycatcher will typically renest following an unsuccessful attempt and less frequently may renest following a successful attempt.

Population Status in the Planning Area

In addition to the known breeding sites documented it the 2005 WEMO Final EIS (Section 3.3.6.11, pp. 3-178 to 3-179), the CNDDB 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 CNDDB identifies approximately 17.5 acres of element occurrences for this species (Figure 3.4-59) within the subregions of Juniper Flats and Victorville. However, Critical Habitat and CNDDB element occurrences do not overlap with any BLM lands within the subregions identified and are, therefore, not detailed in Table 3.4-5.

Regulatory Status

The regulatory status for the southwestern willow flycatcher has not changed from the 2005 WEMO Final EIS as described in Section 3.3.6.11, pg. 3-179 (BLM 2005).

Threats

The primary threat to the southwestern willow flycatcher is loss, modification, and fragmentation of suitable riparian habitat (Sogge et al. 2010). In general, increased human populations and development have resulted in a decline of riparian habitat, a habitat type that is naturally rare, patchy, and dynamic in the Southwest due to the varying hydrologic conditions of the region. The specific primary causes for loss and modification of riparian habitats have been dams and reservoirs, water diversion and groundwater pumping, channelization, flood control, agriculture, recreation, and urbanization (Sogge et al. 2010). Other threats include nest parasitism by cowbirds and grazing.

Western Yellow-billed Cuckoo

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 these species, please refer to Section 3.3.6.15, pg. 3-181 of the 2005 WEMO Final EIS.

Life History

In the western United States, nests are typically constructed in willows, Fremont cottonwood, mesquite, hackberry (*Celtis* spp.), soapberry (*Sapindus saponaria*), alder (*Alnus* spp.), or cultivated fruit trees on horizontal branches or vertical forks of the large tree or shrub (Hughes 1999). Nest sites in arid regions are restricted to relatively humid river bottoms, ponds, swampy areas, and damp thickets (Hughes 1999). Foraging occurs extensively in cottonwood riparian habitat (Hughes 1999).

The western yellow-billed cuckoo has a short breeding season, lasting only about 4 months from time of arrival on breeding grounds in the spring to fall migration. Western yellow-billed cuckoos typically lay a single clutch per season in mid-June to mid-July, and incubation occurs over 9 to 11 days (Hughes 1999; Johnson and others 2008). Development of the young is very rapid, with fledgling occurring in 6 to 9 days; the entire breeding cycle may be only 17 days from egg laying to fledging of the young (Hughes 1999). Fledglings are dependent upon parents for up to 3 weeks following fledgling (Johnson and others 2008). Cuckoos are a monogamous species, and both sexes incubate and care for the young (Hughes 1999).

Population Status in the Planning Area

The CNDDB 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 CNDDB identifies approximately 138 acres of element occurrences for this species (Figure 3.4-60) within the subregions of Iron Mountain, Juniper Flats and Victorville. However, these CNDDB element occurrences do not overlap with any BLM lands within the subregions identified and are, therefore, not detailed in Table 3.4-5.

Regulatory Status

The regulatory status for the western yellow-billed cuckoo has been updated from the 2005 WEMO Final EIS (BLM 2005) to include a BLM Sensitive listing in addition to California endangered and proposed threatened under the ESA (as described in Section 3.3.6.15, pg. 3-181 of the 2005 WEMO Final EIS (BLM 2005). Additionally, a decision on the designation of Critical Habitat is pending.

Threats

The western yellow-billed cuckoo is sensitive to habitat fragmentation and degradation of riparian woodlands due to agricultural and residential development (Hughes 1999), and major declines among western populations reflect local extinctions and low colonization rates (Laymon and Halterman 1989). Groundwater pumping and the replacement of native riparian habitats by invasive non-native plants, especially tamarisk, have substantially reduced the area and quality of available breeding habitats for yellow-billed cuckoo (75 FR 69222–69294).

Bendire's Thrasher

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 these species, please refer to Section 3.3.6.1, pp. 3-173 to 3-174 of the 2005 WEMO Final EIS.

Life History

This species breeds in desert areas containing cactus, Mojave yuccas, and Joshua trees.

Population Status in the Planning Area

The CNDDB identifies approximately 14,918 acres within element occurrences for this species within the planning area on BLM lands (Figure 3.4-61). 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 3.4-61).

Regulatory Status

The regulatory status for the Bendire's thrasher has been updated from the 2005 WEMO Final EIS (BLM 2005) to include BLM Sensitive and a USFWS bird of conservation concern in addition to the California Species of Special Concern status (as described in Section 3.3.6.1, pg. 3-173 of the 2005 WEMO Final EIS).

Threats

Identified threats include habitat destruction through rural and urban development, off-road vehicle activity during the nesting season, and removal of yuccas and cholla cacti. Grazing has shown both positive and negative effects on this species. Fragmentation of the small remaining populations is a serious long-term threat.

Burrowing Owl

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 these species, please refer to Section 3.3.6.3, pg. 3-174 of the 2005 WEMO Final EIS.

Life History

Throughout their range, burrowing owls require habitats with three basic attributes: open, well-drained terrain; short, sparse vegetation generally lacking trees; and underground burrows or burrow-like structures (e.g., pipe openings) (Gervais and others 2008; Klute and others 2003).

Burrowing owls are opportunistic predators that will consume arthropods, small mammals, birds, amphibians, and reptiles (Haug and others 1993; Karalus and Eckert 1987; Gervais and others 2008). Owls typically forage in habitats characterized by low-growing, sparse vegetation (Haug and others 1993). In California, crickets and meadow voles were found to be the most common food items (Thomsen 1971).

Nesting in California generally runs from February through August, with peak activity from mid-April to mid-July (Zeiner and others 1990; Thomsen 1971; Gervais and others 2008). Burrowing owls are primarily monogamous and typically breed once per year.

California supports year-round resident burrowing owls and over-wintering migrants (Gervais and others 2008). Many owls remain resident throughout the year in their breeding locales (especially in central and Southern California) while some apparently migrate or disperse in the fall (Haug and others 1993; Coulombe 1971; Barclay 2007).

Burrowing owls exhibit high site-fidelity and reuse burrows year after year, although dispersal distances may be considerable and variable depending on location and the age of the owls. In California, western burrowing owls most commonly live in burrows created by ground squirrels (Gervais and others 2008). Therefore, the suitability and quality of burrowing owl habitat in the planning area is closely and positively related to the occurrence and population health of ground squirrels. In other regions where squirrel burrows do not occur, burrowing owls may depend on

badgers for nest burrow excavation, although this species is a major predator of burrowing owls (Green and Anthony 1997). Where burrowing mammals have been eliminated, burrowing owls may prefer grazed areas where livestock have reduced vegetation height (Wedgwood 1976).

Population Status in the Planning Area

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 CNDDB identifies approximately 1,857 acres of element occurrences for this species on BLM lands (Figure 3.4-62). The amount of acres identified within each subregion is detailed above in Table 3.4-5.

Regulatory Status

The regulatory status for the burrowing owl has been updated from the 2005 WEMO Final EIS (BLM 2005) to include BLM Sensitive and a USFWS bird of conservation concern in addition to the California Species of Special Concern status (as described in Section 3.3.6.3, pg. 3-174 of the 2005 WEMO Final EIS.

Threats

Threats to the burrowing owl would not change from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) within the planning area. For a discussion of these threats, please refer to Section 3.3.6.3, pg. 3-174.

Golden Eagle

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 these species, please refer to Section 3.3.6.5, pg. 3-175 of the 2005 WEMO Final EIS.

Life History

Golden eagles use nearly all terrestrial habitats of the western states, occurring primarily in mountainous canyon land, rimrock terrain of open desert and grassland areas (Kochert and others 2002). In central California, they prefer open grasslands and oak savanna, with lesser numbers in oak woodland and open shrublands (Hunt and others 1998) but can also be found in desert grasslands and chaparral habitats (Millsap 1981). Secluded cliffs with overhanging ledges and large trees are used for nesting and cover. Preferred territory sites include those that have a favorable nest site, a dependable food supply, and broad expanses of open country for foraging. Golden eagles typically forage in open habitats including grasslands and shrublands.

Golden eagles in the planning area are mostly resident, but may move downslope for winter or upslope after the breeding season (Polite and Pratt 1990). Both residents and migratory individuals show fidelity to wintering areas (Kochert and others 2002).

Golden eagles use the same nest each year, alternate nests in successive years, or nest only every other year (Terres 1991). Pairs rarely re-nest when the first clutch is destroyed (Watson 1997) and there are no records of pairs producing more than one brood per year. Golden eagles prefer to locate their nests on cliffs or trees near forest edges or in small stands near open fields (Bruce and others 1982; Hunt and others 1998). Mating occurs from late January through August, with peak activity in March through July. Eggs are laid from early February to mid-May. Incubation lasts 43–45 days (Kochert and others 2002), and the fledging period is 72–84 days (Johnsgard 1990). The young usually remain dependent on their parents for as long as eleven weeks after fledging.

Golden eagles are a top avian predator in the scrubland, grassland, and woodland ecosystems that make up much of the planning area. They feed mainly on leporids (hares and rabbits) and sciurids (ground squirrels, prairie dogs, marmots), but they also take birds, fish, and reptiles, mostly on or near the ground, and they frequently feed on carrion (Kochert and others 2002). They may directly compete with ferruginous hawks and other smaller hawks for small mammals, and with California condors and common ravens for carrion. Territorial interactions with other golden eagles may result in some fatalities.

Population Status in the Planning Area

Golden Eagles are protected under the Bald and Golden Eagle Protection Act. 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 0.5 mile buffer was placed around known golden eagle nest sites in the vicinity of the alternatives (Figure 3.4-63). Based on this buffer, 28,624 acres would be affected by the proposed action or alternatives (Table 3.4-5).

Regulatory Status

The regulatory status for the golden eagle has been updated from the 2005 WEMO Final EIS (BLM 2005) to include a BLM Sensitive listing in addition to the California: Fully Protected, Species of Special Concern (as described in Section 3.3.6.5, pg. 3-175 of the 2005 WEMO Final EIS (BLM 2005).

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	6,099.6
Barstow	BA	1,699.8
Broadwell Lake	BL	5,141.7
Black Mountain	BM	26,590.9
Coolgardie	CG	1,596.1
Cronese Lake	CL	15,611.9
Calico Mountain	CM	31,274.0
El Paso	EP	50,042.4
Fremont Peak	FP	12,575.3
Harper Lake	HL	174.7
Jawbone	JB	82,541.5
Juniper Flats	JF	14,227.4
Johnson Valley	JV	52,893.1
Lancaster	LA	40.9
Middle Knob	MK	35,054.4
Mitchel Mountains	MM	6,751.9
Mojave Trails NM	MT	113,521.7
Newberry-Rodman	NR	83,198.7
North Searles	NS	33,753.4
Ord Mountains	OM	121,524.2
Rands	RA	49,979.8
Rattlesnake Canyon	RC	36,604.6
Ridgecrest	RI	13,317.9
Red Mountain	RM	52,381.0

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
Sierra	SI	184,152.1
Stoddard Valley	SV	98,486.0
Victorville	VV	122.0
Wonder Valley	WV	9,098.0
Total		**1,138,455.0**

Threats

Threats to the golden eagle would not change from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) within the planning area. For a discussion of these threats, please refer to Section 3.3.6.5, pg. 3-175.

Gray Vireo

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information. All other background information for this species 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 these species, please refer to Section 3.3.6.6, pp. 3-175 to 3-176 of the 2005 WEMO Final EIS.

Life History

This species is found on arid slopes dominated by short, densely branched, stiff-twigged shrubs. It is migratory, occurring in the western Mojave Desert from early April until mid-August.

Population Status in the Planning Area

Known distribution data for the gray vireo within the WEMO Planning area is depicted in Figure 3.4-64. Within the planning area, the CNDDB identifies approximately 69 acres of element occurrences for this species on BLM lands within the Rands subregion (Table 3.4-5).

Regulatory Status

The regulatory status for the gray vireo has been updated from the 2005 WEMO Final EIS (BLM 2005) to include USFWS bird of conservation concern in addition to the BLM Sensitive and California Species of Special Concern status (as described in Section 3.3.6.6, pp. 3-175 to 3-176 of the 2005 WEMO Final EIS).

Threats

Identified threats include habitat destruction through rural and urban development, off-road vehicle activity during the nesting season, wildland fires, and removal of yuccas and cholla cacti. Grazing

has shown both positive and negative effects on this species. Fragmentation of the small remaining populations is a serious long-term threat.

LeConte's Thrasher

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information. All other background information for this species 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 these species, please refer to Section 3.3.6.8, pg. 3-177 of the 2005 WEMO Final EIS.

Life History

The habitat for the LeConte's thrasher is creosote bush scrub with stands of cholla cactus, Joshua trees, and thorny shrubs.

Population Status in the Planning Area

Within the planning area, the CNDDB identifies approximately 9,560 acres of element occurrences for this species on BLM lands (Figure 3.4-65). The amount of acres identified within each subregion is detailed above in Table 3.4-5.

Regulatory Status

The regulatory status for the LeConte's thrasher has been updated from the 2005 WEMO Final EIS (BLM 2005) to include USFWS bird of conservation concern in addition to the California Species of Special Concern status (as described in Section 3.3.6.8, pg. 3-177 of the 2005 WEMO Final EIS).

Threats

The primary threat is loss of habitat and fragmentation of habitat into segments too small to support a viable population in the long term. LeConte's thrashers are sensitive to vehicle traffic during the nesting season, especially off road travel in washes.

Bell's Vireo (Least Subspecies)

The Bell's vireo was not included in the 2005 WEMO Final EIS (BLM 2005), but is considered to potentially occur within the planning area based on recent documentation (Dudek and ICF International 2012) and consultation with BLM biologists. The information presented below is based on the species accounts prepared for the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012).

Life History

Bell's vireo is a neotropical migrant that breeds in the summer in riparian scrub. This species is largely associated with early successional cottonwood-willow and are known to nest in riparian woodlands dominated by willow (Peterson and others 2004) and Fremont cottonwood (Kus

2002b). Suitable willow woodlands are typically dense with well-defined vegetative strata or layers. The most critical structural component of nesting habitat in California is a dense shrub layer 2 to 10 feet aboveground (Goldwasser 1981; Franzreb 1989; Brown 1993). The presence of water, including ponded surface water or moist soil conditions, may be an important component of nesting habitat (Rosenberg and others 1991). Bell's vireo may forage in scrub or chaparral habitat near nesting habitat (USFWS 1986b).

Breeding least Bell's vireos begin arriving on their breeding grounds in late March and begin nesting in early April (Kus 2002a). Individuals may remain on the breeding grounds into early October, but nesting is typically finished by the end of July (Kus 1999).

Little is known about the migratory routes of this species. Individuals leave the northernmost breeding grounds by August or September (Barlow 1962). Most have left the United States by early October, although some may remain in the LCR Valley until late November (Brown 1993). During spring migration, adults return to their breeding grounds in early to mid-March and reach the northern limits of the breeding range in May (Brown 1993; Kus 1999). Home range and movement during the breeding season is limited to areas within dense riparian corridors.

Population Status in the Planning Area

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 CNDDB identifies approximately 1,469 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.

Regulatory Status

The least Bell's vireo is both Federally listed and California state listed as endangered. Bell's Vireo is also listed as a Bird of Conservation Concern by the USFWS within the Mojave Desert Bird Conservation Regions (USFWS 2008a). Critical habitat is not found within the study area for this species.

Threats

Historical loss of riparian habitat due to agricultural practices, urbanization, off-road vehicular activity, and exotic plant invasion has contributed to decline of the species (USFWS 2006a, Wildlife Action Plan Team 2006). Loss of breeding habitat due to water source alteration (e.g., channelization, urbanization, and firewood cutting) also threatens the species. In addition, nest parasitism by the brown-headed cowbird has greatly reduced nest success throughout most of its breeding range and has been suggested as a primary cause for decline throughout California. In urbanized areas, where habitat is fragmented and breeding habitat lacks buffers, nest predation may also increase due to meso-predator release and the addition of non-native predators such as domestic or feral cats (USFWS 2006a). The Argentine ant (*Linepithema humile*) also has been noted as a potential nest predator (Peterson and others 2004).

Swainson's Hawk

The Swainson's hawk was not included in the 2005 WEMO Final EIS (BLM 2005), but is considered to potentially occur within the planning area based on recent documentation (Dudek and ICF International 2012) and consultation with BLM biologists. The information presented below is based on the species accounts prepared for the March 2012 draft DRECP baseline biology report (Dudek and ICF International 2012).

Life History

Swainson's hawks breed in the grasslands, shrub-steppe, desert, and agricultural areas of the Columbia Basin, Great Basin, Great Plains, American Southwest, and the Central Valley of California. In California, remnant (or recolonizing) populations in Southern California are found in the western Mojave Desert in the Antelope Valley and in the eastern Mojave Desert in the Mojave National Preserve. Historically, Swainson's hawks nested throughout the California lowlands, including coastal valleys and plains where they no longer occur today. Specific locations where Swainson's hawks have been reported breeding in southeastern California include near Cima Dome and Lanfair Valley in San Bernardino County, at Oasis Ranch in Mono County, and near Lancaster in Los Angeles County. They generally nest in isolated trees, narrow bands of vegetation, or along riparian corridors in grassland, shrubland, and agricultural landscapes. Within the Western Mojave area, Joshua trees (Yucca brevifolia) and non-native ornamental trees or trees planted as windbreaks also function as nest sites. In North America, breeding Swainson's hawks prey chiefly upon small rodents such as young ground squirrels (Spermophilis spp.), pocket gophers (Thomomys spp.), deer mice (Peromyscus spp.), and voles (Microtus spp.). Swainson's hawks arrive on the breeding grounds in March-April.

Population Status in the Planning Area

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 3.4-67. Within the planning area, the CNDDB 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.

Regulatory Status

The Swainson's hawk is California state listed as threatened and is also listed as a Bird of Conservation Concern by the USFWS within the Mojave Desert Bird Conservation Regions (USFWS 2008a).

Threats

Threats to this species include historical loss of riparian habitat due to agricultural practices, urbanization, and contracting range of Joshua trees and riparian habitats in the Mojave Desert (Bloom 1980). Chronic and acute pesticide poisoning also affects the Swainson's hawk (Goldstein et al. 1996, Risebrough et al. 1989).

California Condor (*Gymnogyps californianus*)

Life History

Currently, the condor is found in three disjunct populations: a reintroduced population in both Southern and central–coastal California, a reintroduced population in the Grand Canyon area of Arizona, and a reintroduced population in Baja, California, Mexico.

California condors are primarily a cavity nesting species and typically nest in cavities located on steep rock formations or in the burned out hollows of old-growth conifers. Less typical nest sites include cliff ledges, cupped broken tops of old-growth conifers, and in several instances, nests of other species. California condors are obligate scavengers, feeding only on the carcasses of dead animals, primarily medium- to large-sized mammals, but also occasionally on reptiles and birds. Condor food items within interior California in prehistoric times probably included mule deer (*Odocoileus hemionus*), tule elk (*Cervus elaphus nannodes*), pronghorn antelope (*Antilocapra americana*), and smaller mammals.

Population Status in the Planning Area

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.

Regulatory Status

The California condor is listed as Federally and State Endangered and State Fully Protected.

3.4.3.2.3 Reptiles and Amphibians

Desert Tortoise

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012). All other background information for this species 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 these species, please refer to Section 3.3.2, pp. 3-69 to 3-144 of the 2005 WEMO Final EIS.

Life History

The desert tortoise can be found in a wide variety of habitats, such as alluvial fans, washes, canyons, and saltbush plains (Coachella Valley Conservation Commission 2007; Woodbury and

Hardy 1948; Lovich and Daniels 2000; USFWS 1994). Occupied habitat for populations in the Western Mojave Desert includes valleys, bajadas, and hills with sandy loams to rocky substrates (Germano and others 1994). The vegetation mostly consists of low growing sclerophyll shrubs with mostly winter germinating annuals (Germano and others 1994). Whereas most tortoises in the Mojave Desert are usually associated with creosote bush (*Larrea tridentata*) scrub on alluvial fans and bajadas (USFWS 2008), they can also be found in Saltbush scrub (*Atriplex* spp.) (Stewart 1991) and even in some man-made structures, such as artillery mounds (Baxter 1988).

The presence of shrubs in tortoise habitat is extremely important. Shrubs not only supply shade for the tortoises during hot weather (Marlow 1979), but also the roots provide support and protection for tortoise burrows. For instance, near Twentynine Palms, California, 71% of desert tortoise burrows were associated with creosote bush, and desert tortoises avoided the only community without creosote bush (Baxter 1988). However, other investigators found that burrows were not significantly closer to creosote bush than random sites in areas with vegetation representing both Mojave and Sonoran affinities. Burrows were significantly farther from yucca (*Yucca* spp.) than random sites (Lovich and Daniels 2000). In still another case, burrows were associated with Mojave yucca (*Yucca schidigera*) and catclaw acacia (*Acacia greggii*) even though these species were not particularly abundant (Burge 1978). Wilson and others (1999) found that most juvenile burrows were associated with shrubs. These studies point out that utilization of shrubs varies with the location of the study site; nevertheless, shrubs provide important resources for the desert tortoise.

Several studies have also shown that edaphic (soil) conditions are important for desert tortoises. Tortoises spend up to 98% of their lives underground (Nagy and Medica 1986). Where soils are so sandy that they cannot support the roof of a burrow, tortoises are unlikely to utilize the area (Baxter 1988). In a multivariate analysis of tortoise abundance criteria, Weinstein and others (1986) indicated that "soil digability" is a significant regression variable (i.e., this variable accounted for a significant amount of the variance in habitat use). Conversely, if a caliche horizon (a hardened deposit of calcium carbonate) is present, it may be so hard that tortoises cannot successfully burrow under it. For instance, at the Twentynine Palms Marine base, Baxter (1988) found that every "tank pit" supported tortoise burrows, most often located just under the hardpan.

Desert tortoises are herbivores, and wildflowers, grasses, and in some cases, cacti make up the bulk of their diet (USFWS 2010e; Woodbury and Hardy 1948). Some of the more common herbaceous species utilized by the desert tortoise include desert dandelion (*Malacothrix glabrata*), primrose (*Oenothera* spp.), gilia (*Gilia* spp.), showy desert- marigold, and filaree. Additionally, tortoises may eat some grasses, such as Indian rice grass (*Oryzopsis hymenoides*) or galleta grass (*Hilaria rigida*), although the nutritional value may be less. Also, tortoises are known to eat some cacti such as prickly pear (*Opuntia mohavensis*), beavertail (*Opuntia basilaris*), and various cholla cacti (*Opuntia* spp.). Spring desert annuals and grasses are particularly important in that they supply tortoises with much needed water (USFWS 2010e), which can be stored by desert tortoises for long periods of time (Marlow 1979; Woodbury and Hardy 1948). In Twentynine Palms, California, desert tortoises were found in plant communities with high plant species diversity, such as washes and ecotones between communities (Baxter 1988). Although tortoises were captured more frequently in the diverse wash community—significantly more than expected based on a random distribution—this could be a result of higher visibility to the surveyors in these areas. Nevertheless, their burrows were also significantly closer to ecotones than a set of

random points. The use of these high plant diversity areas may therefore be related to increased food availability or possibly the nature of the annual herbs found in these areas.

In addition to the description of tortoise activity presented in the 2005 WEMO Final EIS (BLM 2005) (3.3.2.3, pp. 3-73 to 3-74), tortoise activity is focused on its home range and is primarily determined by temperature (USFWS 1994). Nevertheless, some relocated tortoises have moved significant distances from their release point, including crossing major highways (Stewart 1991). Duda and others (1999) found that tortoise home ranges tend to shrink during periods of drought compared to years of high rains. Following winter hibernation, tortoises become active as low temperatures abate in the spring months. During the spring, tortoises are active throughout the day, foraging on the fresh shoots of annual plants. But as the heat continues to increase into the summer months, tortoises are active only in the cooler morning, late afternoon, and evening hours. During the hot daytime temperatures, tortoises retreat to burrows to wait it out or, in some cases, will aestivate through the summer.

In addition to the description of tortoise activity presented in the 2005 WEMO Final EIS (BLM 2005) (3.3.2.3, pp. 3-75 to 3-76), the desert tortoise breeds in the late summer and fall, before going into hibernation for the winter. Males will "joust" to establish loosely defined home ranges, but these can overlap and are not exclusive. Home range size can vary dramatically, from 10 to over 450 acres (USFWS 1994). Females begin breeding at about 15 to 20 years of age, and will store the male's sperm (Gist and Fisher 1993; Turner and Berry 1984). Egg laying occurs in the spring, but occasionally may also take place in the fall. Incubation is typically about 100 days, with the eggs hatching in the late summer and early fall. There is little or no parental care of the nest or the young. The sex of the offspring is determined by the incubation temperature; females being hatched at higher ground temperatures (above 89°F) while males are hatched below this temperature (Spotila and others 1994). Desert tortoises can produce from one to three clutches of eggs per year. On rare occasions, clutches can contain up to 15 eggs; most clutches contain 3 to 7 eggs, with an average clutch size of 4.5 eggs (Turner and others 1984, 1986).

The desert tortoise is a primary consumer; that is, they feed on plants. As such, they compete for vegetation resources with other primary consumers, such as the desert iguana, Gambel's quail, mourning dove (*Zenaida macroura*), pronghorn antelope, and domestic cattle (*Bos taurus*). Adult tortoises are preyed on by few other animals; however, some may be taken by coyote and kit fox. Young tortoises are routinely preyed upon by kit fox and common raven.

Desert tortoise burrows supply important shade and thermoregulatory resources for a variety of species, including many species of snakes, insects and spiders, and small mammals.

Population Status in the Planning Area

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), pp. 3-76 to 3-91, 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. See *Status of the Desert Tortoise and Critical Habitat*, http://www.fws.gov/nevada/desert_tortoise/documents/misc/status-desert-tortoise.pdf posted 02/10/2014.

Approximately 979,878 acres of designated Critical Habitat exists within the planning area (Table 3.4-10 and Figure 3.4-68).

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	639.4
Black Mountain	BM	93,098.8
Calico Mountains	CM	29,146.2
Coolgardie	CG	81,795.7
Cronese Lake	CL	80,354.9
El Mirage	EM	27,111.3
El Paso	EP	67.9
Fremont Peak	FP	72,950.2
Harper Lake	HL	27,296.4
Iron Mountain	IM	8,486.7
Johnson Valley	JV	4,919.1
Joshua Tree	JT	103,059.9
Kramer Hills	KH	65,734.5
Lancaster	LA	1,370.2
Mitchel Mountains	MM	13,936.5
Mojave Trails NM	MT	1,195.9
Newberry-Rodman	NR	101,437.6
Ord Mountains	OM	106,658.7
Rands	RA	52,712.4
Red Mountain	RM	107,571.2
Victorville	VV	334.7
Total		**979,878.2**

[1]NA = 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 3.4-68). 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	28,526.1
Coolgardie	CG	Superior-Cronese	65,398.5
Cronese Lake	CL	Superior-Cronese	77,624.1
El Mirage	EM	Fremont-Kramer	29,190.6
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
		Superior-Cronese	8,650.6
Johnson Valley	JV	Ord-Rodman	173.5
Joshua Tree	JT	Pinto Mountains	108,034.0
Kramer Hills	KH	Fremont-Kramer	65,732.6
Lancaster	LA	Fremont-Kramer	1,367.0
Mitchel Mountains	MM	Superior-Cronese	13,904.0
Mojave Trails NM	MT	Pinto Mountains	159.7
Newberry-Rodman	NR	Ord-Rodman	104,362.0
Ord Mountain	OM	Ord-Rodman	100,325.2
Rands	RA	Fremont-Kramer	20,434.8
Red Mountain	RM	Fremont-Kramer	59,765.4
		Superior-Cronese	50,402.3
Victorville	VV	Fremont-Kramer	334.6
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 Natural Area (DTNA) in 1976. The DTNA 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 DTNA 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 DTNA ACEC are located within the Rands subregion of the planning area (Figure 3.4-68). It has one of the highest known densities of desert tortoises per square mile in the species' geographic range (California, Utah, Nevada, Arizona and northwest Mexico). Tortoise populations are from 100 to 200 per square mile in some parts of the DTNA.

Regulatory Status

The information from the 2005 WEMO Final EIS (BLM 2005) (Section 3.3.2.1, pg. 3-69), is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012).

The Agassizi's desert tortoise (*Gopherus agassizii*) (hereafter simply referred to as desert tortoise) is both a California state- and Federally listed threatened species. Critical habitat for desert tortoise was first designated for the Beaver Dam Slope (Utah) population in 1980 (45 FR 55654–55666). An initial recovery plan for the Mojave population of the desert tortoise was completed in 1994 (USFWS 1994). A revised draft recovery plan was completed in 2008 (USFWS 2008 and finalized in 2011 (USFWS 2011).

Under the 2011 Recovery Plan (USFWS 2011), a revision of the desert tortoise recovery units was made reducing the initial six units to five based on recent genetic work (Murphy and others 2007; Hagerty and Tracy 2007). The principal changes are results of combining and expanding the previous northern Colorado and eastern Colorado units into one (i.e., Colorado Recovery Unit), a contraction of the Eastern Mojave Recovery Unit, an appurtenant expansion of the Northeastern Recovery Unit, and a contraction of the southern extreme of the Western Mojave Recovery Unit in the vicinity of the Coachella Valley.

Threats

Threats to desert tortoises within the WEMO Planning Area have not changed from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) and associated 2006 Biological Opinion, except as discussed herein. For a discussion of these threats, please refer to the 2006 Biological Opinion in Appendix F.

Mojave Fringe-toed Lizard

The information from the 2005 WEMO Final EIS (BLM 2005)is supplemented by the following updated information from the DRECP Baseline Biology Report (March 2012), field data collected by the Barstow Field Office, and other literature cited herein. All other background information for this species 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 these species, please refer to Section 3.3.7.1, pp. 3-182 to 3-183 of the 2005 WEMO Final EIS.

Life History

The Mojave fringe-toed lizard is best described as an opportunistic omnivore. They feed primarily on sand-dwelling insects, but will also feed on the flowers, leaves, and seeds of annual plants (Jarvis 2009). Juvenile Mojave fringe-toed lizards feed primarily on arthropods including ants, beetles, and scorpions. As is seen in many reptiles that live in arid environments, these lizards obtain most of their water from the insects and plants that they ingest (76 FR 61321–61330).

Mating typically occurs between April and late June (76 FR 61321–61330). Reproductive activity is highly dependent on the availability of sand-dwelling plants that grow in response to winter (October–March) rainfall (76 FR 61321–61330). Clutch size ranges from two to five eggs, but average two or three eggs (Miller and Stebbins 1964). During years with low rainfall females produce smaller clutch sizes, or none at all. Conversely, they may have multiple clutches in years with abundant rainfall (76 FR 61321–61330).

Mojave fringe-toed lizards are most active from late spring through early fall, when they are active during the hotter periods of the day. They seek refuge in burrows or under the sand when daytime surface temperatures start to exceed 49°C (120°F).

Population Status in the Planning Area

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, Rasor 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 recent 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 3.4-69). 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 3.4-69). 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	2,895.4
Barstow	BA	3,339.6
Joshua Tree	JT	1,418.9
Mojave Trails NM	MT	13,562.2
Wonder Valley	WV	1,223.9
Total		**22,440.0**

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, Rasor, 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
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. Two (Edwards North and Cuddeback Dry Lake Bed) of the four parcels did not contain suitable habitat for the Mojave fringe-toed lizard. Big Rock Creek Wash and 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.
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.

Regulatory Status

The regulatory status for the Mojave fringe-toed lizard has been updated from the 2005 WEMO Final EIS (BLM 2005) to include BLM Sensitive in addition to the California Species of Special Concern status (as described in Section 3.3.7.1, pg. 3-182 of the 2005 WEMO Final EIS (BLM 2005).

Threats

Threats to the Mojave fringe-toed lizard would not change from the previous analysis provided by the 2005 WEMO Final EIS (BLM 2005) within the planning area. For a discussion of these threats, please refer to Section 3.3.7.1, pp. 3-182 to 3-183.

Northern Sagebrush Lizard

Life History

The sagebrush lizard occurs in a wide variety of open forest and shrub habitat types and utilizes mammal burrows and rock crevices as hibernation sites during cold periods (Zeiner et al 1990). Individuals are active from March or April to late September or early October (Zeiner et al 1990). The reproductive season usually extends from late May to July (Zeiner et al 1990). Egg-laying usually occurs in June or July (Stebbins 1954) with newly emergent hatchlings observed from mid-August to late September (Zeiner et al 1990).

Population Status in the Planning Area

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 3.4-70. Within the planning area, the CNDDB identifies approximately 10 acres of element occurrences for this species on BLM lands within the Sierra subregion (Table 3.4-5).

Regulatory Status

The sagebrush lizard is a BLM Sensitive species.

Threats

Threats to this species have not been identified for the planning area, but would most likely be similar to those described for the Mojave fringe-toed lizard including loss of habitat, an increases in local predator (i.e., common ravens), and OHV activities.

Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)

Life History

The Tehachapi slender salamander inhabits moist canyons and ravines in oak and mixed woodlands. Vegetation in occupied habitat includes foothill pine, canyon live oak (*Quercus chrysolepis*), interior live oak, blue oak, Fremont cottonwood (*Populus fremontii*), western sycamore (*Platanus racemosa*), and California buckeye. In more exposed areas of Caliente Creek, habitat includes California juniper (*Juniperus californica*), yucca (*Yucca* spp.), bush lupine (*Lupinus* spp.), and buckwheat (*Eriogonum* spp.). In the lower elevation Caliente Creek areas, the species is restricted to the lower margins of northfacing slopes and side canyons among granitic or limestone talus and scattered rocks. The species also occurs on north-facing slopes in the Tehachapi Mountains within talus piles and fallen wood.

Individuals are primarily active November through May. During the moist periods of fall, winter, and spring precipitation, individuals seek cover under surface objects, especially rock talus during the day. Other substrates that may be used for cover include rocks, logs, bark, and other debris in moist areas but they are primarily associated with talus.

Similar species lay their eggs underground or on moist substrates underneath or within surface objects, especially pieces of bark. It is unknown how or whether juvenile Tehachapi slender salamander habitat differs from that of adults. Juveniles are rarely found, which may indicate that hatching occurs in the spring, as surface activity declines, and that juveniles may remain underground. As a semifossorial species, the Tehachapi slender salamander is able to enter termite tunnels, earthworm burrows, and other small openings not accessible to larger salamanders.

Population Status in the Planning Area

The species is primarily found in Kern County, CA in the subregions of Jawbone, Middle Knob and Antelope Valley.

Regulatory Status

The Tehachapi slender salamander is California state listed as threatened and is a BLM Sensitive Species.

Southwestern Pond Turtle (*Clemmys marmorata pallida*)

The information from the 2005 WEMO Final EIS (BLM 2005) is supplemented by the following updated information. All other background information for this species would not change from the previous analysis included in the affected environment of the 2005 WEMO Final EIS (BLM 2005).

Life History

The southwestern pond turtle is found south of San Francisco Bay including the West Mojave Planning Area (WMPA) and is a subspecies of the western pond turtle. General life history information for this species can be found in the 2005 WEMO Final EIS (BLM 2005).

Population Status in the Planning Area

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 occur within 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).

Regulatory Status

The Southwestern pond turtle is a federal USFWS Species of Concern, BLM Sensitive Species, and California Species of Special Concern.

Threats

Several threats to western pond turtle within the WEMO Planning Area have been identified. In Afton Canyon, the habitat is severely degraded as a result of ground water depletion from human activities and by infestations with the exotic shrub salt cedar (*Tamarix ramosissima*) (Lovich and Myer, 2001). "Betty Ford Crossing" is currently the single most viable habitat patch within Afton Canyon, but it is not the most protected habitat for this species since a currently designated open route crosses the river at this point and any remaining turtles are subject to crushing by vehicles (Lovich and Puffer, 2016).

Within Afton Canyon an additional risk is presented by a major rail line that parallels the Mojave River for most of its course crossing the river at two points. The proximity of trains to the riparian system provides the potential for toxic spills from wrecks (Lovich and Myer, 2001). Both spills and illegal dumping of toxic materials have occurred at Afton Canyon in the past.

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 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 needs.

3.5.1 Regional Economic Profile

The following information pertaining to existing economic and demographic conditions in the planning area is excerpted from the Socio-Economic Analysis developed for the 2005 WEMO Final EIS prepared by Alfred Gobar and Associates. Those data have been supplemented by being revised to reflect updated U.S. Census Bureau data, and additional discussion focusing on the role of access has been added. The complete socio-economic technical report is contained in Appendix N of the 2005 WEMO Final EIS. In addition, the presentation of the information in this section has been revised from that previously provided in the 2005 WEMO Final EIS by being focused on the role of access.

Encompassing nearly 9.4 million acres, the planning area is a substantial geographic region. This large study area includes over 974,000 residents per 2008-2012 ACS data, and encompasses portions of five separate counties. Motor vehicle access through such a large area is key to providing regional connectivity in such a dispersed area. The vast majority of travel is funneled to key arterial Interstates, highways and County roads, but access drives connectivity and commerce through all parts of the planning area, both for area residents and for all of Southern California.

In totality, the West Mojave's existing population base is significant, but also widely dispersed in scattered concentrations ranging from as few as less than 30,000 residents in the Barstow and Ridgecrest areas to more than 300,000 in the Palmdale-Lancaster area of Los Angeles County and the Victor Valley area of San Bernardino County. Given the large geographic area and widely dispersed population, motorized vehicle access is the key to maintaining regional connectivity across the area. The vast majority of motorized vehicle travel in the area is based on funneling traffic from dispersed areas into a few major arteries including interstate highways, State highways, and County roads. The planning area services this burgeoning, but widely dispersed, population that has, and uses the high desert as its recreational backyard.

Regional Environment

The WEMO planning area is also situated along the periphery of Southern California and its huge metropolitan population and employment base. Overall economic growth and trends throughout the WEMO Planning area are still greatly influenced and driven by growth and economic trends associated with the larger economic region of Southern California. The six-county Southern California region (Los Angeles, Orange, San Diego, San Bernardino, Riverside, and Ventura counties) had 21 million residents and 11 million nonagricultural wage and salary jobs in 2010.

A large number of workers residing in outlying areas, including the West Mojave planning area, commute to jobs in the more developed regions of Southern California because of the high volume of employment opportunities. Growth in employment throughout Southern California is one of the principal factors driving demand for living in outlying subregions, such as the West Mojave. Recent census data from 2010 strongly suggest that population and housing growth throughout the West Mojave was substantially concentrated within cities and unincorporated enclaves located closest to the major employment centers of Southern California. As a result, the WEMO Planning area population base has not been considered a self-generating economy even though certain industries such as aerospace, mining, military and government operations have long provided local employment to area residents.

This is rapidly changing. In 2000, about one in five workers residing in cities throughout the West Mojave commuted at least 60 minutes each way to work. In 2010, the average commute time in cities throughout the West Mojave was 29.5 minutes. The rapid growth of high desert cities has created an economy that is sustaining itself, but still relies to a large extent on the influx of dollars from other Southern California areas.

The planning area provides the major connecting corridor between the Southern California area and two other key metro areas—the Las Vegas metro area and the Central Valley of California. Recreation-, service- and tourism-sector jobs in the planning area are largely influenced by the economic conditions in Southern California and these other metro areas. Other jobs in the high desert continue to service these metro populations, such as energy generation and transmission, and mining.

Between 1980 and 2010 nonagricultural employment in Southern California grew 88.0 percent from 5.85 million jobs in 1980 to 11.0 million in 2010, outpacing the national growth rate. U.S Growth nonagricultural employment growth over this same time period was 58.0 percent. Aggregate employment has grown at a slower rate in absolute and relative terms since 1990 as a result of significant job losses during the early 90's. The overall slower pace of employment growth is indicative of broader trends describing the outlook of future economic growth in the region.

Regional Trends in Population and Employment

A wide variety of socioeconomic factors can be evaluated with regards to growth trends, but changes in population, employment, and housing tend to reflect principal drivers of urbanization and associated economic activity, and these in turn affect and are affected by the transportation network.

Total population within the six-county region of Southern California, plus Kern County, grew by 8.0 million residents over the 30-year period from 13.8 million residents in 1980 to 21.8 million residents in 2010. The resident population of Inyo County has remained relatively static since 1980 (about 18,000 residents) and is not explicitly evaluated in relation to regional trends since it hosts roughly 600 residents, or less than 0.1 percent of the WEMO population.

The total population throughout Southern California grew at an average annual rate of 1.93 percent. Los Angeles County continues to account for the largest share of the population in Southern California. The pattern of growth, however, is shifting and outlying subregions are capturing a greater share of total growth. Since 1980, outlying counties such as Riverside, San Bernardino, and Kern County have steadily increased their respective share of total population.

As shown in Table 3.5-1, nonagricultural employment trends since 1970 has followed population growth in the planning area. Agriculture (including grazing activities) and mining have a long history in the WEMO Planning area, but account for less than 1 percent of current employment opportunities. Non-agricultural employment correlates better than total employment with household formation, associated housing demand, and population growth since a large segment of agricultural employment is transient and seasonal with limited capacity to occupy market rate housing. Non-agricultural employment growth will constitute a principal force driving future housing growth and urbanization in the WEMO Planning area. Employment directly associated with recreation accounts for about 2 percent of total service-based employment, but is growing. Accommodation and food services are a much larger proportion of total service-based employment, and are increasing at a faster rate than other sectors. While most of the services employment is expected to support the local population and through travelers, some proportion of it is also related to recreation and motorized vehicle access on public lands in the West Mojave, which accounts for about 1 percent of current employment opportunities or about 2,500 jobs in the area.

Factors that augment the current employment base of the WEMO Planning area include a higher proportion of service and trade sector jobs (consistent with rural and emerging growth areas). The WEMO Planning area also has a moderately higher mix of government jobs, reflecting the historical role of federal and state agencies in the region. The manufacturing base within the WEMO Planning area is significantly underrepresented by comparison to the broader Southern California economy.

Table 3.5-1. WEMO Planning Area Employment Since 1970

Sector	1970	1980	1990	2000	2011	Change 1970-2011 (%)	Change 1990-2011 (%)
Farm/Agriculture Services	31,611	46,428	42,019	68,182	52,503	66	25
Mining	8,324	14,017	17,009	11,427	15,667	37	-8
Construction	15,924	29,521	58,625	60,851	61,308	282	5
Manufacturing	41,808	49,945	65,849	86,538	65,740	57	-<1
Services	119,657	294,705	470,470	634,888	814,242	580	73
Government	103,363	122,057	160,440	178,983	199,450	93	24

Source: EPS-HDT 2013

Not only is total employment in Southern California slowly increasing, but the outlying areas which comprise the WEMO Planning area are capturing larger shares of the growth. In 1980, Los Angeles County accounted for 62.1 percent of nonagricultural employment throughout the Southern California region, including Kern County. In 2010, Los Angeles County's respective share was down to 47.3 percent. By comparison, San Bernardino County captured an increasing share of employment (from 4.2 percent in 1980 to 7.2 percent in 2010), while the corresponding share for Kern County has remained relatively constant (2.9 percent). Both Riverside and San Bernardino County are commonly recognized as a single metropolitan statistical area (Inland Empire) for purposes of tracking socio-economic trends. On the basis of this definition, the Inland Empire has led Southern California in net employment gains since 1990 (314,400 jobs). As these

trends suggest, the proportionate share of nonagricultural employment growth has been shifting over the 30-year reference period, principally from Los Angeles County to the other six counties. As detailed in Table 3.5-1, a large amount of the nonagricultural employment growth has taken place in the projected area, as is evidenced by the elevated gains in employment over the past decades.

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. Most of the grazing operations on public land within the planning areas are small family operations. As the permittee or lessee has aged and is less able to run their grazing operation stocking rates have typically declined. Unless a younger family member or partner is capable of maintaining the grazing operation, in addition to stocking rates declining, fewer range improvements are maintained 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 parent's footsteps and continue family sheep operations. Overall, the AUMs that BLM may annually authorize under good conditions 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.

Study Area Demographics

The demographic characteristics of the eleven incorporated cities which make up the WEMO Planning area are shown in Table 3.5-2.

Table 3.5-2. 2010 Census Demographic Comparison, Incorporated Cities Within West Mojave Plan Region

Census Variable	Combined Cities	City of Adelanto	Town of Apple Valley	City of Barstow	City of California City	City of Hesperia	City of Lancaster	City of Palmdale	City of Ridgecrest	City of Twentynine Palms	City of Victorville	City of Yucca Valley
Total Population	726,482	31,765	69,135	22,639	14,120	90,173	156,633	152,750	27,616	25,048	115,903	20,700
% Share of Total	100.0%	4.4%	9.5%	3.1%	1.9%	12.4%	21.6%	21.0%	3.8%	3.4%	16.0%	2.9%
Population Growth (1990-2010)	85.1%	273.0%	50.0%	5.4%	137.1%	78.9%	231.2%	121.9%	-0.4%	111.9%	185.0%	51.2%
Families as % of Households	76.6%	84.2%	75.0%	67.0%	70.6%	80.0%	74.4%	82.3%	66.5%	72.2%	79.6%	63.5%
Population in Group Quarters	3.5%	5.5%	0.7%	1.6%	18.5%	0.0%	5.3%	0.1%	0.3%	13.4%	4.4%	1.1%
Average Household Size	3.1	3.8	2.9	2.8	2.8	3.4	3.2	3.6	2.5	2.7	3.4	2.5
Housing by Tenure Owner-Occupied	62.4%	57.8%	69.1%	49.0%	60.3%	66.9%	60.4%	67.9%	60.5%	33.9%	61.8%	63.5%
Renter-Occupied	37.6%	42.2%	30.9%	51.0%	39.7%	33.1%	39.6%	32.1%	39.5%	66.1%	38.2%	36.5%
Unit Vacancy	10.3%	14.0%	9.6%	15.4%	21.3%	8.9%	9.3%	7.7%	9.5%	14.2%	11.2%	13.4%
Median Housing Value	$178,745	$118,500	$230,300	$123,300	$145,100	$193,700	$214,800	$227,300	$191,100	$166,300	$172,500	$183,300
Median Rent	$970	$1,034	$986	$782	$878	$1,067	$1,113	$1,130	$777	$927	$1,091	$888
Median Household Income	$49,935	$42,208	$50,664	$45,417	$53,768	$48,624	$52,290	$55,213	$59,830	$43,412	$52,357	$45,502

Table 3.5-2. 2010 Census Demographic Comparison, Incorporated Cities Within West Mojave Plan Region

Census Variable	Combined Cities	City of Adelanto	Town of Apple Valley	City of Barstow	City of California City	City of Hesperia	City of Lancaster	City of Palmdale	City of Ridgecrest	City of Twentynine Palms	City of Victorville	City of Yucca Valley
Workforce Characteristics Workers per 1,000 Population*	418	304	418	441	413	412	412	430	498	566	394	416
Occupation (Age 16+) White Collar*	69.0%	63.1%	70.3%	68.3%	69.0%	65.4%	70.7%	69.4%	73.1%	70.1%	67.9%	68.9%
Blue Collar	31.0%	36.9%	29.7%	31.7%	31.0%	34.6%	29.3%	30.6%	26.9%	29.9%	32.1%	31.1%
Average Commute Time	29.5	38.6	29.8	24.3	32.6	39	30.7	40.1	14.3	14	34.5	26.3

*2000 Census

Source: Alfred Gobar Associates; U.S. Bureau of the Census.

The West Mojave extends across large portions of four Southern California counties (Los Angeles, San Bernardino, Kern, and Inyo), which all combined have 12.7 million residents (2010 Census) or nearly 37.2 percent of the Statewide population (34.1 million residents). Demographic characteristics describing an area are most often compared to corresponding characteristics describing a larger geographic setting of which it is a part. Roughly 80 to 90 percent of all residents within Southern California, however, reside in areas that are substantially more developed and urbanized than is the case with the WEMO Planning area. As noted in Table 3.5-3, counties within the planning area are anticipated to grow by double digits over the 2010 to 2030 timeframe. All of the counties, except Inyo and Los Angeles, are expected to grow at a rate that exceeds that of the state.

Table 3.5-3. Population Projections in the WEMO Planning Area

Geography	2010	2020	2030	2040	2050	2060	% Change 2010-2030	% Change 2010-2060
Inyo*	18,528	19,350	20,428	22,009	23,053	23,921	10.2	29.1
Kern	841,146	1,057,440	1,341,278	1,618,681	1,858,455	2,055,622	59.5	144.3
Los Angeles	9,824,906	10,441,441	10,950,335	11,243,022	11,434,565	11,562,720	11.5	17.7
Riverside*	2,191,886	2,593,211	3,046,064	3,462,256	3,828,798	4,216,816	39.0	92.3
San Bernardino	2,038,523	2,273,017	2,626,945	2,988,648	3,248,440	3,433,047	28.9	68.4
California	37,309,382	40,643,643	44,279,354	47,690,186	50,365,074	52,693,583	18.7	41.2

Source: California Department of Finance 2013.
*contains only one census tract within the planning area.

Typical population densities generally range from roughly 2,500 persons per square mile in growing suburban areas to more than 7,500 persons per square mile in urbanized areas. By comparison, the corresponding population density for the eleven WEMO Planning area cities combined (accounting for 71 percent of the planning area population base) only averages about 865 persons per square mile (726,482 residents in 2010 divided by 840 square miles). The Census Bureau utilizes a minimum threshold of 1,000 persons per square mile to denote an urbanized setting. The WEMO Planning area is more characteristic of a large rural environment. As such, demographic traits that describe the WEMO Planning area reflect distinctly different circumstances than is true for more urbanized portions of Southern California, thereby minimizing the usefulness of direct comparisons. Instead, the State of California, which includes a sizeable rural population, serves as a more appropriate reference for comparing overall distinctions describing WEMO Planning area residents.

Compared to the State as a whole, the WEMO Planning area consists of a relatively young population base. The planning area includes a heavy composition of families, and similarly has a greater proportion of residents 20 years of age or younger than the State. As result, there are relatively fewer small households (two persons or less). The West Mojave is still attracting a large number of new households but at a whole. The affordability of housing in the WEMO Planning area remains a principal attraction to the new households, resulting in population

growth rates in the planning area being higher than in the more fully developed areas of the Inland Empire, and the attraction of those households to lower-cost, local recreation and tourism options.

Workforce participation (workers, not jobs) among West Mojave households continues to lag the State and Southern California economy. Census data (2010) indicates there was an average of 1.35 workers (persons indicating a place of work) per household throughout the WEMO Planning area compared to a State-wide average of approximately 1.47 workers per household. Similarly, current estimates of local employment (local jobs, as distinct from resident workers) also indicate that there are fewer job opportunities in the WEMO Planning area (1.14 jobs per occupied household) than is true for the State economy or Southern California as a whole (1.34 jobs per household). The incidence of local job opportunities in the WEMO Planning area, is comparable to slightly less than other outlying regions of Southern California, including Kern County (1.33 jobs per household) and the Inland Empire (1.24 jobs per household).

Demographic traits and growth trends describing the WEMO Planning area overall vary considerably within the planning area. The San Bernardino sub-area of the planning area accounts for 64 percent of the planning area's land area, nearly 49 percent of the 2000 resident population, and nearly 48 percent of population growth between 1990 and 2000. By comparison, the Los Angeles sub-area only accounts for 7 percent of the planning area's land area, but 41 percent of the 2000 resident population, and over 50 percent of corresponding population growth. The Kern sub-area accounted for 11 percent of the 2000 population base, but less than 2 percent of total corresponding growth. The Inyo sub-area, with roughly 600 residents, accounts for less than 0.1 percent of the WEMO planning area population base and has experienced an overall decline in population since 1990. On a combined basis, the Los Angeles and San Bernardino sub-areas accounted for over 98 percent of total population growth between 1990 and 2000.

The population growth and changes in the planning area add stress to the transportation network in several ways:

- Regional and Planning Area population growth adds more vehicles to the existing network;
- Planning Area population growth requires retooling of the network and its uses as new communities are constructed, become more densely populated, and require additional access needs;
- The modest income characteristics of the Planning Area population also favor closer-to-home recreation options that add more vehicles to the existing network;
- Population growth in outlying portions of the Planning Area results in increases in average commute times and therefore a greater number of vehicle miles traveled per person; and
- The youthfulness of Planning Area population growth increases the number of persons engaged in vehicle-based recreation, and in particular in OHV use.

3.5.2 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 in the planning area, this recreation travel adds to socioeconomic activity by supporting local businesses and related jobs.

Table 3.5-4 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 3.5-4. 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
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 3.5-5 addresses the various ways by which recreation opportunities in various areas of the WEMO Planning area contribute dollars to local economies.

Table 3.5-5. 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.
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

Table 3.5-5. 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
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.
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.

Table 3.5-5. 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
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	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.
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.
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.

Table 3.5-5. 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
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.

Source: Advance Resource Solutions, Inc.

3.5.3 Environmental Justice

3.5.3.1 Regulatory Framework

Executive Order 12898

In 1994 President Clinton issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, to direct federal attention on environmental and human health conditions in minority and low- income communities. EO 12898 promotes nondiscrimination in federal programs that substantially affect human health and the environment, and it guarantees information access and public participation relating to these matters. This order requires federal agencies to identify and address any disproportionately high or adverse human health or environmental effects on minority and/or low-income populations resulting from programs, policies, and activities of federal agencies. The Council on Environmental Quality (CEQ) oversees federal compliance with EO 12898.

Council on Environmental Quality's Environmental Justice Guidance under the National Environmental Policy Act

To ensure that federal agencies effectively identify and address environmental justice concerns according to EO 12898, the CEQ, in consultation with the Environmental Protection Agency (EPA), developed guidance to assist federal agencies to implement procedures. According to the CEQ's *Environmental Justice Guidance under NEPA*, agencies should consider the composition of affected areas to determine whether minority or low-income populations are affected by a proposed action, and, if so, whether those environmental effects may be disproportionately high or adverse (CEQ 1997).

According to the CEQ environmental justice guidelines, minority populations should be identified if:

- A minority population percentage either exceeds 50% of the population of the affected area, or:
- If the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (e.g., a governing body's jurisdiction, neighborhood census tract, or other similar unit).

Environmental Protection Agency (EPA) Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses

The EPA's *Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses* defines how the EPA will ensure that disproportionately high and adverse human health or environmental effects on minority communities and low-income communities are identified and addressed. It establishes agency-wide goals for engaging American Indian, Alaska Native, Native Hawaiian, and other indigenous peoples. It also establishes agency-wide goals for environmental protection and lists actions the EPA would take to incorporate environmental justice into its mission (EPA 1998).

Environmental Protection Agency Plan Environmental Justice 2014

The EPA's Plan Environmental Justice (EJ) 2014 is a strategy to help the agency integrate environmental justice into its programs, policies, and activities. Plan EJ 2014 identifies Cross-Agency Focus Areas, Tools Development, and Program Initiatives as the three essential elements that will advance environmental justice across the EPA and other agencies of the federal government.

Bureau of Land Management Land Use Planning Handbook, Appendix D

The Plan Area includes all or part of the following Department of Interior (DOI) Bureau of Land Management (BLM) field office jurisdictions:

- Ridgecrest
- Barstow
- Needles

- Palm Springs/South Coast

Appendix D (Social Science Considerations in Land Use Planning Decisions) of the BLM Land Use Planning Handbook provides guidance on integrating social science information into the planning process for projects within BLM lands. Any information gathered for planning purposes must be considered in the context of BLM's legal mandates. To be effective, social scientific data and methods identified in Appendix D must be integrated into the entire planning process (BLM 2005). Furthermore, Section IV (Environmental Justice Requirements) of Appendix D provides guidance for assessing potential impacts on population, housing, and employment as they relate to environmental justice. It also describes variables such as lifestyles, beliefs and attitudes, and social organizations with respect to environmental justice.

Defining Environmental Justice Populations

The CEQ Environmental Justice Guidance defines "minorities" as individuals who are members of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black not of Hispanic origin, or Hispanic (CEQ 1997). The total minority population has been calculated by subtracting the white alone, not Hispanic or Latino, population from the total population. An environmental justice population is identified when the minority population of the potentially affected area is greater than 50% or the minority population percentage is meaningfully greater than the minority population in the general population or other appropriate unit of geographical analysis. For this analysis, any census tract with a minority population greater than 50% was identified as an environmental justice tract of concern.

The CEQ Environmental Justice Guidance defines "low-income populations" as populations with mean annual incomes below the annual statistical poverty level. For this analysis, low-income population was determined by utilizing the U.S. Census tract data for the 5-year period 2008-2012. For this purpose, "low-income" is equated with "below poverty level." Other measures of "low-income" are also in use in California. For example, the State of California Department of Housing and Community Development, Division of Housing Policy Development establishes annually specific "low-income" thresholds for California counties. The Department distinguishes as well between "low-income," "very low income," and "extremely low" income thresholds for households of different sizes.

The CEQ and EPA guidance documents do not provide a discrete threshold for determining when a low-income population should be identified for environmental justice. For this analysis, a population of a U.S. Census tract that merits an environmental justice analysis has a percentage of its low-income population of the potentially affected census tract greater than the area-wide percentage of the low-income population across the entire West Mojave planning area.

3.5.3.2 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 3.5-6 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 3.5-6 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 3.5-6 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 3.5-6. 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
	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**

Table 3.5-6. 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]
Kern (continued)	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**
	9007.05	4,627	1,629	35.2	874	18.9
	9008.03	9,910	5,354	**54.0**	1,592	16.1
	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

Table 3.5-6. 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]
Los Angeles (continued)	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**
	9106.02	3,420	2,528	**73.9**	1,050	**30.7**
	9106.03	7,328	4,655	**63.5**	843	11.5
	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

Table 3.5-6. 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]
Los Angeles (continued)	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**
	100.26	11,902	4,787	40.2	3,403	**28.6**
	103*	3,692	713	19.3	802	**21.7**
	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**

Table 3.5-6. 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]
San Bernardino (continued)	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**
	95	6,855	2,560	37.3	2,092	**30.5**
	97.07	6,303	860	13.6	918	14.6
	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**

Table 3.5-6. 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]
San Bernardino (continued)	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

Located only 90 minutes from downtown Los Angeles, the WEMO Planning area is the recreational backyard of the metropolitan area's 21 million residents, of whom nearly 2 million participate in OHV activities and an even greater number camp, hike or drive for pleasure. The Mojave Desert provides an easily accessible, uncrowded recreation experience. The many recreation opportunities of the WEMO Planning area arise from the variety of its mountains, bajadas, dry lakes and badlands, the diversity and affluence of its visitors and the sheer volume of space that its landscape provides.

The types of recreation provided in the WEMO Planning area are highly varied. Due to its vastness, many visitors feel a greater freedom from regulations that encourages them to try new forms of recreation while not having to worry about bothering others. Given the scale of the desert and this sense of freedom, it is not surprising that many of the recreational activities center around vehicles, speed events or activities that require a great deal of acreage and separation from other visitors. These activities include motorcycle activities, four-wheel drive exploring, sightseeing, target shooting, hunting, using experimental vehicles/aircraft, model rocketry, and dry land windsailing. Many other recreational pursuits that do not revolve directly around the recreational aspect of vehicle use are, by necessity (due to the distances involved), dependent upon motorized vehicles. Examples of this include endurance equestrian rides and support vehicles, hiking, mountain biking, bird watching, botany, rockhounding, camping, geocaching, and picnicking, for which vehicles are a means to access various destinations. In Chapter 4, the effect of the designated route network on recreational opportunities is quantified and evaluated through the mileage of routes designated for these various recreational uses.

3.6.1 Patterns of Use

Although most recreational activities are widely dispersed, certain activities have "hot spots" that have been established over time. How or why they were established varies from case to case, but may be due to the features (topography, geology) of the area, proximity to urban areas, the availability of access into the area, and publicity. Understanding recreation patterns and hot spots is critical to the design of an effective motorized vehicle access network. Particular features or land-characteristics may make a given area highly desirable for a certain type (or types) of recreational activity. For instance, flat, expansive terrain is often desirable for recreational activities such as target shooting, driving for pleasure, and more quick-paced race events. On the other hand, mountainous terrain is often more conducive to such activities as rock climbing, hiking, rock hounding or technical four-wheel rock crawling. In addition, specific attractions of an area dictate the types of use, as well as the levels of use that predominate.

Some of the most popular hot spots in the desert portions of the WEMO planning area are dry lakebeds. Dry lakebeds pose unique access issues. This is due to the difficulty in following routes across lakebeds, and the adverse impacts and safety issues with marking them. Major lakebeds have been individually classified as to their availability for access and associated recreational use, and are generally identified as either open or closed, or available by permit. Smaller lakebeds are available for access consistent with the access parameters for surrounding areas, i.e., either open access or limited to designated routes. Two of the larger lakebeds in the West Mojave Desert that have not yet been specifically designated for access are Cuddeback and Koehn Lake Beds.

Cuddeback Lake is a sizeable lakebed that has been a popular destination for both casual recreational use, as well as commercial use, for several decades. Ease of access, the frequency that the lakebed is dry, and surrounding vistas contribute to its attraction. The casual recreational uses that occur on the lakebed include land sailing, model rocket launching, bicycling, photography, star-gazing, and camping. Additionally, motor vehicle use of all kinds is popular on the lakebed including motorcycles, ATV, recreational Off-Highway Vehicle, and four-wheel drive vehicles, as well as motorized and non-motorized use associated with commercial filming. Past and current levels of use are not currently consistent with the access designation for the surrounding area.

Koehn Lake is a sizeable lakebed located in the Fremont Valley northwest of the Rand Mountains and south of the Jawbone area that is not particularly popular for the public, but that has some unique safety issues. To the unfamiliar visitor, Koehn Lake's surface appearance is misleading. To the naked eye, the lakebed generally appears to be dry, but the lake actually only has a thin crust of a few inches on the surface. After one breaks through this crust, the subsurface is a clayish like material that acts similar to quicksand. Because of the potential hazard posed by the lakebed surface, recreational use and travel across the lakebed are a concern to BLM.

Coyote and Chisholm Trail Lakes are two lakebeds in the Joshua Tree area that are popular destinations for casual recreational users, due to their proximity to Copper Mountain Community College. Ease of access to college students and surrounding vistas contribute to their attraction. The casual recreational uses that occur on the lakebed are generally limited to day use riding, including motorcycles and all-terrain vehicles, with occasional motorized use associated with occasional overnight camping. The routes across these lakebeds are difficult to ascertain for a user entering from a route adjacent to the lakebed, and they serve as a substantial source of route proliferation onto adjacent lands. These two lakebeds are currently designated as limited to designated routes, but the difficulty of the public identifying designated routes and BLM managing the limited use is a concern to BLM.

The relative proximity of the Mojave Desert to urban centers makes it easy and convenient for recreationists to visit those "hot spots" and other areas having the features that they desire. About 85% of all visitors to the Mojave Desert are from the urban areas of Southern California. The BLM public lands are closer to the Los Angeles basin than other similar desert-environment recreation areas, such as the Mojave National Preserve and the national parks, and offer more expansive areas and a wider variety of recreational experiences.

Motorized vehicle access is itself a feature or characteristic that may or may not be sought. For example, a recreationist hoping to photograph or film particular wildlife undisturbed in its natural habitat would not want access so convenient that it attracts a large number of other visitors. Recreationists seeking to hike and camp in remote, difficult to reach areas to experience solitude would not find a location that has ready access from a major highway to be desirable. Conversely, a recreationist seeking to ride his dune buggy over sand dunes with groups of other people may appreciate easy access. Many other motorized users are seeking ready motorized access to the desert landscape to experience the space and solitude that heavily used areas cannot offer.

Publicity about an area's recreational opportunity often attracts users. Although some of this publicity can come through the mainstream news media (newspapers, television news reports), much of it comes by "word of mouth." A recreation club (motorcycle riding club, four-wheel drive club, dune buggy club, hiking and camping club, equestrian endurance riding club, rock hounding club, rock climbing club, photography club, or wildlife viewing club) may send out

newsletters to its members identifying areas that have those features that are considered ideal for the type of recreational activity that the club engages in. The popularity of the web (organizational websites, Facebook) and similar mechanisms to share information have further increased sharing of information about locations and destinations in the desert. Computer and cell phone applications can provide pictures and specific directions to sites, and have further expanded the reach of information beyond club members and small groups of individuals. This promotes discussion about specific areas and facilitates increased recreation at those sites. Recreation clubs are often drawn to specific hot spots where people participating in that particular type of recreation can gather and socialize.

Guidebooks and maps publicize favorite recreation sites. Guidebooks are available that describe areas in the Mojave Desert that offer significant opportunities for specific activities. These guidebooks typically describe the areas of interest in sufficient detail to lead recreationists to the most promising regions for the activity. Maps published by the American Automobile Association and regional user interest groups are particularly popular, for they indicate areas where different types of recreational activities occur.

Recreationists engage in activities that make use of more than one type of feature or terrain, and often desire to travel to locations where multiple types of terrain are readily available or that are relatively close to other areas having different terrain. For instance, in dual sport motorcycle touring, recreationists use motorcycles that are licensed for use on regular streets and highways but are capable of off-road travel. Recreationists engaged in such touring can ride to the desert on major highways, and then go off-road once a desired trail or special recreation opportunity has been reached. Their motorcycles can fit through tight spaces that larger vehicles, are unable to access.

Four-wheel drive vehicles have their attractions as well. A single four-wheel drive SUV can accommodate more people and items than can a dual sport motorcycle, and can also readily switch from regular highway travel to off-road touring.

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.

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 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 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. The center southern third is in Cady Mountains Wilderness Study Area; includes Afton Canyon, developed campground, overlooks, eligible Mojave River Wild & Scenic segment, Rasor OHV Area, Big Horn Sheep drinker, hunting, wildlife viewing, and rock collecting. Fuel, food and water are available at Hwy15 exits for Afton and Rasor.	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 Olancha 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 Rattlesnake Wilderness, numerous springs, thicker vegetation and larger wildlife, grazing, historic mines, 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, 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

Area[2]	Location	Primary Destinations and Recreational Activities	Physical Settings[1]	Social Settings[1]	Administrative Settings[1]
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
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 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.	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. 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 motorized 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	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 to 2wh drive scenic touring, 4x4 and OHV play and exploration. Features include springs, cabins, met towers and long roads connecting the horizon. Well maintained road to 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 (closed). 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 Afton TMA this is an ancient, historic and modern day east-west travel corridor and includes portions of Old Spanish National Historic Trail, Mormon 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 trail.	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 is a fairly remote and quiet area.	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 jeeping and scenic touring. 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 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 Sand Hills.	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.	The central portion is the Stoddard Valley OHV area; the north portion borders Mojave river with uses similar to Iron Mountain TMA. The area includes the Old Spanish National Historic Trail, Mormon Rd., Hwy 15, Route 66, springs, Sawtooth campground, Margaritaville, climbing, hiking, peak bagging, 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. The area includes travel facilities, powerlines, pipelines, communication sites, ranches, farms, light industry, large scale cement mines, and a few small scale wind turbines. The area includes campground host at Sawtooth, kiosks, signs, fences and regular field patrols.	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; includes extensive historic ranching and mining sites, and nationally significant modern day infrastructure including communication sites, powerlines and pipelines. Activities include 4x4 and OHV touring, exploration and play, 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 large scale OHV events and competitions. It includes the Cougar Buttes area popular with trials bike SRP events and commercial filming. 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; signs, kiosks and visitor patrols help guide visitors and protect sensitive resources.	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.

Many of the subregions are extensively used for OHV touring, Open Areas, and motorized vehicle events. The Barstow and Lancaster subregions have relatively limited OHV recreation because they have little public land, and most of their motorized routes connect to private land and commercial developments. The Afton, Juniper Flats, Cronese Lake, and Iron Mountain subregions are the sites of historic trails, including the Old Spanish National Historic Trail, Mojave Trail, and Mormon Road. 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 "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. Open Areas are some of the most popular destinations in the desert, and the designated access routes to these Open Areas are some of the most heavily used routes on public lands. Within Open areas, unlike limited vehicle access areas, there is no "route designation." Motorized vehicles 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 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. 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 Open Area, visitor use levels and the principal recreation activities that occur there.

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	51,500 (2016)	60,641 (2016)	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.

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
El Mirage	25,600	79,133 (2016)	134,957 (2016)	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	52,853 (2015)	62,140 (2015)	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]	162,497 (2014) (combined Johnson and Stoddard)	170,342 (2014) (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	6,086 (2014)	8,493 (2014)	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.
Spangler Hills	62,080	50,159 (2016)	70,264 (2016)	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.

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
Stoddard Valley	54,400	162,497 (2014) (combined Johnson and Stoddard)	170,342 (2014) (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	14,121 (2016)	8,896 (2016)	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.

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.

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 C 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	108,976
Crucero Valley	23,748

3.6.2 Trends

3.6.2.1 General Recreation Trends

Table 3.6-3 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 general, use levels at the sites which are not focused on OHV use range on the order of hundreds or thousands of visitors and visitor hours per year. However, the level of OHV-focused activities, such as use of Open Areas, is frequently on the order of several hundred thousand visitors and visitor hours per year, reflecting the popularity of OHV use as a recreational activity in the Planning Area.

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.

3.6.2.2 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 (i.e., SUVs) 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. Current models are designed with seats for a driver and one or more passengers. ROVs currently in the market are specifically designed for an operator age 16 or older and one or more passengers.

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. 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, is to be managed as a Shared Use area. The Shared Use Area (SUA) will be 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 area closures to OHV access. Wilderness designations have also resulted in large areas that are no longer accessible to OHV. 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. Motorized touring on popular historic trails has been restricted in places 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 open routes is maintained and cattle movements are restricted at openings in fences across 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 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 motorized 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 the dunes and beach because vehicles were allowed in those areas. Increasing numbers of senior citizens want to experience remote outdoor areas via OHV access. 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: Motorized access 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 motorized vehicles 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 Off-Highway Vehicle (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.

Table 3.6-4. Number of Visitors and Visitor Days in West Mojave, 2006-2016

Area		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Barstow Field Office												
Afton Canyon												
Afton Canyon Campground	Visits	1038	1,138	49,249	772	752	394	N/A	N/A	N/A	N/A	N/A
	Visitor Days	1,886	2,067	89,469	1,402	1,365	716	N/A	N/A	N/A	N/A	N/A
Afton Canyon Natural Area	Visits	2,157	1,943	1,584	2,106	3,363	2,107	2,106	N/A	N/A	N/A	N/A
	Visitor Days	521	470	383	509	813	509	509	N/A	N/A	N/A	N/A
Afton Group Area Campground	Visits	511	513	418	557	838	556	556	N/A	N/A	N/A	N/A
	Visitor Days	937	941	766	1,021	1,537	1,019	1,019	N/A	N/A	N/A	N/A
Dispersed Use	Visits	4,190	5,264	3,428	4,561	7,664	4,561	4,561	N/A	N/A	N/A	N/A
	Visitor Days	1,023	1,285	837	1,114	1,871	1,114	1,114	N/A	N/A	N/A	N/A
Mojave Road	Visits	4,830	4,850	3,646	5,193	8,312	6,295	5,257	N/A	N/A	N/A	N/A
	Visitor Days	805	808	608	866	1,385	1,049	876	N/A	N/A	N/A	N/A
Total Afton Canyon	Visits	12,726	13,708	58,325	13,189	20,929	13,913	12,480	N/A	N/A	N/A	N/A
	Visitor Days	5,172	5,571	92,063	4,912	6,971	4,407	3,518	N/A	N/A	N/A	N/A
Barstow, Extensive												
Calico Early Man Site	Visits	1,455	1,467	1,195	1,590	2,886	2,161	1,588	1,589	1,589	0	0
	Visitor Days	253	256	208	277	1,776	673	277	277	277	0	0
Dispersed Use	Visits	425,199	427,073	348,117	463,958	735,801	463,729	463,798	463,151	463,573	628	0
	Visitor Days	243,281	244,321	199,320	267,357	421,596	266,645	267,802	265,552	266,433	60	0
Juniper Flats Intensive Use Area	Visits	5,883	5,908	4,832	6,405	9,638	6,422	6,422	6,421	6,421	0	0
	Visitor Days	1,235	1,241	1,015	1,345	2,024	1,349	1,349	1,348	1,348	0	0
Lucerne Dry Lake Specialized Sport Site	Visits	898	1,035	913	964	1,829	1,099	917	1,142	1,107	190	0
	Visitor Days	748	886	786	809	6,122	916	764	1,193	992	190	0
Mojave Road	Visits	653	656	533	711	1,124	712	712	711	711	0	0
	Visitor Days	109	109	89	119	187	119	119	118	119	0	0
Total Barstow, Extensive	Visits	434,088	436,139	355,590	473,628	751,277	474,123	473,437	473,014	473,401	818	0
	Visitor Days	245,626	246,813	201,418	269,907	431,705	269,702	270,311	268,488	269,169	250	0
Desert Discovery Center												
Information Center	Visits	3,092	11	3,634	11	9,395	0	5,493	5,491	4,826	0	12,591
	Visitor Days	294	1	345	1	893	0	522	522	458	0	1,196

Table 3.6-4. Number of Visitors and Visitor Days in West Mojave, 2006-2016

Area		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Dispersed Use	Visits	2,059	4,527	493	5,040	8,063	0	4,831	4,830	0	0	0
	Visitor Days	172	377	41	420	672	0	403	402	0	0	0
Total Desert Discovery Center	Visits	5,151	4,538	4,127	5,051	17,458	0	10,324	10,321	4,826	0	12,591
	Visitor Days	466	378	386	421	1,565	0	925	924	458	0	1,196
El Mirage												
Dispersed Use	Visits	99,578	99,739	83,683	116,356	170,401	66,684	95,264	69,542	68,515	1,281	79,133
	Visitor Days	173,940	168,802	141,793	196,441	276,768	119,591	179,835	120,529	117,663	320	134,957
Total El Mirage	Visits	99,578	99,739	83,683	116,356	170,401	66,684	95,264	69,542	68,515	1,281	79,133
	Visitor Days	173,940	168,802	141,793	196,441	276,768	119,591	179,835	120,529	117,663	320	134,957
Rasor												
Dispersed Use	Visits	4,568	4,896	3,078	4,998	6,509	4,349	4,095	4,096	4,096	0	0
	Visitor Days	9,102	9,755	6,133	9,959	12,969	8,665	8,159	8,161	8,161	0	0
Mojave Road	Visits	1,832	1,838	1,497	1,992	2,988	1,992	1,992	1,990	1,990	0	0
	Visitor Days	305	306	250	332	498	332	332	332	332	0	0
Total Rasor	Visits	6,400	6,734	4,575	6,990	9,496	6,341	6,087	6,086	6,086	0	0
	Visitor Days	9,407	10,061	6,383	10,291	13,467	8,997	8,491	8,493	8,493	0	0
Stoddard and Johnson												
Anderson Dry Lake Staging Area	Visits	12,711	12,096	11,583	12,236	31,132	14,677	15,256	12,316	12,235	0	0
	Visitor Days	12,758	11,088	13,587	11,216	34,050	20,035	20,637	11,552	11,215	0	0
Cougar Buttes Intensive Use Area	Visits	8,417	8,137	8,252	8,391	13,657	10,231	10,537	8,557	8,786	0	0
	Visitor Days	5,774	5,721	7,842	5,649	9,561	13,737	11,754	5,840	6,521	0	0
Dispersed Use	Visits	98,870	81,669	77,330	149,053	157,663	98,722	97,432	100,567	92,665	93,937	3,611
	Visitor Days	135,148	89,941	94,117	242,937	215,208	126,960	128,846	126,824	108,565	7,978	7,481
Means Dry Lake Intensive Use Area	Visits	5,364	5,257	4,520	15,698	24,592	21,616	38,332	41,354	6,593	0	0
	Visitor Days	4,731	4,214	3,718	12,585	89,175	120,197	317,292	342,734	12,170	0	0
Sidewinder Road Staging Area	Visits	6,802	7,336	5,558	6,974	16,215	9,568	8,179	7,403	7,403	0	0
	Visitor Days	5,090	6,017	4,159	5,219	27,336	8,464	6,121	5,540	5,540	0	0
Slash-X Staging Area	Visits	4,475	6,495	10,730	4,872	7,311	8,599	4,871	5,821	4,931	0	0
	Visitor Days	3,341	9,905	26,875	3,638	5,459	11,706	3,637	5,141	3,680	0	0
Soggy Dry Lake Intensive Use Area	Visits	16,920	15,994	15,238	15,762	26,501	19,146	14,772	15,762	15,762	0	0
	Visitor Days	13,759	12,950	20,148	12,754	27,283	21,442	12,389	12,754	12,754	0	0

Table 3.6-4. Number of Visitors and Visitor Days in West Mojave, 2006-2016

Area		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
The Rockpile Staging Area	Visits	14,187	16,465	10,615	14,123	22,695	14,124	14,623	14,122	14,122	0	0
	Visitor Days	10,103	12,931	7,439	9,898	17,842	9,899	10,815	9,897	9,897	0	0
Total Stoddard and Johnson	Visits	167,745	153,449	143,826	227,108	299,766	196,683	204,002	205,902	162,497	93,937	3,611
	Visitor Days	190,704	152,757	177,885	303,896	425,914	332,440	511,491	520,282	170,342	7,978	7,481
Superior/Rainbow												
Dispersed Use	Visits	5,080	5,101	4,354	5,451	8,836	5,520	5,555	5,530	5,530	0	0
	Visitor Days	1,892	1,900	1,622	2,030	3,655	2,235	2,186	2,060	2,060	0	0
Harper Dry Lake	Visits	1,935	1,902	1,585	2,106	3,346	2,227	2,106	2,106	2,106	0	0
	Visitor Days	323	317	264	351	558	371	351	351	351	0	0
Owl Canyon Campground	Visits	845	930	2,000	1,025	925	748	134	1,639	1,508	908	868
	Visitor Days	1,548	1,704	3,665	1,878	1,696	1,371	246	3,003	2,763	1,664	1,591
Owl Canyon Group Campground	Visits	732	726	592	787	1,184	1,253	788	788	1,477	0	0
	Visitor Days	1,300	1,305	1,064	1,415	2,128	2,252	1,416	1,416	2,655	0	0
Rainbow Basin Natural Area	Visits	4,594	4,332	3,310	4,477	9,945	4,999	4,999	5,000	5,000	0	0
	Visitor Days	919	866	662	895	1,989	1,000	1,000	1,000	1,000	0	0
Total Superior/Rainbow	Visits	13,177	12,991	11,841	13,846	24,237	14,747	13,582	15,063	15,621	908	868
	Visitor Days	5,982	6,092	7,277	6,569	10,026	7,229	5,199	7,830	8,829	1,664	1,591
Total for Barstow Field Office	Visits	738,866	727,298	661,967	856,168	1,293,564	772,491	815,176	779,928	730,946	96,944	96,203
	Visitor Days	631,297	590,484	627,205	792,437	1,166,416	742,366	979,770	926,546	574,954	10,212	145,225
Ridgecrest Field Office												
Eastern Sierra												
Dispersed Use	Visits	18,268	20,754	21,164	23,298	23,300	22,836	22,902	21,859	22,013	24,151	29,568
	Visitor Days	16,746	19,024	19,400	21,356	21,358	20,933	20,994	20,037	20,162	22,086	27,104
Owens Peak Trailhead	Visits	20,875	19,605	19,527	18,648	19,500	18,720	9,572	9,211	9,186	10,000	11,945
	Visitor Days	19,563	18,369	18,290	17,467	18,265	17,534	8,966	8,628	8,604	9,367	10,770
Sacatar Trailhead	Visits	4,412	3,760	3,784	3,621	3,712	3,608	3,706	3,673	3,687	3,899	5,121
	Visitor Days	3,787	3,227	3,248	3,108	3,186	3,097	3,181	3,153	3,165	3,347	4,396
Short Canyon Trailhead	Visits	32,987	13,143	13,421	11,598	12,177	11,924	11,503	12,000	11,834	14,532	15,962
	Visitor Days	12,989	5,175	5,285	4,567	4,795	4,695	4,529	4,725	4,660	5,722	6,285
Total Eastern Sierra	Visits	76,542	57,262	57,896	57,165	58,689	57,088	47,683	46,743	46,720	52,582	62,596
	Visitor Days	53,085	45,795	46,223	46,498	47,604	46,259	37,670	36,543	36,591	40,522	48,555

Table 3.6-4. Number of Visitors and Visitor Days in West Mojave, 2006-2016

Area		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
El Paso Mountains												
Boral Corral Pit Shooting Range	Visits	4,392	5,564	7,502	6,301	6,020	5,939	6,223	5,999	6,087	6,257	7,001
	Visitor Days	875	836	1,188	934	878	866	908	875	888	912	1,021
Dispersed Use	Visits	30,999	40,273	40,139	46,573	49,188	47,712	48,270	47,751	49,331	51,310	51,216
	Visitor Days	23,948	31,174	31,089	35,762	37,921	36,977	37,275	37,007	38,228	39,737	39,692
El Paso Mountains Trailhead	Visits	25,369	22,198	22,045	500	733	779	752	743	3,677	3,702	5,325
	Visitor Days	18,604	16,279	16,166	367	467	528	551	545	2,663	2,715	3,905
Last Chance Canyon Trailhead	Visits	4,048	2,698	3,587	100	36,555	3,590	36,455	3,625	3,354	3,765	4,859
	Visitor Days	6,190	5,655	5,485	153	55,899	5,490	55,746	5,543	5,129	5,757	7,430
Total El Paso Mountains	Visits	64,808	71,733	73,273	53,474	92,496	58,020	91,700	58,118	62,449	65,034	68,401
	Visitor Days	49,617	53,944	53,928	37,216	95,165	43,861	94,480	43,970	46,878	49,121	52,048
Mojave												
Cache Peak PCT Trailhead	Visits	5,771	5,769	5,803	5,826	5,900	5,889	5,815	5,779	5,759	5,670	5,584
	Visitor Days	10,292	10,288	10,349	10,390	10,522	10,502	10,370	10,306	10,270	10,112	9,958
Desert PCT Trailhead	Visits	8,231	8,156	7,988	7,821	8,000	7,801	7,813	7,552	7,543	8,321	8,336
	Visitor Days	14,679	14,545	14,245	13,947	14,267	13,912	13,933	13,468	13,452	14,839	14,866
Dispersed Use	Visits	24,621	23,249	23,598	24,607	24,611	24,365	24,590	24,536	24,627	26,321	26,500
	Visitor Days	33,341	31,483	31,956	32,807	33,326	32,994	33,037	33,226	33,349	35,643	35,885
Total Mojave	Visits	38,623	37,174	37,389	38,254	38,511	38,055	38,218	37,867	37,929	40,312	40,420
	Visitor Days	58,312	56,316	56,550	57,144	58,115	57,408	57,340	57,000	57,071	60,594	60,709
Rand Mountain												
Desert Tortoise Natural Area	Visits	39,443	38,821	38,765	9,325	9,675	9,486	9,512	9,121	9,109	10,003	9,996
	Visitor Days	9,335	9,188	9,174	2,207	2,290	2,245	2,251	2,159	2,156	2,367	2,366
Dispersed Use	Visits	5,244	5,429	5,702	5,828	6,524	6,263	6,345	6,333	6,381	6,472	7,589
	Visitor Days	3,007	3,113	3,578	3,783	3,773	3,591	3,638	3,635	3,669	3,717	4,351
Rand Mountain and Fremont Valley Intensive Use Area	Visits	50,358	50,287	50,007	44,297	50,009	39,900	40,017	48,439	65,576	58,530	68,500
	Visitor Days	25,725	25,688	25,545	22,628	25,544	20,382	20,442	24,762	56,259	71,163	83,285
Total Rand Mountain	Visits	95,045	94,537	94,474	59,450	66,208	55,649	55,874	63,893	81,066	75,005	86,085
	Visitor Days	38,067	37,989	38,297	28,618	31,607	26,218	26,331	30,556	62,084	77,247	90,002

Table 3.6-4. Number of Visitors and Visitor Days in West Mojave, 2006-2016

Area		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Red Mountain												
Dispersed Use	Visits	46,140	46,539	46,490	48,971	49,696	48,571	49,106	49,033	50,832	52,248	53,789
	Visitor Days	84,233	85,016	84,960	89,310	89,798	88,724	88,993	89,659	92,808	95,527	98,389
Golden Valley Trailhead	Visits	4,461	4,387	4,291	3,921	4,154	3,898	4,035	4,022	4,031	4,643	5,555
	Visitor Days	2,491	2,449	2,396	2,189	2,317	2,176	2,253	2,246	2,251	2,592	3,102
Grass Valley Trailhead	Visits	8,769	8,648	8,297	8,045	8,150	7,980	8,127	8,085	8,073	8,765	9,652
	Visitor Days	4,896	4,828	4,632	4,492	4,550	4,456	4,538	4,514	4,507	4,894	5,389
Spangler OHV Area	Visits	20,630	27,169	26,157	27,331	27,725	2,389	2,549	25,559	26,854	29,046	50,159
	Visitor Days	50,764	69,610	66,186	76,093	72,844	1,821	6,309	35,804	36,164	39,652	70,264
Steam Wells	Visits	1,250	1,287	1,327	1,306	1,340	1,314	1,213	1,301	1,322	1,540	2,000
	Visitor Days	365	375	387	381	391	383	354	379	386	449	583
Summit Range Intensive Use Area	Visits	9,879	7,986	7,955	7,943	7,999	7,859	7,903	7,768	7,788	7,878	7,785
	Visitor Days	8,726	7,054	7,027	7,016	7,066	6,942	6,981	6,862	6,879	6,959	6,877
Total Red Mountain	Visits	91,129	96,016	94,517	97,517	99,064	72,011	72,933	95,768	98,900	104,120	128,940
	Visitor Days	151,475	169,332	165,588	179,481	176,968	104,502	109,428	139,464	142,995	150,073	184,604
Ridgecrest												
Argus Range Trailhead	Visits	21,097	20,876	21,006	19,985	20,017	19,216	19,248	9,197	9,185	8,656	8,456
	Visitor Days	18,987	18,788	18,905	17,987	18,015	17,294	17,323	8,277	8,267	7,790	7,610
Ayers Rock	Visits	1,946	1,896	1,786	1,763	1,776	1,769	1,782	1,699	1,689	1,721	2,320
	Visitor Days	162	158	149	147	148	147	149	142	141	143	193
Briggs Cabin	Visits	NA	NA	NA	2,319	NA	NA	2,273	2,251	2,198	1,676	1,602
	Visitor Days	NA	NA	NA	2,551	NA	NA	2,500	2,476	2,418	1,844	1,762
Coso Range Trailhead	Visits	2,364	2,359	2,351	2,243	2,300	2,208	2,198	2,187	2,153	1,976	2,000
	Visitor Days	4,925	4,915	4,898	4,673	4,792	4,600	4,579	4,556	4,485	4,117	4,167
Darwin Falls Trailhead	Visits	3,754	3,623	3,587	3,421	3,541	3,470	3,434	3,468	3,458	4,001	3,995
	Visitor Days	3,942	3,804	3,766	3,592	3,718	3,644	3,606	3,641	3,631	4,201	4,195
Dispersed Use	Visits	20,318	20,816	22,024	24,013	24,768	25,172	26,694	24,898	25,489	28,301	41,110
	Visitor Days	17,324	17,745	19,011	20,472	21,454	21,534	23,239	21,060	21,603	23,963	34,772
Fossil Falls Trailhead	Visits	31,356	31,562	31,571	31,549	31,560	30,361	30,373	30,401	30,387	31,158	29,512
	Visitor Days	25,320	25,486	25,494	25,476	25,485	24,517	24,526	24,549	24,538	25,160	23,831

Table 3.6-4. Number of Visitors and Visitor Days in West Mojave, 2006-2016

Area		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Fossil Falls Campground	Visits	571	193	177	155	233	215	199	177	495	554	707
	Visitor Days	395	137	118	103	155	331	306	273	763	854	1,090
Keynot Mine Cabin	Visits	NA	NA	NA	168	NA	NA	102	72	68	85	100
	Visitor Days	NA	NA	NA	95	NA	NA	58	41	39	48	57
Kopper King Cabin	Visits	NA	NA	NA	32	NA	NA	36	29	31	41	45
	Visitor Days	NA	NA	NA	18	NA	NA	20	16	18	23	26
Lower Centennial Canyon Cabin	Visits	1,873	1,798	1,782	1,695	1,699	1,611	1,615	1,585	1,578	1,787	0
	Visitor Days	1,061	1,019	1,010	961	963	913	915	898	894	1,013	0
Olancha Dunes OHV Area	Visits	14,688	14,721	14,784	14,206	14,212	13,578	13,584	13,591	13,159	14,101	14,121
	Visitor Days	9,253	9,274	9,314	8,950	8,954	8,554	8,558	8,562	8,290	8,884	8,896
Rademacher Hills Intensive Use Area	Visits	68,569	69,165	69,480	69,354	69,774	69,624	69,504	70,000	70,062	78,878	79,101
	Visitor Days	24,456	24,669	24,784	24,736	24,808	24,815	24,790	24,967	24,962	28,137	28,213
Ridgecrest Field Office Information Center	Visits	1,600	1,723	1,854	1,116	1,120	998	2,124	760	781	877	900
	Visitor Days	97	104	1,125	67	68	60	1,775	46	53	59	54
Salt Wells Corrals Information Center	Visits	27,313	27,453	27,287	26,973	27,001	26,482	26,648	26,251	25,384	27,321	28,211
	Visitor Days	1,162	1,167	1,160	1,146	1,148	1,125	1,133	1,116	1,079	1,161	1,199
Trona Pinnacles	Visits	22,588	23,257	23,356	24,687	24,692	24,454	24,532	24,605	26,843	29,953	30,100
	Visitor Days	20,706	21,319	21,410	22,630	22,634	22,416	22,488	22,555	24,606	27,457	27,592
Total Ridgecrest	Visits	218,037	219,442	221,045	223,679	222,693	219,158	224,346	211,171	212,960	231,086	242,280
	Visitor Days	127,790	128,585	130,131	133,604	132,342	129,950	135,965	123,175	125,787	134,854	143,657
Southern Sierra												
Bright Star Trailhead	Visits	3,398	3,005	3,021	2,900	2,847	2,790	2,815	2,801	27,682	28,543	28,456
	Visitor Days	5,663	5,008	5,035	4,833	4,745	4,650	4,692	4,668	46,137	47,572	47,427
Cameron Ridge PCT Trailhead	Visits	6,798	6,783	6,687	5,803	5,821	5,762	5,780	5,801	5,736	6,543	6,600
	Visitor Days	12,123	12,096	11,925	10,349	10,381	10,276	10,308	10,345	10,229	11,668	11,770
Dispersed Use	Visits	52,461	53,143	53,007	51,993	48,596	64,000	60,824	61,221	61,391	65,520	65,502
	Visitor Days	70,516	71,433	71,250	69,403	65,233	86,027	81,488	82,291	82,476	87,969	88,046
Dove Springs OHV Area	Visits	57,981	58,497	50,138	54,150	73,747	45,000	54,597	52,736	49,083	50,742	51,500
	Visitor Days	172,735	174,272	149,369	191,071	219,705	134,063	162,654	157,109	57,761	59,680	60,641

Table 3.6-4. Number of Visitors and Visitor Days in West Mojave, 2006-2016

Area		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Dove Springs PCT Trailhead	Visits	6,845	6,798	6,759	6,191	6,196	6,022	6,164	6,009	5,987	5,789	5,800
	Visitor Days	12,207	12,123	12,054	11,041	11,050	10,739	10,992	10,716	10,677	10,324	10,343
Jawbone OHV Area	Visits	59,834	59,791	53,574	47,337	87,820	51,000	52,259	51,899	51,674	52,853	4,000
	Visitor Days	178,156	178,028	159,517	140,897	259,454	151,853	155,601	154,529	60,812	62,140	4,710
Jawbone Station Information Center	Visits	11,193	10,201	10,631	6,575	4,425	5,514	400	4,087	5,761	7,514	0
	Visitor Days	485	442	461	285	192	239	174	177	317	413	0
Kiavah Trailhead	Visits	21,671	21,631	21,491	15,985	15,867	15,231	15,344	15,302	15,067	15,678	15,599
	Visitor Days	36,118	35,885	35,818	26,642	26,445	25,385	25,573	25,503	25,112	26,130	25,998
Robbers Roost Climbing Area	Visits	6,023	5,964	5,978	5,550	5,347	5,293	5,249	5,176	4,697	4,990	5,000
	Visitor Days	2,710	2,684	2,690	2,498	2,406	2,382	2,362	2,329	2,114	2,246	2,250
Total Southern Sierra	Visits	226,204	225,713	211,286	206,484	250,126	200,612	207,054	205,032	227,078	238,172	182,457
	Visitor Days	490,713	491,971	448,119	457,019	599,611	425,614	453,844	447,667	295,635	308,142	251,185
Total Ridgecrest Field Office	Visits	810,388	801,877	789,880	736,023	827,787	700,593	737,808	718,592	767,102	806,311	811,179
	Visitor Days	969,059	983,932	938,836	939,580	1,141,412	833,812	915,058	878,375	767,041	820,553	830,760

3.6.3 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.

3.6.3.1 Driving OHVs for Recreation

There are various types of OHV recreation. These include general vehicular touring, motorcycle recreation, and ATV and four-wheel-drive use (4WD).

General Vehicular Touring

Many people engage in recreational touring. Such touring allows visitors to see vast areas of the desert while spending less time on the land itself and providing more control over potential desert safety risks. OHV touring may occur on both flat and mountainous terrain using SUVs, jeeps and similar vehicles.

OHV touring vehicles, such as the popular SUV, have 4WD capabilities to handle off-road conditions and are designed to be comfortable for normal street usage. They do not have to be towed by another vehicle to particular staging areas; rather, they can be driven on the highway and, when opportunity presents itself, they can follow a dirt trail. Vehicles that have 4WD capability have a broader range of access opportunities because they can traverse different types of terrain features and meet or exceed highway safety standards.

In the mid-1980s, off-road enthusiasts, and state and local government agencies collaborated to provide a system of interconnected roads and "jeep" trails. Today, over 600 miles of trails have been designated by the State of California as "Back Country Discovery Trails." A goal of this trail system is to provide a backcountry opportunity for non-traditional trail users, such as persons with disabilities, senior citizens, and families with small children.

The California Backcountry Discovery Trail (CBDT) system is one of shared-use. Equestrians, hikers, and cyclists are welcome, although the trail system is designed for off-road enthusiasts. The existing roads that make up the "principle route" network were selected with a stock, SUV in mind. The CBDT network provides recreationists with an abundance of OHV touring opportunities. "Alternate trails" departing and later rejoining the principle route provide more challenging experiences and are open to green sticker vehicles.

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 motorized 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 access 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 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 motorized 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 motorized 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 access 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 access 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 motorized 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).

Similarly in 1980, three competitive corridors were identified to provide long-distance opportunities for competitive motorized races to cross through limited access 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 motorized 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 motorized 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.

3.6.3.2 Driving OHVs to Access Other Recreation

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."

3.6.4 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.

3.6.5 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, Calico Early Man Site, 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 motorized 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 motorized vehicle 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 motorized vehicle 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 motorized vehicles 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 man power needed to implement.

3.6.6 Recreation Safety

As discussed above, recreation in the WEMO Planning area is dependent on the availability of motorized routes to either directly support recreational uses, or to provide access 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 a motorized 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 permanently 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.

Under the Taylor Grazing Act, allotments are classified under Section 3 as a grazing permit or under Section 15 as a grazing lease. Allotments with perennial forage have an established limit of forage based on the quality and quantity of perennial plants, stated in animal unit months (AUMs) for a defined period of grazing use. An AUM is a measure of perennial or ephemeral feed that will support a cow and its calf, a ewe and its lambs, or a bull for one month. Perennial forage consumption is typically authorized at the same level from year to year unless forage production does not meet seasonal norms. When the CDCA Plan (1980) originally allocated AUMs for forage consumption for livestock use it occasionally suspended AUMs for forage allocations to wildlife and for poor rangeland conditions to improve watershed stability.

In contrast, grazing use in allotments with ephemeral forage does not have an established level or specified period of use. Instead, the amount and length of grazing use in any particular season or year is based on ephemeral production and determined just prior to authorizing the grazing use. In the WEMO Planning area, minimum forage production is 230 Ibs/acre to authorize ephemeral grazing for a season for most of the planning area. The 2006 WEMO Plan authorized ephemeral sheep grazing on two allotments within portions of the Fremont-Kramer DWMA (now designated as DT ACEC under the DRECP LUPA). In these areas the minimum forage production is 350 Ibs/acre to authorize ephemeral grazing. This level of forage is anticipated to provide sufficient forage for both domestic livestock and wildlife, and still provide ample seed source to sustain production in subsequent years within the planning area.

In most cases, BLM authorizes grazing by permit or lease for a period of 10 years. A shorter period of time is sometimes issued for special circumstances, such as to accommodate a shorter-term lease of the base property or when the Authorized Officer determines that a shorter- term authorization is in the best interest of range management. Additionally, temporary, non-renewable grazing authorization may be issued for special short-term needs such as trailing, or when there is short-term surplus forage available for grazing. All permits and leases are subject to modification and to annual adjustments. Such modifications are implemented through consultation between the permittee or lessee and the BLM, and consistent with terms of applicable biological opinions and Section 106 of NHPA review.

The permit or lease identifies mandatory terms and conditions that specify the number, kind and/or type of livestock that may graze the allotment, and the grazing period (usually with specific beginning and ending dates). In addition, many permits and leases also require adherence to prescribed grazing prescriptions in the form of grazing systems, such as deferred,

deferred-rotation, or rest-rotation. Other authorizations may have conditions pertaining to turnout dates based on vegetation conditions. Based on range type, season of use and range condition all permittees and lessees have specific grazing utilization thresholds and other specified terms and conditions to protect site-specific areas such as riparian areas, wildlife habitat, and special status plant populations. These terms and conditions have been developed in consultation and cooperation between BLM and the livestock operator, were developed based on decisions made in the 2006 WEMO Plan, are the result of the 2006 WEMO Plan, and/or may be the result of biological opinions, other resource management strategies, or another planning effort.

There are 105 natural water sources located on the 20 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.

Frequently, the permittee or lessee elects to graze fewer livestock than the full amount of grazing authorized under the active preference (permitted use) for the grazing season. Sometimes this is due to environmentally related factors such as droughts or fires, and in other cases it may be to accommodate the livestock operator's need to adjust livestock numbers for marketing or livestock husbandry purposes. Normally, the BLM will authorize the requested amount of non-use on a short-term basis. In rare situations, the BLM may temporarily authorize another qualified applicant to graze the amount of authorized non-use in an allotment, depending upon the reason for non-use.

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 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 shows the years in which perennial forage was utilized in allotments.

The authorization of sheep grazing in 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 WEMO Plan, and one additional allotment and substantial portions of another can no longer be grazed due to their proximity to bighorn sheep habitat.

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.

Additional descriptions of specific allotments are available in the 2006 WEMO Plan Volume II, Appendix O. In addition, more recent, 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 SEIS. The grazing EAs are available for download from the California NEPA website or can be requested from the local BLM 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 evaluation and current grazing status on each allotment.

3.7.2 Motorized Access to Allotments and Range Improvements

Motorized access is required for all aspects of range management. Most access to allotments occurs via designated routes. Motorized 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, motorized 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 with 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 motorized 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 access 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 to access 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
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
Olancha[1]	13,762	15,876	0	606	Perennial	Cattle	4/1-6/30
Ord Mountain[2]	128,308	143,968	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

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				
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	Status
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

Table 3.7-2. Status of Grazing Allotments

Allotment Name	EA Prepared and DR approved for grazing lease/permit renewal	Date of EA	Status
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 (see1-8-03-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 the Mojave Monkey Flower Conservation Area-10 year grazing lease.
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

3.8 Energy Production, Utility Corridors, and Other Land Uses

Most land uses in the West Mojave (WEMO) Planning Area require the provision of some sort of motorized access. 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

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 access restrictions may also be considered when there are access 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 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 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, open 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 open 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 open 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 access associated with the routes that are being made inaccessible, and to re-route them around the facility if that access 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 access to remote areas.

3.8.2 Land Uses Within WEMO Planning Area

Within the WEMO Planning area, there are currently approximately 1,705 active rights-of-way (ROW). These land and mining authorizations almost always involve some level of motorized access across public lands. This access 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 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 motorized use on these side-routes is declining. However, many maintenance activities still need to be performed on-site, requiring continued access.

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.

Access for Private Landowners

Private land owners may also receive authorization to utilize routes on public land to access 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 Development Focus Areas (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, motorized, non-motorized, and non-mechanized routes already exist within the project area, and public access to 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 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

Most of the Limited Access areas within the WEMO Planning area are available for mining and mineral exploration. Provision of access to these resource values is a key component of the transportation network. Access for exploration and development of minerals is granted under several authorizations, depending on the scope of activities and the type of minerals being mined. Mineral management programs in BLM include fluid minerals (oil, gas, and geothermal) and solid minerals (locatable, leasable, and salable). Fluid minerals are exclusively leasable; however, some solid minerals are also leasable such as phosphate and salt deposits that contain sodium or potassium. Calcium and carbonate salts are leasable or locatable, depending on their uses. The remaining solid minerals are generally locatable or salable. Locatable solid minerals are those such as metals and gypsum. Salable minerals are those such as common varieties of sand and gravel, clay, and rock. The BLM manages oil and gas leases under Title 43 CFR, Part 3100, and geophysical exploration is covered under Part 3150. Geothermal leasing is managed under Part 3200, mineral materials under Part 3600 regulations, mining claims for locatable minerals under Part 3800 regulations, and solid leasable minerals, other than coal or oil shale, under Part 3500.

As with other land-use authorizations, whenever appropriate, the designated route network is used for motorized 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. 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 for access. 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 motorized access specific to their activity on public lands. Rather, they may use motorized vehicles 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 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 National Register of Historic Places (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.

Historical Resources are a legally defined subset of cultural resources that meet the criteria for listing on the CRHR as provided at CCR Title 14, Chapter 11.5, Section 4850. Historical Resources may include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript which that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

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 West Mojave 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 open 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 Regulatory Setting

3.9.2.1 Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 (Public Law [PL] 89-665, 16 United States Code [U.S.C.] 470-1), as amended, generally sets forth as the national policy of the federal government, in cooperation and partnership with the states, local governments, Native American tribes, and private organizations and individuals to (1) use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations; (2) administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations; (3) contribute to the preservation of non-federal prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means; and (4) encourage the public and private preservation and utilization of all usable elements of the nation's historic built environment (16 U.S.C 470-1).

Sections 106 and 110 of the NHPA have specific bearing on federal agency historic preservation activities and the management of historic properties. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on such historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on those undertakings. These regulations require federal agencies to conduct the necessary studies or consultations to identify cultural resources that may be affected by an undertaking, evaluate cultural resources that may affected to determine if they are eligible for the NRHP, and to assess whether such historic properties would be adversely affected. Where historic properties would be adversely affected, the federal agency is required to consult with the State Historic Preservation Officer, Native American tribes that attach religious or cultural significance to historic properties, the Advisory Council on Historic Preservation, and other consulting parties to resolve the effects of the undertaking.

Section 110 of the NHPA (16 U.S.C. 470h-2) generally provides that all federal agencies assume responsibility for the preservation of historic properties that are owned or controlled by such agency. Under this section, federal agencies must establish a preservation program for the identification, evaluation, and nomination to the NRHP, and for protection of historic properties. The agency's preservation program shall ensure:

A. That historic properties under the jurisdiction or control of the agency are identified, evaluated, and nominated to the National Register.

B. That such properties under the jurisdiction or control of the agency as are listed in or may be eligible for the National Register are managed and maintained in a way that considers the preservation of their historic, archaeological, architectural, and cultural values in

compliance with Section 106 and gives special consideration to the preservation of such values in the case of properties designated as having national significance.

C. That the preservation of properties not under the jurisdiction or control of the agency, but subject to be potentially affected by agency actions, are given full consideration in planning.

D. That the agency's preservation-related activities are carried out in consultation with other federal, state, and local agencies, Indian tribes, Native Hawaiian organizations carrying out historic preservation planning activities, and with the private sector.

E. That the agency's procedures for compliance with Section 106 of this Act

   i. are consistent with regulations issued by the Council pursuant to this Act.

   ii. Provide a process for the identification and evaluation of historic properties for listing in the National Register and the development and implementation of agreements, in consultation with State Historic Preservation Officers, local governments, Indian tribes, Native Hawaiian organizations, and the interested public, as appropriate, regarding the means by which adverse effects on such properties will be considered

   iii. Provide for the disposition of Native American cultural items from federal or tribal land in a manner consistent with section 3(c) of the Native American Grave Protection and Repatriation Act" (25 U.S.C. 3002[c]) (16 U.S.C 470h-2(a)).

National Register of Historic Places

The NRHP is the official list of the nation's historic places worthy of preservation. Authorized by the NHPA, the NRHP is part of the national program to identify, evaluate, and protect America's historic and archaeological resources. Cultural resources listed or eligible for listing on the NRHP are called historic properties.

Eligibility for inclusion in the NRHP is specified in regulations at 36 CFR 60.4 and is based on the following:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association; and:

A. That are associated with events that have made a significant contribution to the road patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or representation of the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

An NRHP-eligible site must meet one or more of the above criteria and have integrity appropriate to the criteria. In most cases, archaeological sites typically qualify under Criterion D;

non-archaeological properties often qualify for listing under Criterion A, B, or C. Integrity varies in terms of the criterion under which the site is evaluated. For example, an archaeological site evaluated under Criterion D would need to have the potential to provide meaningful scientific research data that is important to prehistory or history. If the site has been disturbed or damaged to the extent it cannot do this, it would lack integrity. Historic buildings, on the other hand, typically need to be in their original location and be relatively unmodified or restorable to have integrity under Criterion A, B, or C. Historic buildings and structures must also evoke the historic period of significance to a layperson. None of the four criteria are mutually exclusive. It is not uncommon for a historic structure to have a related archaeological component.

Under special consideration, some cultural resources not otherwise eligible may be considered eligible. These include religious properties, moved properties, birthplaces and graves, cemeteries, reconstructed properties, commemorative properties, and properties less than 50 years old.

National Environmental Policy Act, as amended

NEPA (42 U.S.C. §§ 4321–4370c.) provides the statutory basis for considering impacts on the cultural environment as a whole, as well as cultural resources that are not historic properties. NEPA places the responsibility on the federal government to "preserve important historic, cultural, and natural aspects of our national heritage, and maintain, whenever possible, an environment [that] supports diversity and a variety of individual choice" (42 U.S.C. § 4331[b][4]). NEPA requires federal agencies to conduct an interdisciplinary analysis of the environmental consequences of their actions early in the decision-making process. For cultural resources, this analysis considers the effects of agency actions on physical features such as archaeological sites, buildings, and structures, as well as the practice of religious and other traditional lifeways that reflect community heritage. Implementing regulations are found in 40 CFR §§ 1500–1508, 36 CFR § 800.8, and 32 CFR § Part 775.

Federal Land Policy and Management Act of 1976

The FLPMA (P.L. 94-579; 43 U.S.C. §§ 1701 et seq.) mandates that public lands be managed in a manner that will protect the quality of scientific, scenic, historic, ecological, environmental, air and atmospheric, water resource, and archeological values. Title VI of the FLPMA establishes the California Desert Conservation Area. BLM, under the Secretary of the Interior, is the implementing agency for FLPMA. However, under 43 U.S.C. § 1781.h, the Secretary of Agriculture and Secretary of the Defense manage public lands that fall within their respective jurisdictions if the lands are located within or adjacent to a California Desert Conservation Area. Permits authorizing the collection of fossils for scientific purposes are issued under FLPMA.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (as implemented by 43 CFR 7) was enacted to protect archaeological resources on public lands and Indian lands and to acknowledge that archaeological resources are an irreplaceable part of America's heritage. The Archaeological Resources Protection Act applies when a project may involve archaeological resources located on federal or tribal land. The Archaeological Resources Protection Act requires that a permit be obtained before excavation of an archaeological resource on such land can take place and that

artifacts recovered during excavation are curated at an appropriate facility. Section 7.8 of 43 CFR 7 includes professional qualification standards for archaeologists conducting work under the permit covered by this act. The act also provides for the notification of Indian tribes when sites of cultural or religious importance could be harmed. In addition, it details descriptions of prohibited activities and financial and incarceration penalties for convicted violators. It provides authority to federal officials to better manage archaeological sites on public land (16 U.S.C. 470aa-470mm).

Antiquities Act; Title 16, U.S.C. Section 431-433

This act authorizes the president to designate as national monuments objects or areas of historic or scientific interest on lands owned or controlled by the United States. The act required that a permit be obtained for examination of ruins, excavation of archaeological sites, and the gathering of objects of antiquity on lands under the jurisdiction of the Secretaries of Interior, Agriculture, and Army, and provided penalties for violations.

Preserve America, Executive Order 13287

Agencies shall provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the federal government. Each agency is to provide and maintain an assessment of the status of its inventory of historic properties and their ability to contribute to community economic development initiatives.

Where consistent with its mission and governing authorities, and where appropriate, agencies shall seek partnerships with state and local governments, Native American tribes, and the private sector to (1) promote the unique cultural heritage of communities and of the nation and to realize the economic benefit that these properties can provide, and (2) cooperate with communities to increase opportunities for public benefit from, and access to, federally owned historic properties.

Indian Sacred Sites, Executive Order 13007

In managing federal lands, agencies shall, to the extent practicable, permitted by law, and not inconsistent with agency functions, accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites. Agencies are to avoid adversely affecting the physical integrity of these sites, maintaining the confidentiality of such sites, and informing tribes of any proposed actions that could restrict access to, ceremonial use of, or adversely affect the physical integrity of, sacred sites.

Consultation and Coordination with Indian Tribal Governments, Executive Order 13175

In formulating or implementing policies that have tribal implications, agencies shall respect Indian tribal self-government and sovereignty, honor tribal treaty and other rights, and strive to meet the responsibilities that arise from the unique legal relationship between the federal government and Indian tribal governments. The Executive Memorandum of April 29, 1994, outlines the principles that agencies are to follow in their interactions with Native American tribal governments.

The Timbisha Shoshone Tribal Homeland Act of 2000 designated a 640-acre parcel within the northern portion of the planning area (Darwin Subregion) as trust land for the Timbisha-Shoshone Tribe (Whitley 2000, Caton 2009).

American Indian Religious Freedom Act, 42 U.S.C. 1996

This act recognizes that freedom of religion for all people is an inherent right and that traditional American Indian religions are an indispensable and irreplaceable part of Indian life. Establishing federal policy to protect and preserve the inherent right of religious freedom for Native Americans, this act requires federal agencies to evaluate their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. Such evaluations are made in consultation with native traditional religious leaders.

Native American Graves Protection and Repatriation Act, 25 USC 3001-13

This act establishes requirements for the treatment of Native American human remains, and associated funerary objects, and objects of cultural patrimony on federal land. The implementing regulations for this act are found at 43 CFR 10. In the event of an inadvertent discovery of human remains and/or associated funerary objects, work shall stop in the immediate area and be protected. The federal agency is required to notify and consult with tribes that are, or likely to be, culturally affiliated with the remains and/or associated funerary objects. Upon request, each agency is required to return any such item to any lineal descendant or specific tribe with whom such item is associated.

CDCA Plan Cultural Resources Element

The general goals of the California Desert Conservation Area (CDCA) Plan Cultural Resources Element are to:

1. Broaden the archaeological and historical knowledge of the CDCA through inventory efforts and the use of the existing data. Continue the effort to identify the full array of the CDCA's cultural resources.
2. Preserve and protect representative sample of the full array of the CDCA's cultural resources.
3. Ensure that cultural resources are given full consideration in land use planning and management decisions, and ensure that BLM authorized actions do not result in inadvertent impacts.
4. Ensure proper data recovery of significant (NRHP quality) cultural resources where adverse impacts cannot be avoided.

These goals have not been modified in the West Mojave Plan.

3.9.3 Background

3.9.3.1 Regional Overview

The evaluation of potential cultural resources in accordance with the criteria established by the federal and state legislation and regulations described earlier is made with reference to a historic context. The context is defined as "the patterns or trends by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within history or prehistory is made clear" (National Park Service 1995). A general context for the consideration of cultural resources within the West Mojave Area is presented below.

Prehistory

The prehistory of the West Mojave Area spans four general temporal periods: Late Pleistocene and Early, Middle, and Late Holocene. In light of the many cultural sequences, the temporal periods are described below.

Late Pleistocene (20,000-10,000 BP)

Despite some claims for very early human occupation within the Planning Area (Davis et al. 1980), the earliest well-documented evidence is found in the form of the distinctive fluted Clovis-style projectile points that have been found at scattered locations throughout the region (Rondeau et al. 2007). Because these points are typically found on the surface and are not associated with radiocarbon assays, the dating of these early occupations remains problematic. However, Olivella beads from several sites within the Planning Area, including the Stahl Site in Inyo County, one site in Riverside County, and four sites in San Bernardino County (Goldstone, Awl Site, Rodgers Ridge, and Flood Pond), have yielded radiocarbon dates within the Late Pleistocene range. These sites were located adjacent to lakes or marshes and often contain a variety of artifact forms such as scraping tools, leaf-shaped bifaces, and associated debitage (i.e., prehistoric debris) (Erlandson et al. 2007; Fitzgerald et al. 2005). Based on the relatively high frequency of points and scrapers, these early groups have traditionally been seen as mobile big-game hunters; however, recent studies suggest that their economies were more diverse and focused on smaller animals and plant foods, and that large game played a minor role (Erlandson et al. 2007). They are believed to have lived in small populations in temporary camps located near permanent water sources (Sutton et al. 2007).

Early Holocene (10,000-7,500 BP)

In general, the transition from the terminal Wisconsin to the Early Holocene within the Mojave Desert was characterized by somewhat warmer and increasingly drier conditions. Pluvial lakes, while still present in the region, were generally retreating and had dried completely by around 8,000 years ago. Human use of the desert is manifested by the Lake Mojave Complex, which occurred between approximately 10,000 and 8,000 years ago, and is characterized by projectile points of the Great Basin stemmed series and abundant bifaces, steep-edged unifaces, crescents, and occasional cobble-core tools and ground stone implements. Sites attributed to the Lake Mojave Complex have usually been found only as surface deposits and lack materials suitable for dating. However, some radiocarbon dates have been obtained for sites at Lake Mojave, Fort Irwin, Twentynine Palms, Rosamond Lake, and China Lake (Sutton et al. 2007). These sites are

frequently found on the shorelines of pluvial lakes. Site types include residential bases, lithic workshops, and small camps. Settlement patterns are seen as highly mobile, with small social units visiting resource patches on seasonal rounds. Faunal remains have been found in limited quantities at Lake Mojave sites, but evidence from excavations at Fort Irwin suggest hunting focused on small game, reptiles, and rodents (Sutton et al. 2007).

Middle Holocene (7,500 to 4,000 BP)

During the first part of the Middle Holocene, a drier climate resulted in sporadic and relatively short-duration appearance of shallow desert lakes. Researchers have posited that during this period settlement within the Mojave Desert focused on upland contexts, along remnant pluvial lake basins and channels, and at spring/seep locations. During the early part of the Middle Holocene, the Pinto Complex (7,000 to 4,000 BP) appeared in the area encompassed by the Planning Area. Radiocarbon data from some sites in the Mojave Desert suggest that there was an overlap between the Lake Mojave and Pinto complexes and that the Pinto Complex may have begun in the Early Holocene (Sutton et al. 2007). The artifact assemblage includes Pinto points, leaf-shaped points and knives, drills, heavy-keeled scrapers, retouched flakes, choppers, hammerstones, and shell beads. Manos and flat milling stones appear in abundance for the first time in the Mojave Desert. Based on this high abundance of milling tools, intensive plant exploitation was one of the inhabitants' subsistence strategies and access to plant resources must have been an important factor in determining site placement (Sutton et al. 2007). Groups most likely consisted of multiple families living in centralized sites logistically close to locations used to gather resources (Sutton et al. 2007).

Sutton et al. (2007) propose that the Deadman Lake Complex may be somewhat distinct from the Pinto Complex. To date, the Deadman Lake Complex has been identified in the Twentynine Palms area only. The assemblage has small- to medium-size contracting stemmed points, an abundance of battered cobbles and core tools, bifaces, simple flake tools, milling tools, and shell beads from the Pacific Ocean and the Sea of Cortez. The artifacts are similar to Pinto Complex artifacts, but use the local igneous materials. Sutton et al. (2007) note also that it is possible the Deadman Lake Complex reflects a localized version of the Pinto Complex in which the sites are located at higher elevations and thus have access to different resources than those of the Pinto Complex in remnant pluvial lake basins.

Late Holocene (after 4,000 BP)

Following an approximate 1,000-year period of reduced occupation in the Mojave Desert (Sutton et al. 2007), the Gypsum Complex (approximately 4,000 BP and 2000 BP) emerged amid the somewhat wetter and cooler climatic conditions of the Late Holocene. The artifact assemblage characteristic of Gypsum sites consists of Elko, Humboldt, and Gypsum Cave points; triangular knives; large points with straight bases and shoulders; hammerstones; choppers; flake-based scrapers; scraper-planes; large drills with expanding bases; stone pendants; limited shell beads; millingstones; manos; mortars; and pestles (Warren 1984). Faunal remains from Gypsum sites indicate hunting focused on artiodactyls, lagomorphs, and rodents (Sutton et al. 2007).

Prehistoric sites and features with diagnostic elements indicate use of the Darwin area from at least the Newberry Period (ca. 4,000 -1,350 BP) through contact, though the potential for

evidence of earlier occupation exists in several sites where subsurface deposits have been identified and remain undisturbed.

In Owens Valley and the eastern Sierra, the period between 2000 BP and 1500 BP (the Newberry Period in regional chronologies) is characterized by highly mobile groups, caches of Elko and Humboldt Basal notched points, bifaces, and milling equipment (Eerkens and Spurling 2008; Faull 2007). Sites dating to the latter part of this period are typically base camps with structures and lithic reduction sites. Obsidian quarrying reached its peak during this period (Eerkens and Spurling 2008). Sites occur more in the Volcanic Tablelands and northern Owens Valley than in the southern Owens Valley area (Poulson 2009).

The Late Holocene from about 1500 BP to the time of the historic era is viewed by most archaeologists as the extension of the ethnographic present. A series of dry and wet episodes characterize the climate during this period (Larsen and Michaelsen 1989; Sutton 1996, Weide et al. 1974). Lakes in the Mojave Desert started to dry up and site locations are centered near ephemeral water sources during the latter part of this period.

The Rose Springs Complex during the latter part of the Late Holocene (1500 to 1000 BP) marked the beginning of the bow-and-arrow technology in the Mojave Desert. These sites have well-developed middens and a variety of material culture including Eastgate and Rose Spring projectile points, stone knives, drills, pipes, bone awls, milling tools, marine shell artifacts, and large quantities of obsidian (Sutton et al. 2007). The sites are found near springs (Saratoga, Rose) along washes and sometimes along lakeshores (Rogers/Rosamond and Koehn lakes). Evidence of wickiups and pit houses has been found in two sites in the western Mojave Desert (Sutton et al. 2007).

In the Owens Valley, sites dating to 1500-600 BP (identified in regional chronologies as the Haiwee Period) show evidence of more sedentary groups with semi-subterranean houses. The bow and arrow (Rose Spring and Eastgate points), and storage pits are introduced, and artifact caching mostly disappears (Faull 2007). Production at obsidian quarries drops off (Eerkens and Spurling 2008). The band-like structure is replaced by the household as the primary socioeconomic unit (Poulson 2009). Subsequently, (600 BP to contact, Marana Period Cottonwood and Desert Side-notched points and Owens Valley Brown ware (a coil and scrape type of construction) are introduced and there is an increase in ground stone tools as the harvesting of green pinyon nuts becomes a subsistence focus (Bettinger 1989; Eerkens and Spurling 2008).

Protohistory and Ethnographic Context

To evaluate cultural development, archaeological explanations need to be expanded. The similarities between the Late Holocene period and the ethnographically recorded occupation of the area have resulted in an extrapolation from the ethnographic present to Late Holocene patterns. While this has its difficulties, certain types of ethnographic information can be employed in the evaluation of the archaeological record. Perhaps the most valuable is the linguistic structure of the area.

The use of linguistic evidence for prehistory is more tenuous than the more substantial cultural material record but it can provide important insight. If the archaeological record and linguistic evidence both reflect actual activities, the reconstruction proposed by one field should be substantiated by the other. When an area undergoes an intensive linguistic change (as from one

stock to another), it may also undergo a corresponding change in the material remains left by the people involved. If two groups are in extended contact, their nonlinguistic elements can be assimilated while their language may remain relatively distinct (Bright and Bright 1965).

One of the most important questions that needs to be addressed and that requires consideration of ethnographic and linguistic information is the development of the location of the native populations at the time of contact. Where did they come from, and when did they arrive?

The major linguistic division within the Planning Area is the Uto-Aztecan stock, which includes the Numic and Takic subfamilies. Speakers of languages derived from the Numic branch of the Uto-Aztecan language group include the Kawaiisu, Southern Paiute, Western Shoshone, and Owens Valley Paiute; the speakers of the languages derived from the Takic branch include the Cupeño, Kitanemuk, Serrano, and Cahuilla (Warren 1984).

Evidence for population movements and the location of these groups at contact have been evaluated based on diagnostic artifacts, projectile points, milling technology and ceramics, burial patterns, and specialty items such as crescentics and beads.

Numic/Takic Language Subfamilies (Mojave Desert/Western Great Basin)

Golla (2007) proposes the development of the Numic and Takic languages in California as dating from about 2000 years ago, and that the Numic languages developed somewhat more recent between 1500 and 2000 years ago. Bettinger and Baumhof (1982) estimate a time depth for the split between the Numic dialects beginning around 800 years ago.

In most explanations, the expansion of the Uto-Aztecan languages within the Mojave Desert and Western Great Basin show similar time depths to the Yuman languages in the Colorado Desert. As with the Yuman languages, expansion toward the coast either filled a void or replaced an existing population. Early explanations described the "Uto-Aztecan wedge" based principally on the assumption of a broad Hokan dispersed language group and the position of the Uto-Aztecan languages relative to the Salinan and Yuman languages. This explanation is challenged by both the proposed timeline for their development and the archaeological record.

As noted earlier, the four tribes that speak languages from the Numic branch are the Kawaiisu, Southern Paiute (Chemehuevi), Western Shoshone, and Owens Valley Paiute, and the four tribes that speak languages from the Takic branch include the Cupeño, Kitanemuk, Serrano, and Cahuilla. As stated above, to understand what remnants may have been left behind by these tribes, it is important to know where their traditional territories are located. The following is a description of lands traditionally occupied by each tribe.

The Kawaiisu occupied the southern end of the Sierra Nevada watershed by the Piute and Tehachapi mountains at the line between the Great Basin and California cultures. The habitat was in the mountainous ridge between the Mojave Desert and the San Joaquin Valley. One source suggests that there were Mountain Kawaiisu who lived in the Piute and Tehachapi mountains and Desert Kawaiisu who lived east of Tehachapi into southern Death and Panamint valleys where they sometimes lived with Shoshone (Garfinkel and Williams 2009).

The Chemehuevi are considered a subgroup of the larger Southern Paiute group. The Chemehuevi occupied territory west of and along the Colorado River, south of Needles into eastern Mojave Desert as far east as Providence Mountains (Kroeber 1925; Kelly and Fowler 1986). In 1776, there were no Chemehuevi along the Colorado River; however, they moved into

the Chemehuevi Valley after the Halchidoma were forced to move east with the Maricopa. After 1876, they moved back to the remote desert when war broke out with the Mojave (Kroeber 1925).

The Western Shoshone occupied a region that included Death Valley through the highlands of central Nevada into northwestern Utah, Skull, Deep Creek, Panamint, and Saline valleys (Thomas et al. 1986, Norwood et al. 1980).

The Owens Valley Paiute occupied a narrow valley along the Owens River on the eastern side of the southeastern Sierra Nevada and extends north to Benton, California, and east to Fish Lake Valley, Nevada (Liljeblad and Fowler 1986; Norwood et al. 1980; Steward 1934).

The Cupeño were a small group of about 500 to 750 who occupied an area approximately 10 miles in diameter south of the San Luis Rey River and centered on the area now known as Warner Springs within the valley of San Jose de Valle (Bean and Smith 1978b; Kroeber 1925).

The Kitanemuk lived in the Tehachapi Mountains at the southern end of the San Joaquin Valley with Antelope Valley being their southern boundary (Kroeber 1925; Blackburn and Bean 1978).

The Serrano territory generally encompassed the San Bernardino Mountains east of Cajon Pass, east to Twentynine Palms and south to Yucaipa Valley (Bean and Smith 1978a).

The Cahuilla occupied mountains, passes, canyons, valleys, and desert from the Colorado Desert north of the Chocolate Mountains and across to Borrego Springs, westerly along Palomar Mountain, northerly to the Santa Ana River near Riverside, then easterly along the San Bernardino Mountains to Orocopia Mountain, and encompassing the San Jacinto and Santa Rosa mountain ranges (Bean 1978).

Cultural Characteristics for Numic and Takic Language Speakers

Cultural characteristics similar for Numic and Takic language speakers in the Mojave Desert include diagnostic point types and coil and scrape pottery or paddle and anvil pottery (Bean 1978; Bean and Smith 1978a; Thomas et al, 1986). There are four point types that may be associated with contact populations in the Numic/Takic language area: Rose Spring, Eastgate, Cottonwood and Desert Side Notched. These tribes also traditionally cremated their dead with the exception of the Kitanemuk and Kawaiisu (Strong 1929, Blackburn and Bean 1978; Zigmond 1986; Kelly and Fowler 1986, Garfinkel and Williams 2009). The Western Shoshone and Owens Valley Paiute practiced both cremations and burials (Busby et al. 1979; Thomas et al. 1986). The Cahuilla and Southern Paiute (Chemehuevi) also were agriculturalists and the Owens Valley Paiute practiced a specialized irrigation system to grow crops (Bean 1978, Busby et al. 1979, Kelly and Fowler 1986; Steward 1933). Sutton et al. (2007) suggest a geographic difference for artifact types. They note that the northern Mojave Desert or the Numic language areas have a combination of Desert Side Notched and Cottonwood triangular points, brown ware pottery, some buff ware pottery near the Mojave River, and primarily Coso obsidian artifacts. The eastern portion of the Mojave Desert also representing Takic language areas have only Cottonwood triangular points, brown and buff ware pottery, and local obsidian artifacts. The Mojave River appears to have been a boundary between the Takic and Numic speakers (Sutton et al. 2007).

Historic Period

Initial Exploration by Europeans

The term historic period generally is defined as the period after initial contact between Native American groups and European explorers/settlers, when written sources about the area become available. An arbitrary date for the beginning of the historic period for California would be 1540, with the expedition of Spanish explorer Hernando de Alarcon. Alarcon's expedition brought the first Europeans to the Planning Area. The expedition sailed up the Colorado River as far as the confluence of the Colorado and Gila Rivers (Woznicki 1968). In the same year Melclor Diaz led an expedition by foot up to the confluence of the Colorado and Gila rivers. In 1700, Father Eustebio Francisco Kino traveled from Sonora, Mexico, to the Yuma area, and for the next few years Spanish priests and missionaries moved up and down the Colorado and Gila rivers visiting the tribes.

Exploration into central and northern portions of the Planning Area was slower and more intermittent. In 1772 Pedro Fages, a Spanish army officer and commander of California's Spanish force, crossed into the Planning Area while following a band of runaways from the presidio at San Diego (Greene 1983). His chase appears to have led him through the San Bernardino Valley, over to the high desert near Cajon Pass, and into the Mojave Desert before proceeding on to the south end of San Joaquin Valley and then on to Monterey (Greene 1983). Juan Maria de Rivera explored the southern portions of Colorado and Utah in 1765 during an expedition to find routes west from Santa Fe, New Mexico. In 1776, an expedition by Franciscan missionaries Francisco Atanasio Dominguez and Silvestre Velez de Escalante left Santa Fe, New Mexico, looking for a route to the California coast. They did not reach the coast, but did explore portions of the Great Basin before turning back (Malouf and Findlay 1986).

Trails, Trading Routes, and Transportation

The first Spanish period trails in the Planning Area were pioneered by the de Anza Expeditions in 1774-1775 and 1775-1776. Mexico gained its independence from Spain in 1821, but travel in the Planning Area was still limited. Travel on the existing trails in the area increased after restrictions against private traders were lifted (Malouf and Findlay 1986). American trappers and traders began working the northern portion of the Planning Area in increasing numbers in the early 1800s, including groups led by Jedediah Smith in 1826-1827 and Peter Ogden in 1829-1830 (Malouf and Findlay 1986). Both these groups came into California in the region of Needles and moved west through the Mojave Desert, using the Mojave Indian Trail, and then north into the San Joaquin Valley (Malouf and Findlay 1986).

A primary route for the growing trade was the Old Spanish Trail, pioneered by Antonio Armigo in 1829. The Old Spanish Trail began in Santa Fe, New Mexico, and ended at the Pacific Ocean at the Pueblo of Los Angeles. Armigo's route included portions of the routes blazed by de Rivera, Dominguez and de Escalante, and Jedediah Smith. The portion of the trail route within the Planning Area followed the Mojave River west past what is now Barstow, then southwest through the Cajon Pass to Mission San Gabriel and on to Los Angeles.

The Old Spanish Trail became increasingly important to trade in the 1830s, being used by many American trappers and traders. The Mojave River Valley was also a popular route for horse and cattle thieves and Native American slave traders bound for the established settlements in New Mexico. The trail was designated in 2002 as a National Historic Trail.

The Southern Pacific Railroad constructed a railroad line from Mojave to Needles, on the Colorado River, between 1882 and 1883, which increased the exploitation of the regions' mineral resources (Hector 1987). The town of Barstow, originally named Waterman, was founded in 1886 as a town for railroad workers. The establishment of a main transfer station at Yermo, 10 miles from Barstow, resulted in significant growth in Barstow itself (Hector 1987).

The completion of the San Pedro, Los Angeles, and Salt Lake Railway line from Salt Lake City, Utah, to Barstow in May of 1905 further increased the town's importance. Much of the route ran through only sparsely inhabited areas in the Planning Area, Barstow being the only town of any size. Although not a large town, Kelso, on the line east of Barstow, was a major staging stop for the railroad.

Numerous small railroads were constructed in the Planning Area for the express purpose of servicing mining operations. The Borate and Daggett Railroad, constructed in 1898, was used to haul borate the dozen miles from the mines at Borate to the Southern Pacific line at Daggett (Ross 2002). Many Navajo Native Americans worked on the construction of the line. The Borate and Daggett ran for nine years, carrying mail and passengers in addition to its main cargo of borate (Ross 2002).

When the railroad route from Barstow to Needles was constructed, a dirt road was also established adjacent to the tracks (Hatheway 2001). This road was most likely built as part of the construction of the railroad, but was soon used for wagon transportation. Through the rest of the 1800s and into the first decade of the 1900s, the road was only lightly used, since the train provided a much more cost-effective way of transporting people and goods through the area. After the turn of the century, however, the rise of the automobile made the road a potential route from Nevada to the west coast. The County of San Bernardino improved the existing dirt road in 1911 (Hatheway 2001), possibly to entice the State of California to adopt the route as a highway. Plans were being formed for a highway connecting the east coast and west coast, and the Needles to Barstow to Los Angeles route was one of the main considered alignments.

Mining

Mining has been a recurring and significant factor in the development of the Planning Area. By the early 1850s, gold deposits had been discovered in San Bernardino County around Leach Lake and Lytle Creek (Greene 1983.) In the early 1860s, gold was discovered in the Picacho Peak area north of Blythe and in the Bear and Holcomb Valleys in the San Bernardino Mountains. In the 1870s, gold mining began in earnest in both the northern and southern portions of the planning area. Silver and gold deposits were identified in Darwin in 1874, prompting a mining boom that, at its peak in 1876, included a population of 1000 miners, families, and immigrant workers, 20 mines, 200 buildings, 2 smelters and an extension route for the Cerro Gordo Freighting Company with regular service to the ports of Los Angeles. Further south in the same timeframe, mining began in the Little San Bernardino and Eagle Mountains near Twentynine Palms and Joshua Tree National Park. The oasis at Twentynine Palms had originally been explored by a military survey party led by Colonel Henry Washington in 1885 (Greene 1983). At its height of operations the area supported numerous mining districts (Greene 1983). At its full extent the area in and around the park supported numerous mining districts, including Twentynine Palms, Washington, Gold Park, Piñon, Cottonwood, Eagle Mountain, Monte Negras, Rattler, and Dale (Greene 1983:89-90).

One of the major mining areas opened up as a result of the Southern Pacific line from Mojave to Needles was the Buckeye Mining district, located in the mountains south of the rail line and approximately 50 miles east-southeast of Barstow. Two of the principal mines begun in the area in the late 1880s were the Bagdad and Roosevelt mines, established by John Suter (Ross 2001). A rich gold ore deposit was found in the late 1890s, after the claims had been sold by Suter. The first shipment of ore was delivered to the Randsberg-Santa Fe reduction company's stamp mill in Barstow in 1901 (Ross 2001). A second mining company, the Benjamin E. Chase Gold Mining Company, had been set up in the Buckeye district. Chase was also the president of the Ludlow & Southern Railway, which was built in 1903 to transport ore form the Chase mines to the railhead at Ludlow (Ross 2001). The two operations merged in 1904, and between then and 1910 it was the largest gold producing operation in San Bernardino County. It was also the largest copper producing operation in the county. Gold production fell after 1910, and the mines were worked intermittently from 1910 to the 1970s.

A mining boom started in the Mojave Valley in 1860 after silver was discovered by Robert W. Waterman and John L. Porter (Hector 1987). By the early 1880s the Calico silver mining district was established, and the town of Calico was founded in 1881 along the Mojave River. Silver deposits were also discovered around Ivanpah, which became a major mining district in the 1870s, and in the Providence Mountains in the 1870s-1880s (Greene 1983). In addition to silver and gold, borate deposits were found in 1883 north of Daggett by Hugh Stevens and Bill Neel. Mining commenced soon after, and in 1888 the most promising claims were purchased by Francis M. Smith, who also owned the borax mines in the Death Valley area.

Numerous silver mines were also established during the early 1860s in the Coso Range, resulting in the establishment of the Coso Mining Company and the Coso Gold and Silver Mining Company, among others (Norwood et al. 1980). Mining success fluctuated greatly in these areas and was never as successful as some other areas. A third mining area was established in 1865 in the Inyo Range on the southeast side of the Owens Valley, centered at Cerro Gordo. This area was very productive, and by 1868 the Union Mine at Cerro Gordo was the most productive silver mine in the United States (Norwood et al. 1980). Labor disputes, lack of a railroad, and economic recession caused problems sustaining mining activities in some areas. Other areas with gold and silver finds relatively quickly became played out, and miners move on to more productive areas.

In addition to gold and silver, salt was mined in the Saline Valley east of Independence. Salt mining began in 1864 and continued until 1918, but transportation costs kept the enterprise from growing to a major operation (Norwood et al. 1980). The Saline Valley Salt Tram, located just east of the planning area, was completed in 1913 to transport salt over the Inyo Mountains to Owens Valley where it was then shipped via railroad. It was the steepest tram in the United States rising from 1,100 feet in the Saline Valley to 8,500 feet at the crest of the Inyo Mountains, and then dropping to 3,600 feet in Owens Valley. The tram is on the National Register of Historic Places (#74000514) (Conrad 1973).

From 1945 to 1957, the Anaconda Copper Company made the Darwin area the largest lead producing area in California. The mines were reopened again in 1967 and have remained active, albeit in a much less productive state. In a 1968, a report on the town of Darwin, it was estimated that there are 30 miles of workings and tunnels in the surrounding hills and canyons (Norwood et al 1980).

Agriculture and Ranching

As a result of the mining operations in the area around the Owens and Panamint valleys, farmers and cattlemen also moved into the area, especially the Owens Valley, to supply food to the miners. The influx of Americans into the area resulted in conflicts with the indigenous Native American groups (Norwood et al. 1980). Camp Independence was established by the Army in 1862 in the Owens Valley to quell Native American-White miner violence that had broken out in the area. Temporarily abandoned in 1864, it was re-occupied in 1865 after violence again broke out and remained active until abandoned in March 1877 (California State Military Museum 2011c).

Agriculture began in the Owens Valley as a response to the miners' need for food in the area. Although the area received little rain, the Owens River supplied enough dependable water for irrigation. By the beginning of the twentieth century, the city of Los Angeles was experiencing a severe water shortage and it was proposed to William Mulholland, president of the Los Angeles Water Department, that the Owens River be tapped to supply Los Angeles with water (Norwood et al. 1980). A $23 million bond was approved by Los Angeles voters, water rights were purchased, and an aqueduct was completed by 1913. The diversion of water to Los Angeles did not immediately impact agriculture in the Owens Valley, but a drought in 1921-1922 began a decline that ended farming in the area by the mid-1930s (Norwood et al. 1980).

During the 1880s, the area around Twentynine Palms began to be used as a cattle range, with a number of large cattle companies based in the Banning and Big Bear areas running their herds from Morongo Valley to Twentynine Palms (California State Military Museum 2011g). Ranches in the area included the Barker and Shay Ranch, Jim Mart’s "I-S" outfit, the Chase and Law Ranch, and the Talmadge brand, all of which used the area during the winter months. Warren’s Well was also the gathering point for the spring and fall cattle roundups until World War II (California State Military Museum 2011g).

Military Installations in the Planning Area

A chain of military posts was established in San Bernardino County between 1859 and 1860 by Captain James H. Carleton. These posts were created to protect the travel route, called the Old Government Road, from San Bernardino across the Mojave Desert to Fort Mojave, near Needles (Hector 1987). The posts were garrisoned by elements of the California Volunteers during the Civil War, and most were evacuated at the war’s end. Due to local concerns for protection of travel route and increasing mining activity, the posts were reoccupied in the late 1860s (California State Military Museum 2011b). Two of the more substantial posts were Fort Piute and Camp Cady. Fort Piute was established about 20 miles east of Fort Mojave, and Camp Cady was located about 20 miles east of Barstow (California State Military Museum 2011b). Both had permanent buildings constructed of either adobe or rock. Both also had histories of abandonment and reoccupation, with Fort Piute finally being abandoned in 1868 and Camp Cady in 1871 (California State Military Museum 2011b).

In Inyo County, Camp Independence was established by the Army in 1862 as a result of disputes between the Owens Valley Paiute and local ranchers. As cattleman and ranchers moved into Owens Valley and cattle grazed on the Paiute food supply, the Paiute stole and killed some cattle for food. The ranchers armed themselves and violence between the Native Americans and whites escalated; this became known as the Owens Valley Indian War (1861-1865). The ranchers asked

the help of the military in Los Angeles and Fort Tejon. Camp Independence was built to quell the conflicts between the Native Americans and ranchers and protect the road to the mines in Nevada. The Paiute were escorted to San Sebastian Indian Reservation in 1863. The camp operated until 1877 when disputes subsided (California State Military Museum 2011c).

The presence of the military in the Planning Area increased dramatically in the years immediately before and after America entered World War II. One of the first to open was Fort Irwin. Originally established as the Mojave Anti-Aircraft Range, it was opened in 1940. In 1942 the range was renamed Camp Irwin, in honor of MG George LeRoy Irwin (California State Military Museum 2011e). It was deactivated in 1944 and reactivated in 1951 as Camp Irwin Armored Combat Training Area for troops destined for the Korean conflict (California State Military Museum 2011e). The first antenna to support the National Aeronautics and Space Administration's unnamed exploration of deep space, called Pioneer Deep Space Station, was constructed at Fort Irwin in 1958 (NPS 2013). Renamed Fort Irwin in 1961, it was declared a permanent installation. Deactivated again in 1971, it was reactivated in 1980 as the National Training Center and serves as a major training facility for the Army, Marine Corps, and National Guard (California State Military Museum 2011e). The Pioneer Deep Space Station National Historic Landmark is located within Fort Irwin and is on the National Register (#85002813).

Edwards Air Force Base (AFB), located north and east of Lancaster, was established in 1942 on land first purchased in 1933 for use as a bombing range of units stationed at March AFB (Miksell 2000). The facility was from inception used for testing of highly secret developmental aircraft (Miksell 2000). Rogers Dry Lake is located within the base and its natural attributes of clean air, isolated location, weather, variable terrain, and large expanse was ideal for the military to flight test aircraft. The base emerged during the Cold War as a premier Air Force high-technology complex, especially important in the areas of experimental flight testing, captive flight testing (test tracks), rocket propulsion research, and in the 1960s, a center for astronaut training (California State Military Museum 2011d). Edwards AFB continues to be a major testing facility of new and experimental aircraft. In 1985 Rogers Dry Lake was added as a National Historic Landmark and is now listed on the NRHP (# 85002816). It is also a National Historic Site and as such part of the National Park system.

The Marine Corps Air Ground Combat Center, Twentynine Palms (MCAGCC) was first opened in 1940 as an Army glider training area (California State Military Museum 2011g). Converted to an Army fighter pilot training and bombing range in 1943, it was decommissioned and the land transferred to the County of San Bernardino in 1945. In 1952 the Marine Corps took control of the property and named it Headquarters Marine Corps Training Center, Twentynine Palms, California (State Military Museum 2011g). It became the MCAGCC, Twentynine Palms in 1979. At approximately 495 square miles, it is the largest Marine Corps Base in existence.

The Marine Corps Logistics Base, Barstow, opened in the summer of 1942 as Navy Supply Depot, Barstow, but was transferred to the Marine Corps as it was being completed in December of the same year (Hector 1987). The logistics base supplied material needed for the Fleet Marine Forces in the Pacific theater during World War II. The base also saw significant expansion during the Korean War years, and has continued to expand its services to the Marine Corps in the subsequent decades (Hector 1987). Because it employs a large number of civilian workers, the growth of the base has also resulted in the growth of the nearby town of Barstow.

Naval Air Weapons Station China Lake (NAWS CL), originally called Naval Ordinance Test Station Inyokern, was established in 1943 for the California Institute of Technology to conduct research into rockets and rocket propellants (Miksell 2000). NAWS CL continued after World War II with development and testing of guided missiles, jet aircraft ejection systems, and later space program capsules and the intercontinental ballistic missile development program (Miksell 2000). NAWS CL is the Navy's largest single land holding at 19,600 square miles and continues as their center for research, testing and evaluation of weapons systems. The Coso Rock Art District National Historic Landmark is within the boundaries of NAWS CL and is on the National Register (#66000209).

3.9.3.2 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 3.9.3-1. 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.

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.
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.

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
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.
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 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.

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
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
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

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
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).
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.

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current 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).

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current Condition
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).
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.

Table 3.9-3. Other West Mojave Sites Monitored for this Planning Effort

Name	Cultural Resource Values	Current 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.
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 42 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.
Christmas Canyon	Prehistoric. Subject of current research that is revealing a large and very significant complex of sites, including examples of rare cultural phenomena. Some sites are related to various stands of Pleistocene Lake Searles and preliminary dates indicate great age for some of them, while at least one site contains historic materials, indicating a very long period of 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.
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.

Table 3.9-4. Cultural Resource ACECs in the West Mojave Area

ACEC	Cultural Resource Values
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

Most archaeological sites have not been evaluated for their significance or eligibility for listing in any formal roster of significant sites. Because 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. As a component of the Supplement, BLM conducts a Class I records review for each grazing allotment at the time of permit renewal. Regular monitoring and intensive inventory is conducted in areas of livestock congregation; specific issues identified from livestock grazing on cultural resources are addressed on a case-by-case basis. On grazing allotments within the WEMO Planning Area, there are a total of 1,365 prehistoric, 570 historic, 99 combined, and 234 unknown cultural resources, for a total of 2,268 cultural resources potentially affected by grazing.

3.9.3.3 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.

3.10 Visual Resources

Visual resources refer to any objects (manmade and natural, moving and stationary) and features, such as landforms and waterbodies 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.

3.10.1 Visual Resource Management System

The BLM's Visual Resource Management (VRM) program is implemented through the VRM system, which provides a way to identify visual resources and to establish objectives for managing those values, as well as the management actions to achieve the visual management objectives. The VRM system is composed of four elements: (1) visual resource inventory (VRI), (2) establishment of VRM class objectives through land use planning, (3) implementing land use plan decisions through evaluating visual impacts from project-level activities and developing design features and mitigation measures to meet the VRM class objectives. The VRI is a method for determining relative baseline visual values. The VRI consists of a scenic quality evaluation, sensitivity level analysis, and delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four VRI classes, which spatially delineate the general distribution of relative visual resource values (BLM 1986). VRI Class I is reserved for special areas where a management decision to preserve the natural landscape condition preceded the land use planning process. For example, national wilderness areas, the wild section of national wild and scenic rivers, and other congressionally and administratively designated areas.

VRI Class II, III and IV are the result of the three VRI factors being evaluated in combination to assign a VRI Class. VRI Class II lands have the greatest relative visual value, and VRI Class IV lands have the lowest relative visual value. The VRI classes do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities. However, VRI values should be discussed when describing the visual impacts of a proposed surface-disturbing action. The VRI class values and the individual VRI factors serve as the primary source of information for the Visual Resource Management (VRM) Class decisions in BLM Resource Management Plans (RMPs). VRM classes may differ from VRI classes, based on management priorities for land uses.

VRM Classes and Objectives

> VRM Class Objective I: To preserve the existing character of the landscape. Allowed Level of Change: This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class Objective II: To retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

VRM Class Objective III: To partially retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

VRM Class Objective IV: To provide for management activities which require major modification of the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape can be high. Management activities may dominate the view and may be the major focus of viewer attention. However, the impact of these activities should be minimized through careful siting, minimal disturbance, and repeating the basic elements of form, line, color, and texture within the existing setting.

3.10.2 Current Conditions and General Visual Setting

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. The principle 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, providing a good visual effect, but they are also monochromatic. 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.

3.10.3 Visual Resource Management Classes

Through the 2016 DRECP LUPA, BLM designated Visual Resource Management (VRM) Classes on all lands within the WEMO Planning Area. The acreage included in each VRM class is summarized in Table 3.10-1.

Table 3.10-1. Visual Resource Management Classes in the WEMO Area

VRM Class	Surface Acres	Percent of Planning Area
I	510,908	16.5

Table 3.10-1. Visual Resource Management Classes in the WEMO Area

VRM Class	Surface Acres	Percent of Planning Area
II	572,239	18.5
III	1,172,252	37.9
IV	839,164	27.1
Total	3,094,563	100

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 impact analysis in Chapter 4 evaluates not only on the total mileage of routes, but the mileage within each VRI Class and VRI component in the planning area. In Class III and IV areas, routes and vehicles may not be dominant, or even noticeable, and while the impact would still be considered adverse, it would be limited in magnitude. In Class I and II areas, where the objectives are to avoid attracting the attention of a casual viewer, the magnitude of the impact becomes more severe. Also, much of the impact from the route network is from the presence of the routes, rather than their use. The presence of routes would not substantially vary among alternatives, since the rate of rehabilitation would be the limiting factor in the planning horizon (which would not vary among alternatives) rather than the number of routes to be rehabilitated. Although motorized vehicle access is considered to be an adverse impact to the resource, it is also necessary, in many areas, to provide access for viewers to enjoy the visual resources in the region. Therefore, the level of impact can be subjective, depending on the viewer. A separate visual resources inventory was not conducted for livestock grazing.

3.11 Special Designations

Specially designated areas within the WEMO Planning area include wilderness areas, Wilderness Study Areas (WSAs), Lands Managed for Wilderness Characteristics, Areas of Critical Environmental Concern (ACECs), California Desert National Conservation Lands (CDNCLs), and Desert Tortoise ACECs (DT ACECs, formerly designated as Desert Wildlife Management Areas [DWMAs]). These areas are managed to protect specific resources and values that were associated with their designation. The locations of ACECs are shown in Figure 3.11-1, and wilderness areas and WSAs are shown in Figure 3.11-2. The locations of DT ACECs were shown in Figure 3.4-68. Information on designated wilderness areas and ACECs in grazing allotments is displayed in Table 3.11-1.

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 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, together with the amount of public land ownership within each. More information on each of these Wilderness Areas can be found at http://www.blm.gov/ca/st/en/prog/wilderness/wa/list_wa.html.

Table 3.11-1. Wilderness 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
Death Valley	70
El Paso Mountains	24,279
Golden Valley	36,553
Grass Valley	32,835
Joshua Tree	9
Kelso Dunes	15
Kiavah	21,910
Mojave	3

Table 3.11-1. Wilderness Areas within the WEMO Planning Area

Wilderness Area Name	Acres Managed by BLM
Newberry Mountains	27,746
Owens Peak	50,860
Pinto Mountains	24,950
Rodman Mountains	34,239
Sacatar Trail	34,087
San Gorgonio	41,460
Sheephole Valley	33,887
Total = 21 areas	**538,506 acres**

The purpose of wilderness, as defined in section 2(a) of the Wilderness Act, is "...to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas in the United States...leaving no lands designated for preservation and protection in their natural condition...". Further, wilderness is defined in Section 2(c) of the Wilderness Act to be areas "...where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions…"

Section 4(c) of the Wilderness Act prohibits certain uses of wilderness. These prohibitions include commercial enterprise, permanent roads, temporary roads, use of motor vehicles, motorized equipment or motorboats, landing of aircraft, use of other forms of mechanical transport, and structures or installations. There are three classes of exceptions to some or all of the prohibitions. These include private existing rights (e.g., rights associated with a lease for a microwave tower that existed at the time of wilderness designation), actions necessary to meet the minimum requirements for the administration of the area, (e.g., use of motorized equipment to remove hazardous materials), and "Special Provisions" (e.g., livestock grazing that was established prior to designation).

The California Desert Protection Act of 1994 (CDPA), at Title I for BLM Wilderness, provides for motorized vehicle access for (1) fish and wildlife management activities by appropriate State agencies and (2) law enforcement. At Title VII, the CDPA establishes explicit federal water rights, allows access for Indian religious purposes, and provides mandates and procedures for acquiring State and private inholdings.

Wilderness areas are managed according to several internal policies, including BLM Manual MS-6340, Management of Designated Wilderness Areas (BLM 2012), in addition to 43 CFR 6300, Wilderness Management, and Principles for Wilderness Management in the California Desert (Desert Managers Group 1995).

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 critical tortoise habitat. These include the Rodman Mountains, Newberry Mountains, Black Mountain, Grass Valley, Pinto Mountains, and portions of Golden Valley wilderness areas.

Wilderness Study Areas (WSA)

There are four designated wilderness study areas in the planning area. These include the Cady Mountains WSA, the Soda Mountains WSA, the Sacatar Meadows WSA and the Great Falls Basin WSA.

To fulfill direction from Congress, under Section 603 of FLPMA, the BLM conducted its wilderness review process. This process was carried out by first inventorying public lands to determine which lands had wilderness characteristics, which was done with extensive public involvement. Lands found to have wilderness characteristics were administratively designated as WSA. For the CDCA this was documented in the Wilderness Inventory Final Descriptive Narratives, completed in March 1979 (BLM 1979). That inventory identified 138 Wilderness Study Areas comprising more than 5.5 million acres. Section 603 of FLPMA requires that, until the Congress determines otherwise, the Secretary of Interior shall manage these lands so as not to impair the suitability of these lands for preservation as wilderness.

The CDPA and the Omnibus Public Land Management Act of 2009 designated wilderness based in part on these WSA. The CDPA also released some public lands from WSA status, and identified some existing WSA that would continue to be managed to the non-impairment standard until Congress makes a future decision on these lands. The WEMO Planning area contains approximately 315,230 acres within seven WSA identified by Congress in the CDPA.

All WSA are managed so not to impair the suitability of the area for preservation as wilderness and prevent unnecessary or undue degradation, in accordance with the BLM Wilderness Study Area Manual MS-6330 (BLM 2012), and will continue to be managed in that manner until Congress either designates them as wilderness or releases them for other uses.

As with wilderness, allowable pre-existing use as described in FLPMA, only apply to grazing, mining, and mineral uses, or as specifically identified in the legislation, and do not include other uses such as recreational activities. Although most recreational activities (including hiking, horseback riding, fishing, hunting and trapping, camping, and other primitive forms of recreation) are allowed in WSA, some activities may be prohibited or restricted if they do not meet the non-impairment standard or one of the exceptions.

While access on primitive routes or ways in WSA is allowed, BLM policy does not provide for motorized use of these routes unless continuous use and designation of that use has been established from 1976 onward. The result of the policy is that routes, once eliminated from the travel network, cannot be established in the network again until Congress releases the land for other uses.

WSA Guidance directs BLM to comply with the wilderness non-impairment mandate (FLPMA Section 603(c)). BLM must monitor and regulate the activities of off-highway vehicles (OHVs) in WSA to assure that their use does not compromise these areas by impairing their suitability for

designation as wilderness. The BLM's Off Road Vehicle Regulations (43 CFR 8342.1) require that BLM establish off-road vehicle designations of areas and routes that meet the non-impairment mandate. BLM's policy is that cross-country vehicle use in WSA does cause the impairment of wilderness suitability. As described in BLM Manual 1626—Travel and Transportation Manual, "Any motorized/mechanized linear transportation feature located within [WSA] will be identified in a transportation inventory as a motorized/mechanized 'primitive route'...Primitive routes will not be made a part of the transportation system, classified as a transportation asset, or entered into the Facility Asset Management System (FAMS) unless one of the following conditions is met:

A. The routes are designated as non-motorized and non-mechanized trails, or

B. Congress releases the WSA from Wilderness consideration."

Motorized/mechanized primitive routes may be signed only to the extent necessary to prevent resource damage or users getting lost; they may not be assigned names or numbers that would appear to create a de facto route system.

Though motorized and mechanical transport may be permitted to continue along existing primitive routes, "closed" designations may be appropriate for WSA, or portions of WSA, where LUP planning goals are to provide primitive recreational opportunities, or where needed for the protection of an identified natural resource.

3.11.2 Lands Managed for Wilderness Characteristics

In accordance with Section 201 of FLPMA, the BLM is required to prepare and maintain on a continuing basis an inventory of public lands and their resources and other values. Per Section 603 of FLPMA, this includes lands with wilderness characteristics as defined in Section 2 of the Wilderness Act of 1964. Such lands do not, in and of themselves, imply particular land uses. All lands that are not currently designated as wilderness or WSAs are assessed during the LUP process to determine if they possess one or more wilderness characteristics. These characteristics generally include naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation.

Considering wilderness characteristics in the land use planning process may result in several outcomes related to land use, including, but not limited to: (1) emphasizing other multiple uses as a priority over protecting wilderness characteristics; (2) emphasizing other multiple uses while applying management restrictions (conditions of use, mitigation measures) to reduce impacts to wilderness characteristics; (3) the protection of wilderness characteristics as a priority over other multiple uses. This process is described by BLM policy in Manual MS-6320, Considering Lands with Wilderness Characteristics in the Land Use Planning Process, and BLM Land Use Planning Handbook, H-1601-1, Appendix C, (K) Wilderness Characteristics.

Management of lands with wilderness characteristics is part of BLM's multiple-use mandate, and is recognized within the spectrum of resource values and uses within the WEMO Planning Area. Lands with wilderness characteristics are defined for this planning effort as areas:

- Having been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.

- Having outstanding opportunities for solitude or a primitive and unconfined type of recreation.
- Potentially containing ecological, geological, or other features of scientific, educational, scenic, or historical value.

These lands may be managed for the use and enjoyment of area visitors and may be devoted to the public purposes of recreation, scenic, scientific, educational, conservation, and historical use. In addition, they could augment multiple-use management of adjacent and nearby lands through the protection of watersheds and water yield, wildlife habitat, natural plant communities, and similar natural values.

The process for these inventories is described in BLM Manual MS-6310, Conducting Wilderness Characteristics Inventory on BLM Lands. In addition to review and maintenance of existing lands with wilderness characteristics data, the inventory incorporates new data concerning resource conditions for lands previously determined not to possess wilderness characteristics; newly acquired lands; and citizen information (public nominations of the lands with wilderness characteristics) meeting the minimum standard for further review, to establish an updated, current inventory of lands with wilderness characteristics.

To address lands managed for wilderness characteristics, the BLM updated its inventory for the CDCA, including lands within 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. These units 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

Table 3.11-2. Lands Managed for Wilderness Characteristics

Unit Number	Acres
305	36,126.2
Total Number of Units = 15	Total Acres = 750,420.8

3.11.3 Areas of Critical Environmental Concern

Thirty-one Areas of Critical Environmental Concern (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. The current list of ACECs and conservation areas, with their current acreages, disturbance caps, and estimated current status of disturbance, 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%**

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)
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
Christmas Canyon	3,445	1%	9	0.26%
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/Butterbredt	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 Conservation Area	22,439	1%	162	0.72%
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%**

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)
	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.

3.11.3.1 ACECs Designated Prior to 2006 WEMO Plan

Information on these ACECs is summarized below. A CD of the complete ACEC Management Plans for each of these ACECs is available from the California Desert District Office. Where the ACEC Management Plans include management prescriptions related to transportation, including stopping, parking, and camping distances, that information is included within the following descriptions.

Afton Canyon

This ACEC protects a sensitive Mojave River riparian community and the scenic canyon in which it is located. Originally 4,726 acres, in 2006 the WEMO Plan expanded the ACEC southward. An Afton Canyon Natural Area management plan (1989) was prepared in cooperation with the CDFW under the Sikes Act and covers a larger area than the ACEC. The plan protects the ACEC and the adjacent desert habitat in the Cady Mountains, which is occupied habitat for bighorn sheep and contains nest sites for prairie falcon and golden eagle. Visitor facilities include two campgrounds, an equestrian campground, the Mojave Road, and interpretive signs and kiosks.

The 2006 WEMO Plan adopted the 1989 management plan recommendations, amending the MUC Class from M to L on 1,225 acres. The plan also adopted the provisions of the WEMO Plan for protection of bighorn sheep, prairie falcon, golden eagle, vermilion flycatcher, yellow-breasted chat, yellow warbler, summer tanager, least Bell's vireo, western pond turtle, desert tortoise, Mojave fringe-toed lizard, and all species of bats.

Amboy Crater

BLM designated the Amboy Crater as an ACEC within the Amboy Crater National Natural Landmark in 1987. The transportation-related management prescriptions for the unit allow stopping and parking within 25 feet, and camping within 100 feet, of centerline of designated routes.

Barstow Woolly Sunflower

BLM established a botanical ACEC northeast of Kramer Junction to protect the Barstow woolly sunflower. Although the area protects a relatively large population of this species, the ACEC represents only a small proportion of the overall range, which is limited to the western Mojave Desert. The desert tortoise and Mohave ground squirrel are also found within the ACEC. The State of California owns nine sections of land to the east and west, which CDFW manages for protection of desert plants and animals.

The 2006 WEMO Plan adjusted the boundary to encompass additional public lands northwest of Kramer Junction.

Stopping and parking of motor vehicles can take place within 50 feet of either side of the centerline of designated routes, while camping is restricted to existing disturbed areas along open routes.

Bedrock Springs

Bedrock Springs ACEC, located at the edge of the Golden Valley Wilderness, was established by the CDCA Plan to protect prehistoric values.

The 2006 WEMO Plan included this ACEC within the Mohave Ground Squirrel Conservation Area, and applied all conservation measures to the ACEC.

Big Morongo Canyon

BLM established the Big Morongo Canyon ACEC to protect habitat qualities for least Bell's vireo and triple-ribbed milkvetch. The Big Morongo Canyon ACEC is managed as a wildlife reserve, with emphasis on strict protection of the flora and fauna. This desert oasis is known internationally for its bird diversity, and opportunities are provided for wildlife viewing and photography, including boardwalk trails, interpretive displays and brochures. The ACEC was established in the 1980 CDCA Plan. Expansion of the ACEC in 1996 created a habitat linkage between the Little San Bernardino Mountains and the San Bernardino Mountains, though several private parcels remain to be acquired.

Black Mountain

The Black Mountain ACEC is one of the largest areas in the western Mojave Desert to protect the prehistoric and Native American values of this area northwest of Barstow. A management plan was approved in 1988. The ACEC lies entirely within the Superior-Cronese and Fremont-Kramer DT ACECs. The southeastern half is within the Black Mountain Wilderness. The ACEC includes critical habitat for the desert tortoise, and known occupied habitat for the Mojave ground squirrel, LeConte's thrasher, desert cymopterus, and Barstow woolly sunflower. Nest sites are present for golden eagle and prairie falcon.

The 2006 WEMO Plan included amending this ACEC plan to include species protection as a goal.

Calico Early Man Site

This National Register Property was established as an ACEC in 1980, and a management plan was prepared in 1984. The plan designated a vehicle route network and specified ways to protect the evidence of ancient human occupation.

The 2006 WEMO Plan modified the ACEC Management Plan to require that all provisions for surveys, minimization, mitigation, and compensation for adverse impacts to biological resources that apply to the Superior-Cronese DT ACEC would also apply to this ACEC.

Christmas Canyon

The Christmas Canyon ACEC protects prehistoric values. Most of the ACEC lies within the Spangler Hills Open Area in San Bernardino County. The 1988 ACEC management plan prescribed ways that the archaeological resources could be protected within an area open to recreational vehicle use.

In the 2006 WEMO Plan, a small portion of the southern edge of this ACEC was included within the Mohave Ground Squirrel Conservation Area. All conservation measures associated with the Conservation Area apply to the ACEC.

Camping is prohibited, and other recreational activities are limited, in sensitive areas near rock art, rock shelters, and middens.

Cronese Basin

The BLM designated the Cronese Lakes, north of Interstate 15 between Barstow and Baker, as an ACEC to protect valuable cultural and natural resources. Ephemeral wetlands are present on the lakes, which serve as stopover points for migratory waterbirds and nesting sites for many species during very wet years. Mesquite hummocks and desert willow washes add to the biological importance, and the dunes and sand sheets are occupied habitat for the Mojave fringe-toed lizard. The desert tortoise is found in low densities. A management plan was published in 1985.

In the 2006 WEMO Plan, the southeastern portion of this ACEC was included within the Superior-Cronese DT ACEC. The 2006 WEMO Plan amended the ACEC Management Plan to incorporate protection of blowsand areas for the Mojave fringe-toed lizard.

Desert Tortoise Research Natural Area

The CDCA Plan of 1980 designated lands north of California City in Kern County as an ACEC and a Research Natural Area. A management plan for the ACEC, prepared under authority of the Sikes Act, was approved in 1988. The ACEC is jointly managed by the BLM, CDFW and the Desert Tortoise Preserve Committee, a non–profit group established to acquire and manage lands for protection of the desert tortoise.

The 2006 WEMO Plan expanded the boundaries of this area to include lands acquired by the Desert Tortoise Preserve Committee. The ACEC was also included within the Mohave Ground Squirrel Conservation Area and the Fremont-Kramer DT ACEC. Stopping and parking of motor vehicles can take place within 50 feet of either side of the centerline of designated routes, while camping is restricted to existing disturbed areas along open routes.

Fossil Falls

The Fossil Falls ACEC was established in 1980 to protect prehistoric values. A management plan was approved in 1986.

The 2006 WEMO Plan amended the management plan for this ACEC by recognizing provisions applicable to the Mohave Ground Squirrel Conservation Area.

Great Falls Basin

The Great Falls Basin ACEC management plan was prepared in 1987 in cooperation with the CDFW under the Sikes Act. The ACEC adjoins the Indian Joe Canyon Ecological Reserve and the northern portion is within the Argus Range Wilderness. The southern portion is within a BLM wilderness study area. The western boundary is contiguous with the China Lake Naval Air Weapons Station. The ACEC protects unique and valuable wildlife and scenic resources, particularly the dozens of seeps and springs that serve as habitat for the threatened Inyo California towhee. Designated critical habitat for the towhee is present within the ACEC. In addition, large populations of quail and chuckar are present, as is a remnant population of bighorn sheep. Raptors nesting within the ACEC include golden eagle, prairie falcon, and long-eared owl. Potential habitat exists for the Panamint alligator lizard.

The 2006 WEMO Plan amended the management plan to prohibit travel on certain routes that were previously designated as open. The area was included within the Mohave Ground Squirrel Conservation Area and the Argus Range Key Raptor Area.

No camping is permitted within 200 yards of springs and riparian areas.

Harper Dry Lake

The ACEC was established to protect the remnant marshes at the southwestern edge of Harper Dry Lake. The marsh and alkali wetland communities bordering Harper Dry Lake hold potential for discovery of several rare and restricted-range plant species. The playa bordering the marshes supported nesting Western snowy plovers in the past, and surveys conducted in 2001 found these birds to be present and probably nesting. Harper Dry Lake is an important area for the conservation of Western snowy plover nesting habitat. Harper Dry Lake is recognized as a Key Raptor Area by the BLM, which has designated 223 such areas nationwide. Key Raptor Areas are places known to be significant habitats for selected species of birds of prey, and Harper Dry Lake is one of seven Key Raptor Areas in the Mojave Desert. The species known to utilize the habitat at Harper Dry Lake are northern harrier, short-eared owl, ferruginous hawk, and long-eared owl. Harper Dry Lake has been improved as a Watchable Wildlife site, a program to provide access and facilities to visitors for birdwatching, photography and passive recreation. Arrangements are now being made to supply surface water to the remnant marsh, and interpretive kiosks, restrooms, and trails have been installed.

The 2006 WEMO Plan adjusted the boundary of this ACEC by adding 110 acres of the Watchable Wildlife Site on the southern boundary and deleting 110 acres of barren lakebed on the northern boundary. The plan also included revised management objectives for conservation of plant and animal species, including the Western snowy plover and several restricted-range alkali wetland species. The area was also recognized as a Key Raptor Area.

Lands within 100 yards of marsh are closed to camping.

Jawbone/Butterbredt

The 1982 Sikes Act Plan for Jawbone/Butterbredt ACEC addressed the Sierra/Mojave/Tehachapi Ecotone Wildlife Habitat Management Area, a designated “special area” in the CDCA Plan. The ACEC plan incorporated all of the Rudnick Common Grazing Allotment and the vehicle management boundary agreement between the BLM and the Rudnick Estate Trust. Motorized vehicle routes of travel were designated within the ACEC, which includes both designated wilderness and the Jawbone Canyon and Dove Springs Open Areas. The Pacific Crest Trail crosses the ACEC as well. The ACEC was established to manage and protect significant cultural and wildlife values of this transition zone between the mountains and the northwestern Mojave Desert. Among the wildlife habitats present are Butterbredt Springs, an important migratory bird stopover site, habitat for the yellow-eared pocket mouse in Kelso Valley, and the raptor and vulture migratory corridor between the Kern River Valley and the Mojave River. Nearly the entire range of a West Mojave endemic, the Kelso Creek monkeyflower, is located within the ACEC.

In 1995 Jawbone Station Visitor Center opened its doors to the public to serve as a public information and outreach center to those coming to the Jawbone/Butterbredt ACEC and the

surroundings public lands. The facility's goal is to educate the public about the agency, its mission, the sensitive resources in the area, and responsible use of the public lands.

The 2006 WEMO Plan added protection of the Bendire's thrasher, Mohave ground squirrel, yellow-eared pocket mouse, and Kelso Creek monkeyflower as specific objectives of the ACEC management plan. Three new conservation areas, including the Mohave Ground Squirrel, Kelso Creek Monkeyflower, and Bendire's Thrasher Conservation Areas, were also established within the ACEC.

Since the approval of the 2006 WEMO Plan, an intensive effort has been underway to implement the designated route system and manage OHV use within the Jawbone/Butterbredt ACEC and surrounding areas. The efforts have included signing and resigning all designated open routes as needed, regular patrols and monitoring in the Jawbone area, installation of additional information kiosks at main entry portals to the management area, building boundary fences around the Dove Springs Open Area and along the northern boundary of the Jawbone Canyon Open Area, and continued focused restoration efforts.

For the last eight years BLM has partnered with a local non-profit, the Friends of Jawbone (FOJ), to assist with management plan implementation efforts in the Jawbone area. The FOJ is able to maintain a staff of between eight and twenty individuals for field work crews, without funding from BLM. These crew members take on many different tasks including regular monitoring patrols, replacement of route signs, trash pickup, and implementation of approved habitat restoration activities, route and trail maintenance, and recreation facility maintenance.

No camping is permitted within 600 feet of water sources.

Juniper Flats

An ACEC was established for the Juniper Flats Cultural Area in 1980, and a management plan was prepared in 1988. The foothill area south of Apple Valley containing springs and riparian habitat in a dense stand of junipers was an important Native American habitation and special use site. Juniper Flats also provides important habitat for the San Diego horned lizard and the gray vireo. The Willow fire in 2000 burned the entire ACEC, leading to a temporary closure of the area until vegetative recovery had begun. Juniper Flats is an important equestrian riding area and provides access to the Deep Creek hot springs in the San Bernardino National Forest.

The 2006 WEMO Plan included construction of a multi-use trailhead to allow parking and staging for equestrian users.

Last Chance Canyon

The CDCA Plan designated Last Chance Canyon in the El Paso Mountains as an ACEC in 1980. A Plan Amendment in 1984 adjusted the boundaries to include additional prehistoric sites. This amendment implemented a recommendation of the ACEC management plan, which was completed in 1982. The archaeological sites are part of a larger archaeological district placed on the National Register of Historic Places in 1971.

The 2006 WEMO Plan adopted an interim route network until a revised motorized vehicle access network could be established for the El Paso Mountains. The ACEC was also included within the Mohave Ground Squirrel Conservation Area.

Manix

The Manix ACEC, located 20 miles northeast of Barstow along the Mojave River, was established in 1990 to protect paleontological and cultural resources. This site contains blowsand habitat for the Mojave fringe-toed lizard.

The 2006 WEMO Plan designated public lands along the Mojave River as a conservation area for the Mojave fringe-toed lizard.

Mojave Fishhook Cactus

A CDCA Plan Amendment established the Mojave Fishhook Cactus ACEC in 1984. The ACEC is composed of two separate parcels in the Brisbane Valley. The purpose of the ACEC is to protect the yellow-spined form of the Mojave fishhook cactus. Subsequent studies have shown that this area may be important to the Mojave monkeyflower as well. A management plan was completed in 1990, which designated motorized vehicle routes within the ACEC.

The 2006 WEMO Plan amended the MUC Class from U to L for 628 acres. The plan also designated Brisbane Valley as a tortoise Special Review Area.

Rainbow Basin

The Rainbow Basin ACEC, established in 1980, lies ten miles north of Barstow and includes two campgrounds, a scenic loop drive, hiking trails, and an interpretive trail. The area is popular with visitors that come to see the colored geological formations. The ACEC protects two nest sites for the prairie falcon. The ACEC management plan, completed in 1991, addressed both the ACEC and a larger surrounding area where route designation was accomplished and recommendations were made for campground and trail improvements and closure to target shooting. Hunting is allowed in the ACEC.

This area is part of the Coolgardie Mesa conservation area and ACEC, the Mohave Ground Squirrel Conservation Area, and the Superior-Cronese DT ACEC. The 2006 WEMO Plan closed routes that served as links to regional routes in order to reduce disturbance to the Lane Mountain milkvetch. Objectives of the management plan were also revised to include protections for the Lane Mountain milkvetch and prairie falcon.

Red Mountain Spring

This area was designated as an ACEC by the CDCA Plan to protect prehistoric values. A 1982 CDCA Plan Amendment listed this area as closed to vehicle travel. A management plan was completed in 1987. This ACEC was included in the route designation inventory and designation process for the Red Mountain subregion.

The 2006 WEMO Plan formally changed the name of this ACEC from Squaw Spring to Red Mountain Spring. The ACEC was included in the Mohave Ground Squirrel Conservation Area and the Fremont-Kramer DT ACEC.

Camping, motorized and non-motorized travel is prohibited.

Rodman Mountains Cultural Area

A 1988 CDCA Plan Amendment established this ACEC to protect cultural resources. Most of the ACEC is within the Rodman Mountains Wilderness. Portions outside the wilderness are part of the Ord-Rodman route designation subregion. The site contains raptor nests and limited desert tortoise habitat.

The 2006 WEMO Plan incorporated most of the ACEC into the Ord-Rodman DT ACEC.

Vehicle camping is restricted to within 100 feet of centerline of designated routes, and competitive speed events prohibited.

Rose Springs

An area surrounding Rose Springs in Inyo County was designated as an ACEC by the CDCA Plan to protect prehistoric values. Access is limited by a gate, which has been vandalized in the past. A management plan was prepared in 1985 that recommended closure of the ACEC to motorized vehicles. Access to the ACEC is available via a transmission line road and the Los Angeles Aqueduct road.

The 2006 WEMO Plan incorporated this area into the Mohave Ground Squirrel Conservation Area.

Sand Canyon

The Sand Canyon ACEC was established to protect riparian habitat and wildlife in a canyon on the eastern slope of the Sierra Nevada Mountains. The ACEC is one of the most diverse areas in the West Mojave for species of small mammals and supports a wide variety of reptiles and birds. Two species nearly endemic to the West Mojave are found within the ACEC: the Ninemile Canyon phacelia and the yellow-eared pocket mouse. Riparian habitat in the ACEC is important to migratory birds, including the willow flycatcher. An ACEC management plan was prepared in 1989.

The 2006 WEMO Plan modified the ACEC management plan to incorporate protections for the yellow-eared pocket mouse.

Short Canyon

The Short Canyon ACEC was established by an amendment to the CDCA Plan in 1988. Most of the ACEC lies within the Owens Peak Wilderness. The purpose of the ACEC is to protect the unusual vegetation and diverse flora. Short Canyon is known to support occurrences of Charlotte's phacelia (*Phacelia nashiana*), a limited-range plant whose distribution falls almost entirely within the western Mojave Desert. In addition, a significant population of the state-listed Mojave tarplant (*Deinandra [Hemizonia] mohavensis*) was detected in the canyon in 1998. A management plan was prepared in 1990. The primary management action was to exclude grazing from the ACEC, which has been implemented through fencing and placement of cattle guards.

The 2006 WEMO Plan modified the ACEC management plan to incorporate protections for the Charlotte's phacelia and Mojave tarplant.

Soggy Dry Lake

BLM established the Soggy Dry Lake ACEC in the 1980 CDCA Plan. The Soggy Dry Lake Creosote Rings Preserve was established to protect ancient vegetation in the Fry Valley, where creosote bushes have developed as clonal rings, attaining an age of up to 11,700 years. A management plan for this ACEC was approved in 1982. The CDFW owns 488 acres adjacent to the ACEC, managed as the King Clone Ecological Reserve.

Steam Well

This ACEC protects historic and prehistoric values within the Golden Valley Wilderness in San Bernardino County.

The 2006 WEMO Plan incorporated this area into the Mohave Ground Squirrel Conservation Area.

Trona Pinnacles

The 1989 management plan for the Trona Pinnacles ACEC focused on protection of the outstanding scenery and geological features of this area, which is located ten miles south of Trona. The site is used for commercial filming and sightseeing. At least one prairie falcon nest site was reported within the ACEC, but falcons have not been recorded there for the past ten years.

Upper Johnson Valley Yucca Rings

The CDCA Plan of 1980 established this ACEC for the unique clonal yucca rings found near the Fry Mountains within the Johnson Valley Open Area. The yucca plants are believed to have grown in a manner similar to the ancient creosote rings near Soggy Dry Lake and represent a stable, old plant community. A management plan was completed in 1982, and a Plan Amendment in 1984 adjusted the boundary along parcel lines. The ACEC Management Plan was developed to provide for continued use to meet the recreational needs of the Johnson Valley Open Area while protecting the sensitive resources. This area is within an OHV Open Area, and is completely fenced, so it would not be affected by designation of the route network.

Western Rand Mountains

The Western Rand Mountains ACEC (RMMA) formerly supported high densities of desert tortoises, though tortoise numbers have declined substantially from historical levels. The ACEC is believed to support the Mohave ground squirrel, and is known to harbor burrowing owls and LeConte's thrasher. A Rand Mountains Fremont Valley Management Plan was completed in 1993, and adopted in 1994. This plan, which also addressed surrounding lands such as Koehn Lake and lands to the northeast, was prepared in cooperation with the CDFW under authority of the Sikes Act. The plan received a "no jeopardy" Biological Opinion from the USFWS. The plan recommended several amendments to the BLM's CDCA Plan:

- Expand the Western Rand Mountains ACEC by 13,120 acres
- Change Class M lands in the ACEC expansion and adjacent alluvial fan areas to Class L.

- Withdraw 32,590 acres within the RMMA from mineral location and entry. The 6,090-acre Koehn Lake and an additional 8,320 acres within the management area will remain as class M and open to mineral entry.
- Change the RMMA OHV network from an "existing routes" system to a designated trail system that was mapped and marked in the field. The network of available routes of travel adopted in the plan reduced the network from the existing network of 764 miles down to 129 miles of designated Open routes..
- Categorize portions of the RMMA as Desert Tortoise Category I habitat. These lands lie on both sides of the Randsburg-Mojave Road southwest of Red Mountain and are shown on Illustration #9 in the 1993 management plan.

Implementation of the Rand Mountains Fremont Valley Management Plan related to the management of off-highway vehicle use within the area has included:

- Mapping, marking, and maintaining of the designated trail network with brown numbered post to identify the trail system.
- Installing a 17-mile long fence on the southern boundary of the RMMA with portals allowing entry only on the designated trail system.
- Installing fences along both side of designated routes R5 and R50 within the ACEC to prevent off route travel by motorized vehicle.
- Installing fencing along the northern boundary of ACEC to control access into the area. Through the connection of the boundary fence lines and the R5 and R50 fence lines about 5,700 acres of desert tortoise habitat have been encircled and protected from uncontrolled vehicle trespass.
- Installing 12 information kiosks around the management area with maps, rules, and information brochures for the public.
- Performing active desert restoration on 50 miles of closed trails at roughly 700 sites, covering 32 acres of desert tortoise habitat restoration. Active restoration efforts have included ripping, barricading, vertical mulching, and replanting areas with desert vegetation.
- Performing outreach efforts on major holiday weekends during the use season to inform visitors of the vehicle-use regulations within the management area.
- Conducting patrols of the area by both Law Enforcement staff and Resource staff to make public contacts about the management area. The Rand Mountains Fremont Valley Management Plan proposed a goal of ranger patrols eight hours per week plus eight hours each weekend from March 1 to June 30, September 1 to November 1, and holiday weekends. Ranger staffing levels were not adequate to consistently to so until 2002. In 2002, a ranger was specifically assigned primary patrol responsibilities for the Rand Mountains, Fremont Valley, and the Desert Tortoise Natural Area in order to facilitate implementation of other plan goals.

The 2006 WEMO Plan adopted the recommendations of the management plan, including adjustment of the boundary; amending the MUC Class from M to L for 34,835 acres; adopting the route network; designating Category 1 tortoise habitat as DWMA; implementing mineral

withdrawal; and implementing an OHV-use permit program. The adoption of the route network was vacated by the Court in its Remedy Order of 2011, but the other actions were kept in place.

Since the adoption of the 2006 WEMO Plan, the first phase of a permit system has begun. The permit is required for all persons desiring to operate a motor vehicle within RMMA, as specified in the 2006 WEMO Plan.

Stopping and parking of motor vehicles can take place within 50 feet of either side of the centerline of designated routes, while camping is restricted to existing disturbed areas along open routes.

Whitewater Canyon

BLM established the Whitewater Canyon ACEC in the 1980 CDCA Plan. The Whitewater Canyon ACEC straddles the WEMO Planning area boundary, with the upper elevations lying within the planning area. All of the ACEC within the WEMO Planning area lies within the San Gorgonio Wilderness. Wildlife protection is a goal of the ACEC Plan, and the ACEC protects a substantial herd of bighorn sheep and harbors golden eagle and prairie falcon nests. Significant riparian areas are found in lower Whitewater Canyon, and these are known to support several species of riparian birds as well as the arroyo toad. Potential habitat exists for the triple-ribbed milkvetch within upper Whitewater Canyon. The Pacific Crest Trail and the California Riding and Hiking Trail cross the ACEC.

3.11.3.2 New ACECs Designated in the 2006 WEMO Plan

The 2006 WEMO Plan established 10 new ACECs within the planning area, as discussed below.

Bendire's Thrasher Conservation Area

The conservation strategy for Bendire's thrasher is based on conservation of habitat on public lands where thrashers were seen in 2001 or were abundant in the mid-1980s and conditions appear unchanged. Four public land conservation areas were established. These are within Joshua Tree National Park (106,710 acres), the Jawbone/Butterbredt ACEC (7,678 acres), northern Lucerne Valley (9,805 acres), and Coolgardie Mesa (7,646 acres).

Carbonate Endemic Plants Research Natural Area

BLM designated public lands within an area east of Highway 18 in the foothills of the San Bernardino Mountains as a Research Natural Area and manages the land as an ACEC to protect four federally listed and one unlisted species of plants, as well as the San Diego horned lizard, gray vireo, and bighorn sheep.

No camping is permitted in critical habitat.

Coolgardie Mesa

The Coolgardie Mesa ACEC lies within the Superior-Cronese DT ACEC and contains conservation areas for the desert tortoise, Mohave ground squirrel, Bendire's thrasher, and Lane

Mountain milkvetch. The ACEC serves as a multispecies reserve for these four species as well as the Barstow Woolly sunflower.

Kelso Creek Monkeyflower Conservation Area

The Kelso Creek Monkeyflower Conservation Area was established by the 2006 WEMO Plan. The plan included conservation prescriptions such as maintaining regional rangeland health standards, requiring botanical surveys for proposed projects, and monitoring of habitat. In the 2016 DRECP LUPA, the Kelso Creek Monkeyflower ACEC was eliminated as a separate ACEC, and was incorporated into the Jawbone/Butterbredt ACEC.

Middle Knob

The BLM designated the Middle Knob area as a new ACEC in the 2006 WEMO Plan. Management of this area includes requirements for avoidance of all listed species of plants and animals, designation of vehicle routes of travel to ensure compatibility with the purposes of the ACEC and with the Pacific Crest Trail, and prohibition of new wind energy development on public lands. Surveys for flax-like monardella in suitable habitat would be required for any ground-disturbing projects in the Middle Knob ACEC.

Mojave Monkeyflower

Conservation of Mojave monkeyflower is based on establishment of two reserve areas that include the majority of the known populations. These reserves, including southern Brisbane Valley and an area near Daggett Ridge, were designated as an ACEC in the 2006 WEMO Plan. The plan amended the MUC Class from U to L for 10,448 acres, and amended the MUC Class from M to L for 25,351 acres. Part of the ACEC lies within the Ord-Rodman DT ACEC. In the 2016 DRECP LUPA, this ACEC was split into two stand-alone ACECs, the Daggett Ridge ACEC and the Brisbane Valley ACEC.

Mojave Fringe-Toed Lizard Conservation Area

Two separate areas were designated as conservation areas for the Mojave fringe-toed lizard and are managed as an ACEC. The ACEC is found along the Mojave River east of Barstow and in and adjacent to the Sheephole Wilderness east of Twentynine Palms. Three other ACECs (Pisgah, Manix, and Cronese Lakes) serve to protect the Mojave fringe-toed lizard as well.

Parish's Phacelia Conservation Area

BLM established a new ACEC for conservation of Parish's phacelia northeast of Barstow along the Manix Trail. The plan designated 898 acres as a conservation area for this species of which 386 acres (43%) are located on private land and 512 acres (57%) are located on BLM land.

Camping is not an allowable use in this area.

Pisgah Crater

BLM designated a portion of the Pisgah Crater and surrounding area as an ACEC in the 2006 WEMO Plan. This crater and lava flow, an uncommon landform in the western Mojave Desert,

was previously designated as a Research Natural Area. The Pisgah Crater contains lava tubes of several types, some of which are used as bat roosts. The mix of dark lava and white sand has resulted in interesting color adaptations in the reptiles and small mammal fauna, called cryptic coloration or background color matching. These white and dark forms occurring together represent a location of high genetic biodiversity within species. The ACEC includes areas where populations of crucifixion thorn, white-margined beardtongue, sand linanthus, and Mojave fringe-toed lizard occur. Desert tortoise also occurs in the area.

West Paradise

The West Paradise ACEC lies within the Superior-Cronese DT ACEC and contains conservation areas for the desert tortoise, Mohave ground squirrel, and Lane Mountain milkvetch. The ACEC serves as a multispecies reserve for these three species.

3.11.3.3 DWMAs Designated in the 2006 WEMO Plan

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. The boundaries of these DT ACECs correspond to the general boundaries identified by the Desert Tortoise (Mojave Population) Recovery Plan (Recovery Plan): the Fremont-Kramer (803 square miles) and Superior-Cronese (1,003 square miles) DT ACECs, which are adjacent; the Ord-Rodman DT ACECs (392 square miles); and the Pinto DT ACECs (183 square miles). Tortoise DT ACECs are managed for tortoise conservation and recovery until which time the tortoise may be delisted as per criteria given in the Recovery Plan.

Public lands administered by the BLM within DT ACECs are designated as ACECs. The 2006 WEMO Plan serves as the ACEC management plan for the four Tortoise DT ACECs. Existing ACECs that lie within the boundary of the Tortoise DT ACECs ("included ACECs") are still maintained for the purpose of their original designation, unless specifically deleted by the 2006 WEMO Plan. Management provisions for resource protection in the Tortoise DT ACECs augment, rather than replace, the pre-existing ACEC provisions.

The 2006 WEMO Plan also established the Mohave Ground Squirrel (MGS) Conservation Area comprising 1,726,712 acres for the long-term survival and protection of the MGS. The MGS Conservation Area includes portions of the Fremont-Kramer and Superior-Cronese Tortoise DT ACECs, and additional, essential habitats located west and north of the two tortoise DT ACECs.

3.11.4 New ACECs Designated in the 2016 DRECP LUPA

The 2016 DRECP LUPA made changes to some existing ACECs, and also established 17 new ACECs within the planning area, as discussed below.

Under the DRECP LUPA, the Kelso Creek Monkeyflower ACEC was eliminated as a separate ACEC, and was incorporated into the Jawbone/Butterbredt ACEC. In addition, the Mojave Monkeyflower ACEC was split into two stand-alone ACECs, the Daggett Ridge ACEC and the Brisbane Valley ACEC. The new ACECs are described below.

Ayre's Rock

The Ayre's Rock ACEC encompasses 1,530 acres near Coso Junction. Ayer's Rock was formally listed on the National Register of Historic Places in 2003. The Ayer's Rock ACEC encompasses a complex of prehistoric archaeological resources, the most prominent of which is a monolithic boulder renowned for panels of Native American rock art, specifically painted polychrome pictographs. The area also includes Mohave ground squirrel (MGS) core habitat within the MGS Conservation Area.

Camping and recreational off highway vehicle use are prohibited within the National Register District.

Big Rock Creek Wash

The Big Rock Creek Wash ACEC encompasses 310 acres near the town of Pear Blossom in Los Angeles County. The BLM parcel of the ACEC is part of a proposed Significant Ecological Area (Big Rock Creek SEA) designated by Los Angeles County. Short-joint beavertail cactus is a USFWS Species of Concern that occurs here. In addition, remote sensing shows that the Big Rock Wash ecosystem is unique in the region. The red color exhibited in Landsat aerial photos indicates unique soil and vegetation characteristics. The vegetation consists of a diversity of plant species that are unusually dense and robust. This type of habitat supports a variety of wildlife species including the special status San Diego horned lizard.

Bristol

The Bristol ACEC encompasses 214,910 acres south of Interstate 40 and between the Mojave National Preserve and the Twentynine Palms Marine Base. The unit links the Cady Mountain Wilderness Study Area and the Bristol Mountains, Kelso Dunes, Trilobite, and Clipper Mountains wilderness areas with Mojave National Preserve. The ACEC also connects with the Pisgah ACEC on the west and the Chemehuevi ACEC on the east. This creates a contiguous conservation area which encompasses a transition zone between both Mojave and Sonoran/Colorado Desert ecosystems. The unit includes prehistoric trails and evidence of trading, habitation, and migration of various Native American groups. There are numerous remnants of early 20th century mining and transportation efforts including the ghost towns of Stedman, Ragtown, Ludlow, and the Tonopah and Tidewater Railroad grade.

The transportation-related management prescriptions for the unit allow stopping and parking within 25 feet, and camping within 100 feet, of centerline of designated routes.

Cady Mountains WSA

The Cady Mountain WSA ACEC encompasses 101,380 acres between Interstate 15 and Interstate 40, approximately 20 miles southwest of Baker. The unit provides regional habitat connection for bighorn sheep, and overlaps a portion of the Old Spanish Trail.

Eagles Flyway

The Eagles Flyway ACEC encompasses 10,980 acres south of CA State Highway 178, east of CA State Highway 14, and west of the El Paso Mountain Wilderness. This area connects

Robber's Roost Birds of Prey Nesting Area to the El Paso Wilderness. It is an important area for maintaining connectivity for raptors and other wildlife between the Sierras and the El Paso Mountains. Golden eagles, which are protected under the Bald and Golden Eagle Protection Act, have frequently been seen flying from the Sierras across this area to the El Pasos. This area provides prime upland foraging for these birds of prey. The area also includes Mohave ground squirrel (MGS) core habitat within the MGS Conservation Area.

El Paso to Golden Valley Wildlife Corridor

The El Paso to Golden Valley Wildlife Corridor ACEC encompasses 57,920 acres south and east of the El Paso Mountains Wilderness. This area is of local importance to the residents of the town of Ridgecrest as is evident from the request by them to separate it in the El Paso Collaborative Access Plan (CAPA). The area is avidly used for rock hounding and other various recreation types. A variety of songbirds use the area, both during migration and as nesting habitat. Resident songbird species include loggerhead shrikes and Le Conte's thrashers. There are at least four special status bat species, including the sensitive Townsend's big-eared bat, that call this area home.

Granite Mountain Corridor

The Granite Mountain Corridor ACEC encompasses 39,290 acres between Lucerne Valley and Apple Valley. The area is critical for bighorn sheep, golden eagles, desert tortoise, prairie falcons and several other species. Additionally, numerous rare and sensitive plants have major populations here, and Joshua tree woodland is present, making the area regionally significant. The area provides critical links for wildlife populations to the north and south of this linkage area.

Mesquite Hills/Crucero

The Mesquite Hills/Crucero ACEC encompasses 5,040 acres southwest of Baker. The area includes extensive mesquite groves that among the few mesquite bosques remaining in the California deserts. The area is critical for fringed toed lizard, desert tortoise, burrowing owl, and several bat species. Nomadic tribes of the past to recent Native Americans have occurred within the Mesquite Hills/Crucero Hills for over 4,000 years. Evidence of Native American visitation within the Mesquite Hills/Crucero Hills spans over 4,000 years and are scattered throughout the area.

The transportation-related management prescriptions for the unit allow stopping and parking within 25 feet, and camping within 100 feet, of the centerline of designated routes.

Mojave Ground Squirrel

The Mojave Ground Squirrel ACEC encompasses 198,500 acres south of CA State Highway 190, and east of the Tehachapi, Scodie, and Sierra Nevada Mountain Ranges. This area contains the habitat for the state threatened Mohave ground squirrel (*Spermophilus mohavensis*), and was established to protect the long-term survival of this species. This area includes greater connectivity between the large, mostly undeveloped and protected Mohave Ground Squirrel

(MGS) habitat found within the three Military Ranges to the north, east (China Lake NAWS) and south (Edwards).

Northern Lucerne Valley Linkage

The Northern Lucerne Valley Linkage ACEC encompasses 21,900 acres approximately 16 miles south-southwest of Barstow. The area is critical for bighorn sheep, golden eagles, desert tortoise, prairie falcons and several other species. Additionally, numerous rare and sensitive plants have major populations here, and Joshua tree woodland is present, making the area regionally significant. The area provides critical links for wildlife populations to the north and south of this linkage area.

Olancha Greasewood

The Olancha Greasewood ACEC encompasses 26,620 acres south of CA State Highway 190 and east of CA State Highway 395. This area of sand dunes has a UPA described in the CDCA Plan as a Great Basin Enclave with greasewood (*Sarcobatus vermiculatus*) as the dominant plant.

Old Woman Springs Wildlife Linkage

The Old Woman Springs Wildlife Linkage ACEC encompasses 55,980 acres south and west of Highway 247, between Lucerne Valley, Yucca Valley, and Pioneertown. The area is critical for bighorn sheep, Mojave fringed toed lizards, desert tortoise, burrowing owl, and several other species. Additionally, numerous rare and sensitive plants have major populations here; Joshua tree woodland is also present, making the area regionally significant.

Panamints and Argus

The Panamints and Argus ACEC encompasses 34,005 acres between the Argus Wilderness and Death Valley National Park. This area encompasses an essential movement corridor which links wildlife habitats in the China Lake Naval Air Weapons Station and Argus Wilderness to those protected by the Death Valley National Park. Desert Bighorn sheep and Mojave ground squirrels are two of those focal species that occur here. In addition, the area provides excellent habitat for foraging and nesting of numerous raptor species, including golden eagles and prairie falcons. There are numerous prehistoric and historic sites in the area. Panamint Lake was an important location in prehistory when water and riparian resources were abundant, allowing prehistoric Native Americans a refuge from the harsh environment around them. The Lake has many National Register eligible properties and has ethnographic significance to several Paiute and Shoshone Tribal groups today.

No camping is permitted within 200 meters of desert wildlife watering holes.

Pipes Canyon

The Pipes Canyon ACEC encompasses 8,720 acres north of Yucca Valley. The ACEC area has numerous prehistoric resources that meet criteria for inclusion in the National Register of Historic Places (NRHP) as contributing elements of an Eligible District. This area has the greatest concentration of known NRHP eligible sites within the Barstow Field Office. Sites

include petroglyphs, pictographs, rock shelters, village sites, and milling sites. This area is of particular cultural interest to local Native American Tribes.

Santos Manuel

The Santos Manuel ACEC encompasses 27,550 acres approximately 10 miles east of Twentynine Palms. The area provides high density Desert tortoise habitat and serves as a critical tortoise habitat linkage. The area is the location of the recent discovery of an important archaeological site. The site is similar to the Topok Maze site near Needles, California, and is an example of an extremely rare site type. This site meets criteria for eligibility for the National Register of Historic Places. Native Americans have determined this area of high significance to maintain the cultural landscape.

Soda Mountains Expansion

The Soda Mountains Expansion ACEC encompasses 16,720 acres between Interstate 15 and the southern border of the Soda Mountain Wilderness Study Area. This area provides important plant and wildlife connectivity between surrounding Wilderness and Wilderness Study Areas which encompass large blocks of intact habitat. There is one known site within the Soda Mountain Expansion that meets criteria for inclusion to the National Register of Historic Places. The site is a geoglyph which is of sacred value to Tribes.

Soda Mountains WSA

The Soda Mountains WSA ACEC encompasses 88,780 acres approximately three miles west of Baker. The unit includes prehistoric and historic cultural resources associated with various indigenous and early European occupation periods. The Soda Mountains also provide important connectivity between large habitat blocks.

3.11.5 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 Code1271-1287, *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 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. The segment identified as

eligible on public lands contains Outstandingly Remarkable Scenic Values (ORVs), i.e., Class "A" scenic quality, per BLM Manual guidelines. 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 migrant 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. 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.

3.11.6 California Desert National Conservation Lands

The DRECP LUPA process was used to identify the public lands within the CDCA to be managed for conservation and identified as components of the National Landscape Conservation System (NLCS) pursuant to the 2009 Omnibus Public Lands Management Act. NLCS lands are nationally significant landscapes with outstanding cultural, ecological, and scientific values, and for which the DRECP LUPA established CMAs to conserve, protect, and restore these landscapes. 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%

Table 3.11-4. Acreage of CDNCLs Within WEMO Planning Area

Ecoregion Subarea	Approximate Acreage	Disturbance Cap	Disturbed Acres (Preliminary)[1]	Percent Disturbed (Preliminary)
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

3.11.7 National Monuments

In February, 2016, the President 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 Section 2.4.1, these monuments overlapped the boundaries of subregions which were used as an evaluation tool in the 2015 Draft WMRNP SEIS. As a result, the subregion boundaries have been re-defined for this Draft SEIS, 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 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. The following special designations are within the Mojave Trails National Monument and also within the WEMO Planning Area:

- Wilderness Areas
  - Sheephole Valley
- Wilderness Study Areas
  - Cady Mountains
- CDNCLs
  - Mojave and Silurian Valley
  - South Mojave – Amboy
- ACECs
  - Afton Canyon
  - Amboy Crater

- Cady Mountains
- Mesquite Hills-Crucero
- Mojave Fringe--toed Lizard
- Pisgah Crater
- Santos Manuel

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 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. The following special designations are within the Sand to Snow National Monument and also within the WEMO Planning Area:

- Wilderness Areas
  - San Gorgonio
- CDNCLs
  - Pinto Lucerne Valley and Eastern Slopes
- ACECs
  - Big Morongo Canyon
  - Old Woman Springs Wildlife Linkage
  - Pipes Canyon
  - Whitewater Canyon

3.11.8 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

3.12 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 Open Areas, as well as on the arterial access roads to OHV Areas before and after the events.

3.12.1 General Information on Noise

Noise is defined as unwanted sound. The Environmental Protection Agency (EPA, 40CFR205.166) has set noise emissions standards for many types of sources, under the Noise Control Act (1972). Noise can be described in terms of three variables: amplitude (loud or soft), frequency (pitch), and time pattern (variability), and its potential effects can be described in terms of a noise generating source, a propagation path, and a receiver (FTA 2006). The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually composed of sound emanating from natural sources such as birds and wind blowing through leaves, and from human activities, including traffic on roads and highways. Ambient sound levels vary with time of day, wind speed and direction, and level of human activity. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location. Ambient noise levels will generally vary across a region. Because traffic on roads constitutes a substantial part of ambient noise levels, the ambient noise levels will generally be higher in close proximity to major transportation arteries such as urban centers and Interstate highways, and lower in undeveloped and remote areas.

Noise is defined as unwanted sound that exceeds the ambient level. Noise can be described in terms of three variables: amplitude (loud or soft), frequency (pitch), and time pattern (variability), and its potential effects can be described in terms of a noise generating source, a propagation path, and a receptor (FTA 2006). Excessive noise exposure has been shown to cause interference with human activities at home, work, or recreation; community annoyance, hearing loss, and affect people's health and well-being. Even though hearing loss is the most clearly measurable health hazard, noise is also linked to other psychological, sociological, physiological, and economical effects, either temporary or permanent (EPA 1974).

Potential human annoyance and health effects associated with noise may vary depending on factors such as: (1) the difference between the new noise and the existing ambient noise levels; (2) the presence of tonal noise, noticeable or discrete continuous sounds, such as hums, hisses, screeches, or drones; (3) low frequency noise (frequency range of 8 to 1,000 Hertz [Hz]); (4)

intermittent or periodic sounds, such as a single vehicle passing by, backup alarms, or machinery that operates in cycles; and (5) impulsive sounds from impacts or explosions (Brüel and Kjaer 2000). In some cases, noise can also disrupt the normal behavior of wildlife. Although the severity of the effects varies depending on the species being studied and other conditions, research has found that wildlife can suffer adverse physiological and behavioral changes from intrusive sounds and other human disturbances (NPS 2012).

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.

3.12.2 Noise Measurement

To describe environmental noise and to assess impacts on areas sensitive to community noise, a frequency weighting measure that simulates human perception is customarily used. The frequency weighting scale known as A-weighting best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. In general, a difference of more than 3 dBA is a perceptible change in environmental noise, while a 5 dBA difference typically causes a change in community reaction. An increase of 10 dBA is perceived by people as a doubling of loudness, and almost certainly causes an adverse community response. Noise containing discrete tones (tonal noise) is much more noticeable and more annoying at the same relative loudness level than other types of noise, because it stands out against background noise (BLM 2005).

Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. Therefore, the cumulative noise level from two or more sources will combine logarithmically, rather than linearly (i.e., simple addition). For example, if two identical noise sources produce a noise level of 50 dBA each, the combined noise level would be 53 dBA, not 100 dBA.

The predominant rating scales for noise impacts to human communities in the State of California are the equivalent continuous sound level (Leq) and Community Noise Equivalent (CNEL) based on A-weighted decibels (dBA). Leq is the total sound energy of time-varying noise over a sample period. CNEL is the time-varying noise over a 24-hour period, with a weighting factor of 5 dBA applied to the hourly Leq for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and with a weighting factor of 10 dBA from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). The noise adjustments are added to the ambient noise levels occurring during the more sensitive hours. Day-night average noise (Ldn) is similar to the CNEL but without the adjustment for nighttime noise events. CNEL and Ldn are normally exchangeable and within 1 dB of each other. Other noise-rating scales used to assess an annoyance factor include the maximum instantaneous noise level, or Lmax, and percentile noise exceedance levels, or LN.

Lmax is the highest exponential time-averaged sound level that occurs during a stated time period. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise. LN is the noise level that is exceeded "N" percent of the time during a specified time period. For example, the L10 noise level represents the noise level exceeded 10 percent of the time during a stated period. The L90 noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level.

Community noise levels are closely related to the intensity of human activity and land use. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas (e.g., downtown Los Angeles), and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

The surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Most of the surrounding land use within close proximity to transportation routes in the WEMO Planning area is rural.

3.12.3 Typical Sound Levels

People experience a wide range of sounds in the environment. Table 3.12-1 shows the relative A-weighted noise levels of common sounds measured in the environment and industry for various sound levels, including transportation sources. Excessive noise cannot only be undesirable but may also cause physical and/or psychological damage. The amount of annoyance or damage caused by noise is dependent primarily upon the amount and nature of the noise, the amount of ambient noise present before the intruding noise, and the activity of the person working or living in the area. Environmental and community noise levels rarely are of sufficient intensity to cause irreversible hearing damage, but disruptive environmental noise can interfere with speech and other communication and be a major source of annoyance by disturbing sleep, rest, and relaxation.

Table 3.12-1. Typical Sound Levels Measured in the Environment and Industry

Noise source at a given distance[1]	A-Weighted Sound Level (dBA)	Noise Environments	Qualitative Description
Carrier deck jet operation	140	Carrier flight deck	Painfully loud
Civil defense siren (100 feet)	130		
Jet takeoff (200 feet)	120		Threshold of pain
Military jets (200-500 ft) flying through the sound barrier	110-120	Rural open space	
Loud rock music	110	Rock music concert	
Diesel Train (50 ft)	105	Rural open space	Very loud / very annoying
Pile driver (50 feet)	100		
Ambulance siren (100 feet)	90	Boiler room	

Table 3.12-1. Typical Sound Levels Measured in the Environment and Industry

Noise source at a given distance[1]	A-Weighted Sound Level (dBA)	Noise Environments	Qualitative Description
Dirt Bike[2]	86-96	Dirt Bike	Annoying
Motorcycle (50 feet)[3]	80	California State Standard for post-1985 motorcycles	
Pneumatic drill (50 feet)	80	Noisy restaurant	
Motorcycle (25 feet)	80	Rural open space	
Freeway traffic (50 feet)	70		Intrusive / Moderately loud
Air conditioning unit (20 feet)	60	Data processing center	
Typical Conversation	60	Average Living Room	
Single auto	60	Rural open space	
Light auto traffic (100 feet); rainfall	50	Private business office	
Bird calls	40	Average living room library	Quiet
Soft whisper (5 feet); rustling leaves	30	Quiet bedroom	Very Quiet
Broadcasting/Recording studio	20		
Normal breathing	10		Threshold of hearing

(1) Source is California Energy Commission 2008, except where otherwise noted.

(2) Source is Dirt Bike Rider 2009

(3) Source is California Code 27202; Realistic Bomber Training Initiative Final EIS, Appendix G. 2000. Dept of Defense, USAF Air Combat Command.

Sound is generally propagated by spherical spreading according to the "inverse square law". For noise, the sound energy decreases with the square of the distance. As such, the sound pressure level would be reduced by 6 dB per doubling of distance from a ground-level stationary or point source. For a noise source which is relatively long, such as a constant stream of highway traffic (line source), the sound pressure spreads at a rate of 3 dB per doubling of distance. The drop-off rate also varies with both terrain conditions and the presence of obstructions in the sound propagation path. At very large distances, beyond several hundred feet (ft), wind and temperature gradients influence sound propagation. Changes in noise levels due to wind are generally short-term without persistent directional winds, where some hours may be a decibel or two louder than others within the margin of precision of such an assessment.

Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation that are subject to nighttime noise are often considered objectionable because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (EPA 1974).

3.12.4 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 (SCAG 2003). 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). 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.

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.

The most regular, 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 major issue on public lands is the illegal modification of motorcycle exhaust and muffler systems that can substantially increase noise levels above legal standards. There is currently no legally acceptable way for a law enforcement officer to measure noise emission upon stopping a vehicle. Testing must be conducted through a complex and expensive controlled-setting

procedure, as identified in EPA regulations (40 CFR205, App. I, Subpart D). Testing procedures are currently under reconsideration to address this issue.[1]

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.

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.

Sensitive 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

[1] *Noisy Motorcycles, a Quality of Life Issue, August 25, 2013. Institute of Noise Control Engineers and Noise Control Foundation Roundtable Report.*

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 motorized routes to sensitive receptors and residences. Sensitive receptors were defined as schools and health facilities. The number of sensitive receptors within the WEMO Planning area is presented in Table 3.12-2.

Table 3.12-2. 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 motorized 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 is 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 motorized vehicles 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.

3.12.5 Noise Regulations and Standards

Ambient noise standards are maintained at the Federal, state, and local levels. In 1974, the EPA published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" (EPA 550/9-74-004). This document provides information for state and local agencies to use in developing their ambient noise standards to assist state and local government entities in development of state and local ordinances, regulations, and standards for noise (Department of State 2007).

Federal

Noise and land use guidelines have been produced by a number of federal agencies including the Federal Highway Administration, the EPA, the Department of Housing and Urban Development, and the American National Standards Institute. These guidelines are all based upon statistical noise criteria such as Leq, Ldn or CNEL.

The EPA "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" identified outdoor and indoor noise levels to protect public health and assets (Table 3.12-3). A Leq (24) of 70 dB was identified as the level of environmental noise that would prevent any measurable hearing loss over a lifetime. An Ldn of 55 dBA outdoors and 45 dBA indoors were identified as noise thresholds that would prevent activity interference or annoyance (Department of State 2007).

Table 3.12-3. EPA Noise Control Guidelines

Use	Measure	Indoor activity interference (dBA)	Hearing loss consideration (dBA)[b]	To protect against both effects (dBA)[c]	Outdoor activity interference (dBA)	Hearing Loss consideration (dBA)[b]	To protect against both effects (dBA)[c]
Residential with Outside Space	Ldn Leq(24)	45	70	45	55	70	55
Residential with No Outside Space	Ldn Leq(24)	45	70	45			
Commercial	Leq(24)	[a]	70	70[d]	[a]	70	70[d]
Inside Transportation	Leq(24)	[a]	70	[a]			
Industrial	Leq(24)	[a]	70	70[d]	[a]	70	70[d]
Hospitals	Ldn Leq(24)	45	70	45	55	70	55
Educational	Ldn Leq(24)	45	70	45	55	70	55
Recreational Area	Leq(24)	[a]	70	70[d]	[a]	70	70[d]
Farm Land and General Unpopulated Land	Leq(24)				[a]	70	70[d]

Source: City of Rialto 1992

Notes:

[a] Since different types of activities appear to be associated with different levels, identification of a maximum level for activity interference may be difficult except in those circumstances where speech communication is a critical activity.

[b] Level of hearing loss is defined as the exposure period which results in hearing loss at the identified level is a period of 40 years.

[c] Based on lowest level

[d] Based on hearing loss

A Leq of 75 dBA during 8 hours may be identified in these situations so long as the exposure over the remaining 16 hours per day is low enough to result in a negligible contribution to the 24-hour average.

EPA has regulations that are specific to motor vehicle and motorcycle noise emissions. These regulations apply to motorcycles manufactured after 1982, except for motorcycles designed for closed-course competition only. Under 40 CFR Part 205, both street and off-road motorcycles manufactured after 1986 meet a noise standard of 80 dB, and must be labeled to indicate compliance with the standard.

State

California Government Code section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise

elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

The California Department of Health Services has established the Office of Noise Control, which has prepared studies associated with noise levels and their effects on various land uses. Based upon these studies, the State has established interior and exterior noise standards by land use category and standards for the compatibility of various land uses and noise levels (Table 3.12.-4). In addition, noise limits for highway vehicles are regulated under the California Vehicle Code, §§23130 and 23130.5. The limits are enforceable on the highways by the California Highway Patrol and the County Sheriff's Office.

Motorcycles registered in the state that are manufactured on or after 2013 or have an aftermarket exhaust system manufactured on or after 2013 must have the federal EPA noise emission label affixed to it in order to be operated, used, or parked in the state.

Table 3.12-4. Noise/Land Use Compatibility Matrix for Community Noise Environments

Land Use Category	Community Noise Exposure Level (CNEL, dBA)						
	50	55	60	65	70	75	80
Residential – Low density single-family, duplex, and mobile homes							
Residential – Multi-family							
Transient Lodging – Hotels, motels							
Schools, Libraries, Churches, Hospitals, Nursing homes							
Auditoriums, Concert halls, Amphitheaters							
Sport arenas, Outdoor spectator sports, amusement parks							
Playgrounds, neighborhood parks							
Golf courses, riding stables, Cemeteries							
Office and Professional Buildings, Retail Commercial, Banks, Restaurants							

Table 3.12-4. Noise/Land Use Compatibility Matrix for Community Noise Environments

Land Use Category	Community Noise Exposure Level (CNEL, dBA)						
Industrial, Manufacturing, Utilities, Service Stations, Warehousing, Agriculture							

Source: State of California Office of Noise Control, Department of Health Services 1976

Normally acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally acceptable: New construction or development should be undertaken only after a detailed analysis of the noise requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air systems or air conditioning, normally suffices.

Normally unacceptable: New construction or development should generally be discouraged. If it does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly unacceptable: New construction or development should generally not be undertaken.

3.13 Travel and Transportation Management Network

Two of the BLM's greatest management challenges are providing reasonable and varied routes for access to public lands and providing areas for a variety of motorized and non-motorized recreation. The various landscapes, user interests, equipment options, weather conditions, transportation infrastructure, and resource constraints all must be considered. Travel and transportation are an integral part of virtually every activity that occurs on public lands, including recreation, livestock and wildlife management, commodity resources management, ROWs to private inholdings, and public land management and monitoring. Comprehensive Travel and Transportation Management (TTM) is the planning, management, and administration of motorized and non-motorized roads, primitive roads, and trails to ensure that public access, natural resources, and regulatory needs are considered.

Comprehensive travel management planning should address all resource use aspects, such as recreational, traditional, casual, agricultural, commercial, and educational, and accompanying modes and conditions of travel on public lands, not just motorized or off-highway vehicle (OHV) activities.

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). 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 though 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 Asset Classifications

3.13.2.1 Assets Included as Part of Transportation Network

The BLM's Transportation System is a dynamic system that routinely expands and contracts with the authorization, addition and closure of routes. According to BLM policy (H8342-1), the

Transportation System itself consists of those linear travel features classified as Roads, Primitive Roads and Trails – and subsequently recorded in the BLM's Facility Asset Management System (FAMS).

The asset classification for each route is assigned by reviewing individual segments of the route that are included in a geographic information system (GIS) format, based on information collected and analyzed for the route designation process. The current asset classification for most BLM motorized routes in the WEMO planning area is primitive road: primary; this is the default classification in the absence of additional information.

Information on routes is maintained in the inventory of linear features, including their location and length, in conjunction with the accompanying route designations. Routes that have specific limitations may include a specific frequency or schedule for monitoring. Additional inventory information may also be available, for instance, on the difficulty or suitability of the route for various types of vehicles or activities. Asset classifications include the following:

Road: A road is a linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Roads are typically improved travel features (e.g., surfaced), or intensively/routinely maintained routes. The classification of a feature as a road implies that routine and regular maintenance of that feature could, and is expected to, occur – and any NEPA compliance document authorizing or designating the feature has considered and disclosed this level of maintenance. Often these routes are specifically authorized through a ROW or similar instrument, and the maintenance of the route is the responsibility of a third party. As a rule of thumb, these routes should be designed and engineered to meet certain standards, though this is not always the case. The following three categories, or functional classes, of roads can exist on BLM managed public lands.

Functional classes indicate the relative importance of a road's transportation and access functions, and are the basis for geometric design standards and maintenance guidelines. The functional classifications are determined according to guidance in BLM Manual 9113 Roads.

Collector Roads are the highest standard of a BLM road. They provide primary access to large blocks of land and connect with or are extensions of a public road system. Collector roads accommodate mixed traffic and serve many uses. They generally receive the highest volume of traffic within the BLM road system. User cost, safety, comfort, and travel time are primary road management considerations. Collector roads usually require application of the highest standards used by the BLM. As a result, they have the potential for creating substantial environmental impacts and often require complex mitigation procedures.

Local Roads normally serve a smaller area than collector roads and connect to collector roads or public road systems. Local roads receive lower volumes, carry fewer traffic types, and generally serve fewer users. User cost, comfort, and travel time are secondary to construction and maintenance cost considerations. Low volume local roads in mountainous terrain, where operating speed is reduced by effort of terrain, may be single lane roads with turnouts.

Resource Roads are usually spur roads that provide point access and connect to local or collector roads. They carry very low volumes of traffic and accommodate only one or two types of uses. Use restrictions are applied to prevent conflicts between users needing the road and users attracted to the road. The location and design of these roads are governed by environmental

compatibility and minimizing BLM costs, with minimal consideration for user cost, comfort, or travel time.

Primitive Road: A primitive road is a linear route managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards.

Primitive Roads make up the majority of routes in the Transportation System. They are typically unimproved routes that are maintained solely by the use of the route by vehicles, or routes that are maintained on an "as needed" basis. Although the definition states they are managed for use by four-wheel drive or high-clearance vehicles – often they are used with sufficient frequency to allow regular use by two-wheel drive and low-clearance vehicles. Many of these routes are either historic (e.g., old mining or ranching roads) or more recent user-created routes that see sufficient use to keep vegetation from colonizing the tire travel surface, though in some cases vegetation may be found in the center of the road bed.

The following three categories of primitive roads can exist on BLM managed public lands. These categories are not precise and may overlap because they are defined both by location and by relative levels of use.

Primitive Road: Primary - These routes provide the primary access into and through BLM public lands, extend the furthest continuously into and across a TMA, and connect with or are extensions of either the public road system or the BLM's Transportation System. Most receive low volumes of traffic, but generally receive a higher volume of traffic than secondary or tertiary primitive roads.

Primitive Road: Secondary - These routes within or to BLM public lands often spur off the primary roads within the TMA. Secondary primitive roads may provide side loop routes, travel to lesser-visited destinations, provide access to four-wheel technical users, or receive lower volumes of traffic.

Primitive Road: Tertiary - These routes provide point-access and connect back to primary and secondary primitive roads. They may carry very low volumes of traffic and frequently travel out to only one or two specific destinations.

Trail: A linear route managed for human-powered, livestock, or OHV forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Unlike primitive roads and roads, the primary use of trails tends to be recreational in nature. With the onset of larger OHV equipment (side-by-sides) the definition above probably does not hold true, in that trails may not always accommodate all OHVs or may indeed sometimes accommodate or be managed for use by four-wheel drive or high-clearance vehicles. This classification is most useful when specifically identifying routes with recreational purposes and where the management direction is to limit use to a smaller trail bed (e.g., single track, hiking, mountain biking, etc.).

This limited definition of a Transportation Network is insufficient to cover the range of linear travel features managed by the BLM within the WEMO planning area. Primitive routes are also considered to be part of the BLM's Transportation System (although they would not be recorded in FAMS).

Primitive Route: Any motorized/mechanized linear transportation feature located within a Wilderness Study Area (WSA) or in an area designated in a land use plan to be managed for its wilderness values. These routes remain in this status until Congressional action occurs on the WSA or, in the case of lands with wilderness characteristics; a management decision is made to no longer manage an area for these values.

Should Congressional action release a WSA from its study status or a Land Use Plan amendment decide not to manage lands with wilderness characteristics for those resource values, the routes should be reclassified and designated appropriately to one of the other designations. If the routes are no longer of public value, they should be identified as transportation linear disturbances.

3.13.2.2 Assets Not Included in the Transportation System

There are some linear travel features on public lands that are not included within the Transportation System because they are not routes (transportation linear disturbances), are routes that are not open to public use (temporary routes), or are not managed by the BLM (non-BLM routes).

- Transportation Linear Disturbance: Linear features that are not designated as part of the Transportation System and are not temporary routes (e.g., granted under easement, authorization or permit).
- Transportation linear disturbances are, however, managed concurrently (e.g., following the same guiding principles, contained in the same data sets, etc.) with the Transportation System until such time that the feature cannot be readily identified by on-the-ground evidence.
- Temporary Route: Short-term roads, primitive roads or trails authorized (i.e., emergency access routes) or acquired for the development, construction or staging of a project or event that has a finite lifespan.

These routes are not intended to be part of the permanent or designated transportation network system, unless so designated, and must be reclaimed when their intended purpose(s) has been fulfilled. Unless they are specifically intended to accommodate public use or provide the best option for public use in an area, they are not available for public use. A temporary route is authorized or acquired for the specific time period and duration specified in the written authorization (permit, ROW, lease, contract etc.) and normally is scheduled and budgeted for reclamation to prevent further vehicle use and soil erosion from occurring by providing adequate drainage and re-vegetation.

The definition includes not only short-term roads, primitive roads and trails, but also any route associated with a project of a finite lifespan for which a third-party will be responsible for the decommissioning, reclamation and restoration of the route upon completion of the project. As with short-term roads, the temporary routes are not included in the Transportation System and the terms of the written authorization will be determinant. The requirement to reclaim temporary routes, and identify a responsible party and source of funds, provides a formal approach for temporary route removal.

In point of fact, many routes that were, at the time of authorization “temporary routes” have been designated as part of the Transportation System. These routes often provide the best maintained

OHV-accessible routes through public lands in the desert and the most efficient means for the public to get from one location to another. In the absence of their designation, temporary routes are not part of the Transportation System.

Transportation System needs and resource considerations may change dramatically over the life of some temporary routes, as many project authorizations are for 30 years or more. While it is anticipated that these routes will be reclaimed at the end of the authorization, the determination to reclaim a temporary route may be revisited and revalidated at the terminus of the project, during the termination, revocation or abandonment process. At that time, the BLM specifically addresses the terms of reclamation, whether the route has a public purpose at the time of termination, and if so, may evaluate and add the route to the Transportation System, designate the route accordingly, and absolve the third-party of any further maintenance and restoration responsibility, consistent with current public participation and route designation procedures.

Non-BLM Routes: These are routes that are located on lands managed by the BLM, but are managed by another agency, generally by right-of-way (ROW) or other agreement. Non-BLM routes include interstate highways, State routes, County-maintained roads, and roads within city limits. These routes are not part of the BLM Transportation System, but connect with and run through the BLM transportation network and are therefore considered in BLM Transportation System development and maintenance.

3.13.3 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)	Motorized	Street legal only
Primitive Road (Primary, Secondary or Tertiary)	Motorized	ATV/UTV, administrative, authorized/permitted, competitive, designated only, motorcycle, seasonal, street legal only
Trail	Motorized	Motorcycle, ATV/UTV
Trail	Non-Motorized	Biking, designated only, seasonal
Trail	Non-Mechanized	Hiking, equestrian, designated only, seasonal
Primitive Route*	Motorized	ATV/UTV, administrative, authorized/permitted, designated only, motorcycle, seasonal, bicycle?
Temporary Route*	Motorized	ATV/UTV, administrative, authorized/permitted, designated only, 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 motorized vehicles has created several issues on public lands in the planning area. First, the increasing capability of motorized vehicles 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 motorized 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 (VVTA) 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, Chuckawalla 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 vehicular 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 access to collectors, it is preferable that access is limited 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 National Agriculture Imagery Program (NAIP) aerial photography into the Ground Transportation Linear Features (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 motorized vehicle 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 vehicle 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 motorized, 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 motorized 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 General Information on Paleontological Resources

A paleontological resource is defined in the federal Paleontological Resources Preservation Act (PRPA) as the "fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth" (16 United States Code [U.S.C.] 470aaa[1][c]). For the purpose of this analysis, a significant paleontological resource is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be scientifically important for one or more of the following reasons:

- The fossil extends the temporal (stratigraphic) or geographic distribution for a specific taxonomic group of fossils.
- It is a rare or previously unknown species.
- It represents an exceptionally high-quality, well-preserved and morphologically complete specimen.
- It preserves a previously unknown anatomical feature or exhibits other characteristic features which represent ontogenic, pathologic, or traumatic variations.
- It provides new information about the history of life on Earth.
- It has identified educational or recreational value.

Paleontological resources that may be considered not to have paleontological significance include those that lack provenance or context, lack physical integrity because of decay or natural erosion, or are overly redundant or otherwise not useful for academic research (BLM Instruction Memorandum [IM] 2009-011).

The intrinsic value of paleontological resources largely stems from the fact that fossils serve as the only direct evidence of prehistoric life. They are thus used to understand the history of life on earth, the nature of past environments and climates, the biological membership and structure of ancient ecosystems, and the patterns and processes of organic evolution and extinction. Despite the tremendous volume of sedimentary rocks preserved worldwide and the enormous number of organisms that have lived during the vast expanse of geologic time, preservation of plant and animal remains as fossils is rare. Further, 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. Essentially, paleontological resources include fossil remains and traces as well as the fossil-collecting localities and the geological rock units (e.g., formations) containing those localities. Knowing the geographic and topographic distribution of fossil-bearing rock units makes it possible to predict where fossils will, or will not, be encountered.

This chapter discusses applicable regulatory framework and the physical setting relevant to paleontological resources within the WEMO planning area. The chapter provides site-specific details for known paleontological resource areas within the planning area. In addition, the analysis uses the regional scale (1:750,000) mapping of fossil yield potential developed for the

2015 DRECP EIS. The Potential Fossil Yield Classification (PFYC) developed for the DRECP area represents an estimate based on the available regional- scale geologic data; it is not meant to replace the project and site-specific identification and evaluation of potential paleontological resources. Individual route designation actions which involve ground disturbance would be required to evaluate paleontological resources at a project-level of detail and would need to use the most detailed geologic and paleontological data available as part of project-level assessments.

3.14.2 Regulations and Standards

The management and preservation of paleontological resources on public lands are governed under various laws, regulations, and standards, including the Paleontological Resources Preservation Act summarized in this section. Additional statutes for management and protection include the Federal Land Policy and Management Act (Public Law 94–579, codified at 43 U.S.C. 1701–1782 and 18 U.S.C. 641), which penalizes the theft or degradation of property of the U.S. Government. Other federal acts—the Federal Cave Resources Protection Act (16 U.S.C. 4301 et seq.) and the Archaeological Resources Protection Act (16 U.S.C. 470 et seq.)—protect fossils found in significant caves or in association with archeological resources. The BLM has also developed general procedural guidelines (Manual H-8720-1; IM 2008-009; IM 2009-011) for the management of paleontological resources.

Paleontological Resources Preservation, Omnibus Public Land Management Act, Public Law 111-011, Title VI, Subtitle D.

The Omnibus Public Land Management Act, Paleontological Resource Preservation Subtitle (16 U.S.C. 470aaa et seq.), directs the secretaries of the Department of the Interior and the Department of Agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise. (This act is known by its common names, the Omnibus Act or the Paleontological Resources Preservation Act.) The Paleontological Resources Preservation Act incorporates most of the recommendations of the report of the Secretary of the Interior titled "Assessment of Fossil Management on Federal and Indian Lands" to formulate a consistent paleontological resources management framework. In passing the Paleontological Resources Preservation Act, the U.S. Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The act codifies existing policies of BLM, National Park Service, U.S. Forest Service, Bureau of Reclamation, and the U.S. Fish and Wildlife Service, and provides:

- Uniform criminal and civil penalties for illegal sale and transport, theft, and vandalism of fossils from federal lands.
- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants).
- Uniform definitions for "paleontological resources" and "casual collecting."
- Uniform requirements for curation of federal fossils in approved repositories.

Federal legislative protections for scientifically significant fossils apply to projects that take place on federal lands (with certain exceptions, such as the Department of Defense, which

continue to protect paleontological resources under the Antiquities Act). Such protections involve federal funding, require a federal permit, or involve crossing state lines.

Antiquities Act of 1906 (16 U.S.C. 431-433).

The Antiquities Act of 1906 states, in part:

> Any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than 90 days, or shall suffer both fine and imprisonment, in the discretion of the court.

Although there is no specific mention of natural or paleontological resources in the Antiquities Act, or in the act's uniform rules and regulations (43 Code of Federal Regulations [CFR] 3), "objects of antiquity" has been interpreted by the National Park Service, BLM, the U.S. Fish and Wildlife Service, and other federal agencies to include fossils. Permits to collect fossils on lands administered by federal agencies are authorized under this act. Therefore, projects involving federal lands will require permits for both paleontological resource evaluation and mitigation efforts.

Archaeological and Paleontological Salvage (23 U.S.C. 305).

Statute 23 U.S.C. 305 amends the Antiquities Act of 1906. Specifically, it states:

> Funds authorized to be appropriated to carry out this title to the extent approved as necessary, by the highway department of any State, may be used for archaeological and paleontological salvage in that state in compliance with the Act entitled "An Act for the preservation of American Antiquities," approved June 8, 1906 (PL 59-209; 16 U.S.C. 431-433), and State laws where applicable.

This statute allows funding for mitigation of paleontological resources recovered pursuant to federal aid highway projects, provided that "excavated objects and information are to be used for public purposes without private gain to any individual or organization" (Federal Register 46[19]; 9570).

National Registry of Natural Landmarks (16 U.S.C. 461-467).

The National Natural Landmarks Program, established in 1962, is administered under the Historic Sites Act of 1935. Regulations were published in 1980 under 36 CFR 1212 and the program was re- designated as 36 CFR 62 in 1981. A National Natural Landmark is defined as:

> … an area designated by the Secretary of the Interior as being of national significance to the United States because it is an outstanding example(s) of major biological and geological features found within the boundaries of the United States or its Territories or on the Outer Continental Shelf (36 CFR 62.2).

National significance describes:

> … an area that is one of the best examples of a biological community or geological feature within a natural region of the United States, including terrestrial communities, landforms, geological features and processes, habitats of native plant and animal species, or fossil evidence of the development of life (36 CFR 62.2).

Federal agencies and their agents should consider the existence and location of designated National Natural Landmarks, and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under Section 102(2)(c) of the National Environmental Policy Act (42 U.S.C. 4321). The National Park Service is responsible for providing requested information about the National Natural Landmarks Program for these assessments (36 CFR 62.6[f]). However, other than consideration under the National Environmental Policy Act, National Natural Landmarks are afforded no special protection. Furthermore, there is no requirement to evaluate a paleontological resource for listing as a National Natural Landmark.

BLM Manuals, Handbooks, and Instruction Memoranda

BLM Manual 8270 and BLM Handbook H-8270-1 contain BLM's policy and guidance for the management of paleontological resources on public lands. The manual has more information on the authorities and regulations related to paleontological resources. The handbook gives procedures for permit issuance, requirements for qualified applicants, and information on paleontology and planning. The classification system for potential fossil-bearing geologic formations on public lands in the handbook has been revised and replaced by the PFYC, as discussed in this section.

The manual and handbook will be revised after the new regulations (currently being developed and reviewed) are promulgated under the PRPA. Until that time, BLM will continue to follow the policy and guidelines in the manual and handbook that are not superseded by the PRPA. The BLM's overarching guidance for paleontological resources is that locating, evaluating, and classifying paleontological resources and developing management strategies for them must be based on the best scientific information available. Management of paleontological resources should emphasize:

- The uniqueness of fossils.
- Their usefulness in deciphering ancient and modern ecosystems.
- The public benefits and public expectations arising from their scientific, recreational, and educational values.
- The BLM's interest in and need for the continued advancement of the science of paleontology.
- The importance of minimizing resource conflicts within a multiple use framework.

Potential Fossil Yield Classification System

On October 15, 2007, with the release of IM 2008-009, BLM formalized a new classification system for identifying fossil potential on public lands. This classification system is based on the presence of significant paleontological resources in a geologic unit and its potential risk for

impacts to the resource. It is a broad approach to planning efforts and an intermediate step in evaluating specific projects. IM 2008-009 will be incorporated into the next update of BLM Handbook H-8270-1, General Procedural Guidance for Paleontological Resource Management.

Using the PFYC system, geologic units are classified as Class 1 (very low) through Class 5 (very high), based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts. A higher class number indicates a higher potential for adverse environmental impacts. This system is used to set management policies and is not intended to apply to specific paleontological localities or small areas within geologic units. The PFYC system is used to assess the potential for discovery of significant paleontological resources or the impact of surface disturbing activities to such resources by using a five-class ranking system:

1. Class 1 – Very Low. Geologic units that are not likely to contain recognizable fossil remains. This class usually includes units that are igneous or metamorphic, excluding reworked volcanic ash units; or units that are Precambrian in age or older. Management concern for paleontological resources in Class 1 units is usually negligible or not applicable and assessment or mitigation is usually unnecessary except in very rare or isolated circumstances. The probability for impacting any fossils is negligible and assessment or mitigation of paleontological resources is usually unnecessary.
2. Class 2 – Low. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. This class typically includes vertebrate or significant invertebrate or plant fossils not present or very rare, units that are generally younger than 10,000 years before present, recent aeolian deposits, or sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration). Management concern for paleontological resources is generally low. Assessment or mitigation is usually unnecessary except in rare or isolated circumstances and the probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Localities containing important resources may exist, but would be rare and would not influence the overall classification. These important localities would be managed on a case-by-case basis.
3. Class 3 – Moderate or Unknown. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. This class includes sedimentary rocks that are marine in origin with sporadic known occurrences of vertebrate fossils or other rocks where vertebrate fossils and scientifically significant invertebrate or plant fossils are known to occur intermittently. The predictability of fossils within these units is known to be low or the units have been poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance. This class is subdivided into two groups: Class 3(a) and Class 3(b).
    a) Class 3(a) is assigned to rock units where sufficient information has been developed to know that the unit has widely scattered occurrences of vertebrate fossils and/or scientifically significant invertebrate or plant fossils. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting.
    b) Class 3(b) is assigned to rock units that exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information

about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and the field survey may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed.

4. Class 4 – High. Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases. This class is subdivided into two groups, based primarily on the degree of soil cover: Class 4(a) and Class 4(b):
    a) Class 4(a) is assigned to rock units that are exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions and illegal collecting activities may impact some areas.
    b) Class 4(b) is assigned to areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.
5. Class 5 – Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation. This class is subdivided into Class 5(a) and Class 5(b) in the same manner as Class 4 above.

Assessment and Mitigation of Potential Impacts to Paleontological Resources

On October 10, 2008, BLM introduced guidelines for assessing potential impacts to paleontological resources to determine mitigation steps for federal actions on public lands covered under both the Federal Lands Policy and Management Act of 1976 and the National Environmental Policy Act (IM 2009-011). This IM provides field survey and monitoring procedures to help minimize impacts to paleontological resources in cases where a federal action could adversely affect significant paleontological resources.

These assessment and mitigation guidelines show the conditions under which no specific paleontology assessment is required, including when:

1. A project will only affect geologic units unlikely to contain significant fossils or that have a very low or low potential for significant fossils (i.e., PFYC Class 1 or 2).
2. No scientifically important localities are identified in the area.

However, pre-project field surveys, a paleontological monitoring program, or other mitigation measures may be needed if a project would disturb geologic units assigned PFYC classes 3, 4, or 5, possible fossil-bearing alluvium, or known significant localities. The BLM guidelines also outline procedures for conducting field surveys and monitoring on-site surface-disturbing activities.

3.14.3 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.

3.14.4 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 fluviatile 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 placed 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 Fanglomerate 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 are 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 tapirs (*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 fluviatile 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 (Woodburn 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-dippling 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*, *Hemiaucheni*, *Bison*, *Ovis*, *Breameryx geopherus*, *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.

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.

Motorized transportation and livestock grazing potentially have both beneficial and adverse effects on public lands. Designation of transportation routes for motorized use can have a beneficial impact on the following resources: socioeconomics, minorities, recreation, grazing, and other uses of public lands, low-income and other special populations, 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 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, but due to the predominance of minorities in the sheep grazing industry, grazing also benefits minorities. Grazing is a small element of the socioeconomics and commercial uses of the region.

Motorized 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 special populations, including minorities and low-income communities. 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 motorized vehicle 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 climate change. 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, 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 motorized or other types of transportation uses are classified as transportation linear disturbances, and are to be closed.

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. As an introduction to the analysis, Section 4.1.4 provides a brief summary of the six plan amendment decisions for travel management, of the plan amendment to the livestock grazing program, of route designation, and of implementation strategies associated with each of the alternatives. Sections 4.2 through 4.13 then 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 Alternatives 1 through 4.

The impact analysis includes the adverse and beneficial impacts that are generally associated with motorized vehicle operation and livestock grazing on public lands. This section discusses the effects of allowing access on motorized routes and non-motorized/non-mechanized routes on public lands; the effects of restricting access on those routes; the effects of eliminating access by designating routes as transportation linear disturbances; and the effects of 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 closed (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 closure of routes, such as the amount of particulate matter emissions that may be avoided through re-vegetation of closed routes.

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 motorized 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 TMA level, in order to identify potential location-specific impacts. Similarly, biological resources were evaluated at the level of the applicable ACEC, DT

ACEC, 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 partially 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. To facilitate comparisons of similarities and differences in impacts among the alternatives, a summary of impacts is presented in Section 4.16.

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.

Table 4.1-1. General Assumptions for Analysis

Category	Assumptions
Impact Analysis	• 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	• 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	• 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.

A general assumption used in the analysis in this Chapter is that the total miles traveled by motorized vehicles 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 motorized 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 motorized 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 motorized use and increased miles within the network would result in variations in effects to resources, depending on specific locations of opened and closed routes.

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.

Of the proposed CDCA plan amendment decisions being considered as part of the WMRNP, two of the decisions (PA I, Modification of Language Limiting Route Network to Existing Routes and PA II, Travel Management Areas) neither authorize or remove authorization for motorized vehicle use in a specific area. These decisions would 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 clarify the manner in which future route network modifications consider the resource and use factors specified in 43 CFR 8342.1, to facilitate communication of route use limitations to the public, and to facilitate BLM's ability to enforce route use limitations. As a result, these decisions are expected to have no adverse effect on resources, and may benefit resources by facilitating adaptive management changes in response to changing on-the-ground conditions.

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 access, 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 redesignated, and if consistent with 43 CFR 8342.1, would generally be closed; 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 access 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 motorized routes or closed routes, 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. This process was described in subsection 2.3.

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 motorized routes in that location, the acreage of route-related disturbance, and/or number of potentially affected resources in close proximity to motorized 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. motorized 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 (closed routes identified for natural or active rehabilitation). However, closure of routes also leads to more gradual beneficial impacts to some resources due to long-term route rehabilitation and re-vegetation, which could continue to increase beyond the life of the 20-year planning horizon. Among the alternatives, the more routes that are closed 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 closed, 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 opening or closing specific routes 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 closure of routes 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 motorized vehicle 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.

4.1.4 Summary of Alternatives

Baseline Inventory of Routes

In 2012 and 2013, BLM updated the inventory of linear features by tracing features from USDA's 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 the unauthorized proliferation of 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. See Appendix E for a summary of the processes BLM has used over time to address routes in the Plan area.

The mileage and acreage associated with the inventoried routes is presented in Table 4.1-2.

Table 4.1-2. Baseline - Inventoried Linear Disturbance

Use Description	Mileage/Acreage
Total Mileage	16,003.3
Direct Acreage (based on 12 foot width of routes)	22,212.9[1]

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

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 DWMAs 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, DWMAs

have been replaced by desert tortoise ACECs (DT ACECs), but the stopping, parking and camping limitations applied to DWMAs in 2006 WEMO still apply in those areas.

The percentage of actual use in the camping, parking and stopping zone is unknown, but is probably very low, perhaps 1 percent of the designated zone. 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.

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. Indirect impacts from use of the route network within occupied habitat for threatened and endangered species might include temporary disruption of behavioral patterns of the species or the introduction of weeds, deposition of dust, spread of trash, disturbance by pets, or other effects of human use that could impair growth or reproduction of listed plants and animals.

Baseline Inventory of Other Resources

Primary data for most other resources were already collected and compiled into GIS layers. GIS layers used in the analyses and impact evaluations, along with their sources, are listed below. Most of these data are readily available from the source listed.

- Abandoned Mines (Source: BLM)
- Active Golden Eagle Nest Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Air Quality (MDAQMD)
- Alkali Mariposa Lily Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Areas of Critical Environmental Concern (Source: BLM)
- Bakersfield Cactus Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Barstow Woolly Sunflower Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Bendires Thrasher Habitat (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Burrowing Owl Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)

- California Desert National Conservation Lands (Source: BLM)
- Charlottes Phacelia Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Clokeys Cryptantha Occurrences (Source: CNDDB)
- Cultural Resources Information (Source: BLM, generated from County records)
- Cushenbury Buckwheat Critical Habitat (Source: US Fish and Wildlife Service)
- Cushenbury Buckwheat Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Cushenbury Milkvetch Critical Habitat (Source: US Fish and Wildlife Service)
- Cushenbury Milkvetch Occurrences (Source: CNDDB)
- Cushenbury Oxytheca Critical Habitat (Source: US Fish and Wildlife Service)
- Dedeckers Clover Occurrences (Source: CNDDB)
- Desert Bighorn Sheep Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Desert Cymopterus Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Desert Linkages (Source: SC Wildlands)
- Desert Tortoise Critical Habitat (Source: US Fish and Wildlife Service)
- Desert Tortoise ACECs (Source: BLM)
- Fringed Myotis Occurrences (Source: CNDDB)
- Gray Vireo Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Grazing Allotments (Source: BLM)
- Guzzlers (Source: Society for Bighorn Sheep)
- Halls Daisy Occurrences (Source: CNDDB)
- Kelso Creek Monkeyflower Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Kern Buckwheat Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Lane Mountain Milkvetch Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Lands Managed for Wilderness Characteristics (Source: BLM)
- Lakes (Source: BLM)

- Little San Bernardino Mountains Linanthus Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Route Densities (Generated by BLM (Margosian) for this project)
- Special Recreation Management Areas Boundaries (Source: BLM)
- Wilderness Areas (Source: BLM)
- Wilderness Study Areas (Source: BLM)
- Least Bells Vireo Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: DRECP)
- LeConte's Thrasher Habitat (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Mojave Fringe-toed Lizard Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Northern Sagebrush Lizard Occurrences (Source: CNDDB)
- Pallid Bat Occurrences (Source: CNDDB)
- Spotted Bat Occurrences (Source: CNDDB)
- Southwestern Willow Flycatcher Critical Habitat (Source: US Fish and Wildlife Service)
- Southwestern Willow Flycatcher Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Southwestern Pond Turtle (Source: BLM)
- Swainson's Hawk Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Western Smallfooted Myotis Occurrences (Source: CNDDB)
- Western Mastiff Bat Occurrences (Source: CNDDB)
- Yellowbilled Cuckoo Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Mohave Ground Squirrel Population Centers (Source: California Department of Fish and Wildlife)
- Mojave Monkeyflower Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Mojave Tarplant Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Ninemile Canyon Phacelia Occurrences (Source: CNDDB)
- Ninemile Canyon Phacelia Occurrences (Source: BLM)
- Owens Peak Lomatium Occurrences (Source: CNDDB)

- Parish's Daisy Critical Habitat (Source: US Fish and Wildlife Service)
- Parish's Daisy Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Parish's Phacelia Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Red Rock Poppy Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source :2016 DRECP LUPA)
- Robison Monardella Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Shortjoint Beavertail Cactus Occurrences (Source: CNDDB)
- Spanish Needle Onion Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- White Margined Beardtongue Occurrences (Source: CNDDB) and Modeled Suitable Habitat (Source: 2016 DRECP LUPA)
- Unusual Plant Assemblages (Source: BLM)
- Vegetation (Source: California Department of Fish and Wildlife/2006 DRECP LUPA)
- National Trails (Recreational and Historical) (Source: BLM)
- OHV Areas (Source: BLM and DOD)
- Parking Locations (Source: BLM)
- Recreation Destinations/Points of Interest (Source: BLM)
- Rock Collecting Areas (Source: BLM)
- SRP Routes (Source: BLM)
- Visual Resources Inventory (Source: Contract to BLM)
- Range Improvements (Source: BLM)
- Residences (Source: Vegetation Layer)
- Sensitive Receptors/Colleges (Source: ESRI)
- Sensitive Receptors/Health Facilities (Source: ESRI)
- Sensitive Receptors/Public Schools (Source: ESRI)
- Sensitive Receptors/Private Schools (Source: ESRI)
- Slopes (Source: Generated from BLM Contour Lines Data)
- Soil Wind Erodibility Group (Source: USDA SSURGO)
- Soil Hydrologic Group (Source: USDA SSURGO)
- Springs (Source: US Geological Survey)

- Washes (Source: BLM)

In addition to route data, additional field data was collected on the condition of riparian waters and springs, on cultural resources sites, wilderness characteristics, recreational destinations, and MFTL.

4.1.4.1 Alternative 1 - No Action Alternative

Alternative 1 Plan Amendment

Table 2.1-1 summarized the CDCA plan amendment decisions being considered as part of the transportation management and livestock grazing programs of the WMRNP. Under the No Action Alternative, no changes would be made to the CDCA Plan, as previously amended by the 2006 WEMO Plan and 2016 DRECP LUPA, and the Federal Court's Summary Judgment and Remedy orders, except in conformance with recent legislation.

As discussed in Section 2.2.1 and Table 2.1-1, the CDCA Plan currently includes language that is not reflective of current policy or regulation. Therefore, the No Action Alternative would, in some respects, not be reflective of current policy and regulation and some inconsistencies between plan guidance and route designations would not be resolved. The Plan Amendments and decisions under the No Action Alternative include:

> PA I: Modify CDCA Plan Language Limiting Network to Existing Routes: Under the No Action Alternative this modification would not take place. As discussed on Page 8 of the Court's Summary Judgment order, the CDCA Plan's language limiting OHV routes to those existing in 1980, at a minimum, is at the very root of the litigation associated with the 2006 WEMO Plan. There are two major difficulties associated with this language. First, as the Court acknowledges, BLM does not have an inventory of the route network as of 1980, so evaluating each linear feature to determine whether it did or did not exist in 1980 is not possible. The second difficulty is that the language does not appear to conform to the FLPMA requirement to consider and authorize administrative routes to support access for newly authorized rights-of-way such as power facilities and transmission lines, weather stations, communications sites, mining claims, or range improvements. In fact, the CDCA Plan language limiting OHV routes to those existing in 1980 could be read as in direct conflict with other CDCA Plan language that provides the framework for making revisions to route designations in the future. That framework specifically acknowledges that the designations or limitations, including the construction of new routes, may require modification to accommodate future access needs or protection requirements.
>
> PA II: Adopt TMAs: Under the No Action Alternative, no TMAs would be designated.
>
> PA III: Designate Competitive Event "C" Routes: Under the No Action Alternative the competitive or "C" routes that are to the northeast of the Spangler Hills Open Area above the Randsburg Wash Road would continue to be available for competitive motorized events managed under a Special Recreation Permit (SRP). There are approximately 20 miles of designated trails that are currently classified as "C" routes in this area. The Johnson Valley to Parker Valley Corridor would remain available for permitting, subject to approval and receipt of a SRP, and SRP event route parameters identified in the CDCA Plan, as supplemented through compliance with NEPA, Section 106, and the ESA. As

identified in the 2006 WEMO Plan speed-controlled corridor would be available between Stoddard Valley and Johnson Valley OHV Areas.

PA IV: Designate Access Parameters for Dry Lakes: Under the No Action Alternative Koehn Dry lakebed would remain designated as "Open", as it was designated in the WEMO Plan. Cuddeback, Coyote, and Chisholm Lake Trail Dry lakebeds would remain designated consistent with the surrounding area - "Closed to motor vehicle access, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit".

PA V: Access to Rand Mountains-Fremont Valley Management Area: Under the No Action Alternative the Rand Mountains area would be managed consistent with parameters outlined in 2.2.1.2.4 of the WEMO FEIS.

PA VI: Limit Area of Stopping, Parking, and Camping (SPC) Adjacent to Routes: Under the No Action Alternative, the stopping and parking rules associated with designated routes would remain as they are currently defined in the CDCA Plan, as modified by the 2016 DRECP LUPA in DT ACECs. Stopping and parking can take place within 50 feet of either side of the route centerline inside DT ACECs, while camping is restricted to existing disturbed areas adjacent to open routes, within 50 feet. Stopping, parking, and camping can take place within 300 feet of either side of centerline outside of DT ACECs, in accordance with 43 CFR 8341.1(f)(4), which states that no one may operate an off-road vehicle on public lands in a manner causing, or likely to cause significant, undue damage to or disturbance of the soil, wildlife, and wildlife habitat, improvements, cultural or vegetative resources or other authorized uses of the public lands.

PA VII: Limit the Livestock Grazing Program in Certain DT Habitat: Under the No Action Alternative 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. This would include the continuation of livestock grazing on approximately 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, allotments which contain desert tortoise critical habitat. Vacant allotments would be subject to NEPA analysis upon receipt of an application to graze, and, if grazing is approved, would be subject to the terms and conditions of the 2006 West Mojave Plan and the 2016 DRECP LUPA.

Alternative 1 Route Designations

The access network included in the No Action Alternative consists of 6,074 miles of motorized vehicular routes based on the route network that is currently available for use, as made in the following previous actions discussed in Section 3.1.1.2 and further detailed in Appendix E. 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 closed for the purposes of this analysis. Although the routes were not specifically closed 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 closed, including formerly undesignated routes (unless they have independent authorization).

The No Action Alternative incorporates all goals and objectives associated with travel management and access currently contained in the CDCA Plan, as well as the biological resource objectives of the 2006 West Mojave Plan and the 2016 DRECP LUPA. These goals are primarily specified in the MVA Element of the CDCA Plan, but are also addressed in other elements of the CDCA Plan, consistent with the MVA Element.

A summary description of the route network can be found in Section 2.3.2, and key elements of the network can be found in the Summary Table 2.4-2. Table 4.1-3 summarizes the mileage of routes designated in the No Action Alternative.

Table 4.1-3. No Action Alternative - Miles of Routes Designated

Use Description	Mileage[1]	Percentage of Total Network
Motorized		
Subdesignation: Administrative	15.5	0.1
Subdesignation: Authorized/Permitted	602.7	3.8
Subdesignation: Competitive "C" Route	39.5	0.2
Subdesignation: Motorcycle	36.7	0.2
Subdesignation: Seasonal	6.4	<0.1
Subdesignation: Street Legal	0	0
Subdesignation: N/A	5,373.4	33.6
Total Motorized	6,074.2	38.0
Non-Motorized[2]	--	--
Non-Mechanized	8.7	<0.1
Closed (Transportation Linear Disturbance)	8,900.1	55.6
Undesignated (Data not available in 2006)	1,018.2	6.4

1 - Total Inventory of Transportation Linear Features (including closed routes) is approximately 16,003 miles

2 – Non-motorized was not used as a designation in the No Action Alternative

Under the No Action Alternative, implementation of the network would be governed by the strategies outlined in current policy, in the CDCA Plan, in current ACEC Plans, in the 2006 WEMO Plan (Section 2.2.6, as reflected in the current Sign Plan, Maintenance Plan, Monitoring Plan, and Enforcement Plan), and the 2016 DRECP LUPA.

The implementation plans are located on the BLM California Desert District Website at http://www.blm.gov/ca/st/en/fo/cdd/wemo_court_mandates.html. These Implementation Plans place a priority on signing, informational kiosks, and route maintenance actions to clarify the network, which would have beneficial impacts for the recreational user and public land resources.

BLM would continue to implement the 2006 WEMO Plan and the 2016 DRECP LUPA and actively reclaim and disguise routes based on the biological priorities outlined in them, meaning that access on some features that are currently used by motorized vehicles would continue to be physically eliminated per those priorities.

Monitoring and response strategies for other resource values outside of ACECs, CDNCLs, and national monuments would be pursued consistent with the BLM's current policies, 43 CFR 8342.1, and the CDCA Plan, as issues are identified.

4.1.4.2 Alternative 2 – Resource Conservation Enhancement

Alternative 2 Plan Amendment

The Alternative 2 travel management framework includes an access network which supports the objectives of increased biological and other resource enhancement in the entire planning area. This network identifies additional access limitation parameters based on the resource enhancement objectives, uses GIS and other technical analysis of current route information and resources, and emphasizes elimination of access as the primary mitigation measure to resolve conflicts (i.e., designating routes closed).

Table 2.1-1 summarized the CDCA plan amendment decisions being considered as part of the travel management and livestock grazing programs of the WMRNP. As discussed in Section 2.2.1 and Table 2.1-1, the CDCA Plan currently includes language that is not reflective of current policy or regulation. PA I is necessary to conform the WMRNP to current policy, regulation, and law, and would be the same under all action alternatives (Alternatives 2, 3, and 4):

> PA I: Modify CDCA Plan Language Limiting Network to Existing Routes: Under Alternatives 2, 3, and 4, the CDCA Plan's references to existing routes of travel would be deleted, and replaced with language describing the process for designating a travel network in accordance with 43 CFR 8342.1 and the BLM TTM Handbook.

Six additional plan amendment decisions would vary between the action alternatives. Under Alternative 2, these decisions include:

> PA II: TMAs: Alternative 2 would include the designation of eight Travel Management Areas (TMAs) as part of the Motor Vehicle Access (MVA) Element of the CDCA Plan, as described in Table 2.3-3.
>
> PA III: Competitive Event "C" Routes: Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These currently designated "C" routes would be available for use by competitive motorized events only during the months of November, December, and January. The routes designated to the northeast and south of the Spangler Hills Open Area would be open for casual use touring in the area throughout the year.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the OHV Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed in the WEMO Planning Area under Alternative 2. A Johnson Valley to Stoddard Valley competitive event corridor would not be established under this alternative.

PA IV: Dry Lakes: Alternative 2 would add Koehn, Cuddeback, Coyote, and Chisholm Trail Dry lakebeds to the list of designated lakebeds. The only change in access to these lakebeds would be to change the designation of Koehn lakebed from "Open" to "Closed, except as authorized by Land Use Permit or Special Recreation Permit". The other three lakebeds would remain "Closed to motor vehicle access, except for approved routes of travel or as authorized by Land Use Permit or Special Recreation Permit".

PA V: Access to Rand Mountains-Fremont Valley Management Area: Under Alternative 2, 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.

PA VI: SPC Limits: Alternative 2 would limit camping to previously disturbed areas adjacent to designated routes within 50 feet from the route centerline, both inside and outside of DT ACECs, except as site-specifically designated. Stopping and parking would be limited to within 50 feet of the route centerline throughout the planning area.

PA VII: Livestock Grazing: Alternative 2 would discontinue livestock grazing in DT ACECs and CHUs and reallocate 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. Public land totaling 115,106 acres would not be available for livestock grazing, consistent with 43 CFR 4130.2 (a). This would include 107,779 acres in the Ord Mountain Allotment, 6,726 acres in the Cantil Common Allotment, and 3,323 acres in the Shadow Mountain Allotment that would be unavailable for livestock grazing. The remainder of the grazing program in the WEMO Plan and 2016 DRECP LUPA would continue to apply to Alternatives 2, 3, and 4, as well as the No Action Alternative.

Alternative 2 Route Designation

The access network included in Alternative 2 would consist of 5,231 miles of motorized vehicular routes. A summary description of the Alternative 2 route network can be found in Section 2.3.3, and key elements of the network can be found in the Summary Table 2.4-2. Table 4.1-4 summarizes the mileage of routes designated in Alternative 2.

Table 4.1-4. Alternative 2 - Miles of Routes Designated

Use Description	Mileage[1]	Percentage of Total Network
Motorized		
Subdesignation: Administrative	101.6	0.6
Subdesignation: ATV/UTV	3.7	<0.1
Subdesignation: Authorized/Permitted	1,133.0	7.1
Subdesignation: Competitive "C" Route	41.4	0.3

Table 4.1-4. Alternative 2 - Miles of Routes Designated

Use Description	Mileage[1]	Percentage of Total Network
Subdesignation: Motorcycle	20.5	0.1
Subdesignation: Seasonal	6.9	<0.1
Subdesignation: Street Legal	109.7	0.7
Subdesignation: N/A	3,814.2	23.8
Total Motorized	5,231.0	32.6
Non-Motorized	33.1	0.2
Non-Mechanized	20.6	0.1
Closed (Transportation Linear Disturbance)	10,718.6	67.0

1 - Total Inventory of Transportation Linear Features (including closed routes) is approximately 16,003 miles

4.1.4.3 Alternative 3 – Public Lands Access Maintenance

Alternative 3 Plan Amendment

This alternative was developed to support the objectives of maintaining commercial and casual use, including recreational access in the planning area. This alternative also includes plan amendment decisions needed to bring the CDCA Plan and the West Mojave Plan into conformance with current policy, and delineates eight TMAs as part of its travel management framework. The alternative was developed to promote vehicle access to areas of casual user interest including various forms of recreation such as rock-hounding, bird watching, trail riding, extreme 4-wheel driving, horseback riding, camping, backpacking, mountain-bike riding, hunting, wildlife observation, and use of scenic vistas. Inyo, Kern, and San Bernardino County recreation plans were also emphasized in the route designations. Minimization measures utilize non-closure approaches to the extent possible, and give additional emphasis on access in areas with less conflict.

Table 2.1-1 summarized the CDCA plan amendment decisions being considered as part of the travel management and livestock grazing programs of the WMRNP. As discussed in Section 2.2.1 and Table 2.1-1, PA I is necessary to conform the WMRNP to current policy, regulation, and law. As a result, PA I would also be adopted under Alternative 3.

> PA I: Modify CDCA Plan Language Limiting Network to Existing Routes: Under Alternatives 2, 3, and 4, the CDCA Plan's references to existing routes of travel would be deleted, and replaced with language describing the process for designating a travel network in accordance with 43 CFR 8342.1 and the BLM TTM Handbook.

Six additional Plan Amendment decisions would vary between the action alternatives. Under Alternative 3, these decisions include:

> PA II: TMAs: Alternative 3 would include the designation of eight TMAs as part of the MVA Element of the CDCA Plan, as described in Table 2.3-3.
>
> PA III: Competitive Event "C" Routes: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed and may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Any race staging and pit areas for "C" routes would be limited to those areas previously dedicated as pit areas along the route.

Alternative 3 would specify a Johnson Valley connector race or speed-controlled event route-connector(s) between non-connecting portions of the remaining Johnson Valley OHV Recreational Area to provide a corridor that enhances organized vehicle riding opportunities within the Open Area, subject to additional coordination as needed with DOD. Staging and pit areas would be limited to within the Recreation Area. The decision would identify a specific route for the competitive-event connector between the remaining Johnson Valley OHV Recreational Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures. This connector was adopted in the WEMO Plan, but no specific route was identified. The Johnson Valley to Parker Valley Corridor would be removed in the WEMO Planning Area under Alternative 3, which has not been used since the listing of the desert tortoise.

PA IV: Dry Lakes: Alternative 3 would add Koehn, Cuddeback, Coyote, and Chisholm Trail Dry lakebeds to the list of designated lakebeds. Koehn lakebed would be changed from "Open" to "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be changed from "Closed to Motor Vehicle Access, except for designated routes or by Authorization, including Special Recreation Permit" to "Open" to motorized use, subject to appropriate minimization measures.

PA V: Access to Rand Mountains-Fremont Valley Management Area: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated upon issuance of a transportation management plan for the area. The remaining general management framework 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, and a carefully managed Limited network would be established in the Rand Mountains area.

PA VI: SPC Limits: Alternative 3 would limit camping to previously disturbed areas adjacent to designated routes within 50 feet from 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. Designated camping and staging areas may be designated which exceed these parameters, with appropriate NEPA compliance and associated consultations.

PA VII: Livestock Grazing: Under Alternative 3, 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. This would include the

continuation of livestock grazing on approximately 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. Vacant allotments would be subject to NEPA analysis upon receipt of an application to graze, and, if grazing is approved, would be subject to the terms and conditions of the 2006 West Mojave Plan and 2016 DRECP LUPA.

Alternative 3 Route Designation

The access network included in Alternative 3 would consist of 10,864 miles of motorized vehicular routes. A summary description of the Alternative 3 route network can be found in Section 2.3.4, and key elements of the network can be found in the Summary Table 2.4-2. Table 4.1-5 summarizes the mileage of routes designated in Alternative 3.

Table 4.1-5. Alternative 3 - Miles of Routes Designated

Use Description	Mileage[1]	Percentage of Total Network
Motorized		
Subdesignation: Administrative	24.1	0.2
Subdesignation: ATV/UTV	0.5	<0.1
Subdesignation: Authorized/Permitted	401.3	2.5
Subdesignation: Competitive "C" Route	92.4	0.6
Subdesignation: Motorcycle	36.7	0.2
Subdesignation: Seasonal	6.9	<0.1
Subdesignation: Street Legal	64.2	0.4
Subdesignation: N/A	10,238.0	64.0
Total Motorized	10,864.1	67.9
Non-Motorized	91.8	0.6
Non-Mechanized	69.9	0.4
Closed (Transportation Linear Disturbance)	4,977.5	31.1

1 - Total Inventory of Transportation Linear Features (including closed routes) is approximately 16,003 miles

4.1.4.4 Alternative 4 – Proposed Action

Alternative 4 Plan Amendment

This alternative would adopt nine TMAs as part of its travel management framework, to incorporate input from BLM's collaborative community outreach processes. This alternative also includes plan amendment decisions needed to bring the CDCA Plan and the 2006 WEMO Plan into conformance with current policy.

Table 2.1-1 summarized the CDCA plan amendment decisions being considered as part of the travel management and livestock grazing programs of the WMRNP. As discussed in Section 2.2.1 and Table 2.1-1, the CDCA Plan currently includes language that is not reflective of current policy or regulation. PA I is necessary to conform the WMRNP to current policy, regulation, and law. As a result, PA I would also be adopted under Alternative 4.

PA I: Modify CDCA Plan Language Limiting Network to Existing Routes: Under Alternatives 2, 3, and 4, the CDCA Plan's references to existing routes of travel would be deleted, and replaced with language describing the process for designating a travel network in accordance with 43 CFR 8342.1 and the BLM TTM Handbook.

Six additional Plan Amendment decisions would vary between the action alternatives. Under Alternative 4, these decisions include:

PA II: TMAs: Alternative 4 would include the designation of nine TMAs as part of the MVA Element of the CDCA Plan. The boundaries of the nine TMAs included in Alternative 4 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: Competitive Event "C" Routes: Under Alternative 4, 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 motorized events managed under a SRP. If the Johnson Valley-to-Parker Valley Race route is determined to be no longer viable or otherwise deleted, additional (C) open routes may be designated outside of OHV Open Areas with appropriate NEPA and consistent with the WEMO Plan and the applicable travel management plan(s). In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. This alternative would specify a Johnson Valley connector race or speed-controlled route-connector(s) between non-connecting portions of the remaining Johnson Valley OHV Recreational Area to provide a corridor that enhances organized vehicle riding opportunities within the Open Area. Staging and pit areas would be limited to within the Recreation Area. The decision would identify a specific route for the competitive-event connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures. This connector was adopted in the WEMO Plan, but no specific route was identified.

PA IV: Dry Lakes: Alternative 4 would add Koehn, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds to the list of designated lakebeds. Koehn lakebed would be changed from "Open" to "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be changed from "Closed to Motor Vehicle Access, except for designated routes or by Authorization, including Special Recreation Permit" to "Open" to motorized use, subject to appropriate minimization measures.

PA V: Access to Rand Mountains-Fremont Valley Management Area: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated upon issuance of a transportation management plan for the area. The remaining general management frame work for the Rand Mountains – Fremont Valley Management Area would stay intact as outlined in 2.2.1.2.4 of the WEMO FEIS and the No Action Alternative.

PA VI: SPC Limits: Alternative 4 would limit camping to previously disturbed areas adjacent to and within 50 feet from 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. Designated camping areas may be identified that exceed these parameters, with appropriate NEPA compliance and associated consultations.

PA VII: Livestock Grazing: Under Alternative 4, 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. This would include the continuation of livestock grazing on approximately 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. Vacant allotments would be subject to NEPA analysis upon receipt of an application to graze, and, if grazing is approved, would be subject to the terms and conditions of the 2006 West Mojave Plan and 2016 DRECP LUPA.

Alternative 4 Route Designation

The access network included in Alternative 4 would consist of 6,313 miles of motorized vehicular routes. A summary description of the Alternative 4 route network can be found in Section 2.3.5, and key elements of the network can be found in the Summary Table 2.4-2. Table 4.1-6 summarizes the mileage of routes designated in Alternative 4.

Table 4.1-6. Alternative 4 - Miles of Routes Designated

Use Description	Mileage[1]	Percentage of Total Network
Motorized		
Subdesignation: Administrative	15.8	0.1
Subdesignation: ATV/UTV	132.8	0.8
Subdesignation: Authorized/Permitted	241.7	1.5
Subdesignation: Competitive "C" Route	72.3	0.5
Subdesignation: Motorcycle	117.7	0.7
Subdesignation: Seasonal	6.9	<0.1
Subdesignation: Street Legal	65.7	0.4
Subdesignation: N/A	5,660.3	35.4
Total Motorized	6,313.2	39.4
Non-Motorized	87.1	0.5
Non-Mechanized	95.7	0.6
Closed (Transportation Linear Disturbance)	9,507.4	59.4

1 - Total Inventory of Transportation Linear Features (including closed routes) is approximately 16,003 miles

4.2 Air Quality

4.2.1 Air Emissions

4.2.1.1 Introduction

Affected Environment Summary

Section 3.2 describes air quality and public health concerns related to air quality in the WEMO planning area. Portions of the planning area that are in attainment and non-attainment with respect to state and federal ambient air quality standards (NAAQS and CAASQ respectively) for criteria pollutants are priority areas for BLM management. The BLM coordinates with the five air quality management districts (AQMDs) and air pollution control districts responsible for the three air basins that overlap with the planning area.

Areas of Focused Air Quality Management

Areas for focused management for air quality in the WEMO planning area have non-attainment status under either NAAQS or CAAQS. The criteria pollutants for which non-attainment status applies are ozone, PM_{10}, and $PM_{2.5}$.

Ozone Non-Attainment

All areas of CAAQS for ozone are in non-attainment. The EPA is currently evaluating the status of ozone for Indian Wells Valley under CAAQS and NAAQS for attainment.

Severe non-attainment status for the ozone NAAQS is present in the Antelope Valley, in the adjacent San Bernardino Federal Ozone Air Quality Management Zone (AQMZ), and in the Salton Sea Air Basin portion of the WEMO planning area. The WEMO portions of Inyo County, the vicinity of Ridgecrest and Indian Wells Valley in Kern County, and part of the San Bernardino County outside the AQMZ are unclassified as to ozone attainment status.

The BLM manages comparatively few lands in the Antelope Valley and in the area of overlap between the WEMO planning area and the Salton Sea Air Basin. The BLM manages large land holdings in the San Bernardino AQMZ, however. Therefore, the San Bernardino Federal Ozone AQMZ and Mojave Desert portion of Kern County comprise the analysis area for ozone and air quality in this SEIS.

PM_{10} Non-Attainment

The entire WEMO planning area apart from the Coso Junction air quality planning area is in non-attainment for the CAAQS for PM_{10}. Apart from the Antelope Valley AQMD, which is has "unclassified" status, the WEMO planning area is in non-attainment status for the NAAQS PM_{10}. Serious or severe non-attainment of the NAAQS for PM_{10} in the WEMO planning area is occurring at the far south end of the Owens Valley and the Salton Sea Air Basin portion of the WEMO planning area; the San Bernardino County portion in the Mojave Desert has moderate non-attainment. PM_{10} is a major source of fugitive dust that stems in part from driving on OHV trails. OHV recreation on BLM lands is an important activity in the eastern Kern County as well as in the San Bernardino Federal Ozone AQMZ, which has moderate non-attainment of the

NAAQS for PM_{10}. Therefore, the San Bernardino Federal Ozone AQMZ and Mojave Desert portion of Kern County comprise the analysis area for PM_{10} and air quality in this SEIS.

$PM_{2.5}$ Non-Attainment

The San Bernardino County Federal Ozone AQMA is the only portion of the WEMO planning area that does not attain the CAAQS for $PM_{2.5}$. The Inyo County portion of the WEMO planning area attains the CAAQS, and the remaining WEMO area is unclassified for the CAAQS for $PM_{2.5}$.

The WEMO planning area is unclassified for the NAAQS except for peripheral areas near the San Gabriel and San Bernardino mountains.

Therefore, the San Bernardino Federal Ozone AQMZ portion in the WEMO planning area comprise an area for air quality analysis for $PM_{2.5}$ in this SEIS.

Ambient Air Quality Standards

The WEMO Planning area overlaps with five air basins that are all currently designated as non-attainment for the CAAQS 24 hour and annual arithmetic mean PM_{10} standard, except for the Coso Junction air quality planning area which has recent attainment for the PM_{10} CAAQS. Apart from the Antelope Valley AQMD, the planning area is also designated as non-attainment, in some cases severe non-attainment, with respect to the federal 24 hour PM_{10} standard. Overall, ambient PM_{10} values in the planning area have been steadily decreasing since 1986, but this decrease may not correspond with dust emissions generated from OHV trails and vehicles.

Two parts of the planning area are designated as non-attainment for the state $PM_{2.5}$ standard. These are all Inyo County lands, and the San Bernardino County Federal Ozone AQMA near Trona.

The entire WEMO Planning area occurs in non-attainment areas for the state 1-Hour and 8-Hour ozone standard. Some portions of the planning area are designated as non-attainment with respect to the federal 8-hour ozone standard. The portion of WEMO within the South Coast Air Quality Management District is designated as non-attainment for the state annual and 1-Hour NO_2 standard. However, no BLM lands are present in the WEMO portion of the AQMD.

Locations of Sensitive Human Receptors

The WEMO planning area includes urban and residential areas that have residences, schools, hospitals, and other sites which may be considered sensitive receptors for air quality impacts stemming from non-attainment of standards for ozone, $PM_{2.5}$, and PM_{10}.

Areas Known to Create or Suspected of Creating Potentially Toxic Air Quality

Areas within OHV open areas or across the BLM-designated OHV route networks in the WEMO planning area are known to contain air toxins. Where PM_{10} exceedance occurs and where a significant share of PM_{10} generated by OHV trails and by OHV riders contains toxic PM_{10} emissions managed by the ARB California Air Toxic Program, local impacts to OHV riders might result.

Methodology

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 PM_{10} air emissions in both the short- and long-term. Reductions would come about from stabilization of closed routes with reestablishment of native vegetation and biological soil crusts 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 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 and near the WEMO planning area. The evaluation included specific inventorying of emissions from the OHV Open Areas. The results of this study were reported to BLM in the West Mojave Plan Air Quality Evaluation Report dated April, 2013 (MDAQMD 2013), and are discussed in Chapter 3.2.
- The route designation process for each alternative included evaluation of the location of each route with respect to receptors and residences that could be particularly sensitive to air emissions for criteria pollutants.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact sensitive receptors and residents, across four alternative route networks, ranging from 5,231 to 10,864 miles in size.

BLM re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, changes in conditions within the planning area, and changes in the applicable regulatory framework for air quality. This additional information is incorporated into the evaluation in Section 4.2.1.2 below.

4.2.1.2 Impacts Common to All Alternatives

Gases and particulate matter emitted into the air from the direct, indirect, and residual effects of motor vehicle use (a mobile source) associated with the BLM transportation network can cause air quality impacts. Direct emissions come from two principal sources: particulate matter less than or equal to 10 microns in size (PM_{10}) stemming from fugitive dust aerosolizing into the atmosphere as vehicles travel over soils of unpaved routes; and tailpipe exhaust from combustion

engines in motorized vehicles. Exhaust emissions contain EPA and state-regulated criteria pollutants including PM_{10}, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter less than or equal to 2.5 microns ($PM_{2.5}$). Another category of emissions regulated by the Air Resources Board are reactive organic gases (ROGs) also known as, using EPA terminology, volatile organic compounds (VOCs). NO_2 and ROGs/VOCs can react in the atmosphere to form ozone, another criteria pollutant. Motorized vehicle use can also lead indirectly to increased PM_{10} emissions when vehicle use creates surface disturbances that trigger erosion or destabilization leading to mass wasting (debris flows, rock slides) that generate fugitive dust emissions as material moves downslope and dislodges soil. Residual emissions stem from wind erosion volatilizing fugitive dust from small soil particles that recent vehicle travel has loosened previously.

Change in the amount of motorized vehicle use as a result of the WMRNP alternatives may alter emissions and air quality at different scales. Increased motorized vehicle use would result in an increase in direct emissions, adversely impacting air quality, while reductions in motorized vehicle use would lead to a beneficial impact on air quality due to reduced emissions. New disturbance surfaces created by newly designated and developed routes in previously undisturbed areas would result in increased residual wind erosion and fugitive dust. Rehabilitation of disturbed areas after route closures would reduce direct, indirect, and residual emissions and therefore benefit air quality.

Closure of a route does not necessarily result in a corresponding reduction in the miles traveled by users within the region, and designation of a new route does not necessarily increase vehicle miles traveled. If certain routes in a region are closed, users are likely to seek other nearby open routes for the same purpose. Closures or designation of motorized routes can affect the density of motorized vehicle use in certain areas, but are not likely to affect overall number of vehicles in operation, and therefore overall emissions in the region. Route closure, re-vegetation of routes, and natural regenerative processes would decrease wind erosion, and therefore decrease indirect and residual PM_{10} emissions, and would constitute a beneficial impact on air quality. Natural rates of surface stabilization and native re-vegetation alone may not occur evenly over the entire previously disturbed closed route and may not suffice for management goals for habitat.

The designation of the route network would affect regional PM_{10} emissions associated with wind erosion. In general, the total amount of PM_{10} 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 erosion than others. Any change in the overall disturbance amount and intensity among alternatives will manifest itself slowly and could increase well beyond the horizon of the planning effort. The MDAQMD report in Appendix D concluded that the thousands of miles of maintained and unmaintained unpaved roads and tracks in the WEMO Planning Area, some of which are on BLM public lands, contribute importantly to regional dust problems.

Because the transportation network alternatives include differing mileages of designated motorized routes and transportation linear disturbances (closed routes), the alternatives would result in differing indirect and residual air emissions, and would therefore differ in their adverse or beneficial impacts to air quality. In addition, although the overall direct emissions are expected to be the same regardless of the size of the transportation network, the variation of designated motorized routes and transportation linear disturbances among the alternatives would result in differences in the specific locations of localized emissions. As a result, some

alternatives may impact more or fewer sensitive receptors than others. These differences in impacts among the alternatives are analyzed in Sections 4.2.1.3, 4.2.1.4, 4.2.1.5, and 4.2.1.6 below.

Under all alternatives, changes in both direct and indirect emissions in the future would arise as new routes are designated for motorized use, or existing routes are designated as transportation linear disturbances (closed routes). Some changes in emission amounts could potentially occur near sensitive receptors or residences and have adverse or beneficial effects on people. However, the amount of these changes in emissions is expected to be minimal. In the future, after project implementation, new motorized routes and closure of existing designated routes would only be designated through the TTM process. The mileage of routes that would be added or removed from the network is expected to be minimal compared to the current inventory. BLM Rights-of-Way (ROWs) grants must first undergo evaluation under the designation criteria, environmental review and consideration of air quality impacts for any proposed ROW. Therefore, the specific emissions, receptors, and impacts are considered at the time of authorizations and mitigation measures are developed and applied to avoid or reduce adverse impacts on a case-by-case basis.

Chapter 2 discusses the general resource protection and motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., designated as transportation linear disturbances), under each alternative. In that analysis, air quality impacts, in the form of proximity of motorized use to sensitive receptors (schools, hospitals, and residential areas), were considered as a criterion in determining which routes would remain open and which would be closed under the various alternatives. In addition, the WMRNP alternatives include consideration of stopping and parking distances from routes in order to minimize potential disturbance in previously undisturbed areas, thus reducing the potential for indirect emissions through wind erosion. Therefore, minimization of air quality impacts was a factor both in development of the alternative route networks, and in the specific limitations placed on routes in those networks.

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 motorized vehicle use, including OHVs, to pollutant emissions in the planning area (MDAQMD 2013). Both regional-scale and neighborhood-scale monitors track pollutant emissions from OHVs and OHV Open Areas on BLM lands. For OHVs in Open Areas and on motorized routes near population centers, neighborhood-specific monitors record pollutant emissions tied to motor vehicles. The MDAQMD directly inventoried OHV emissions as mobile sources under the subcategory for off-highway recreational vehicles. Inventory results indicate that OHV exhaust is a negligible contributor to criteria pollutants in the WEMO Planning Area. On the other hand, ROG/VOC emissions are significant emissions. OHV VOC emissions are relatively high compared to other motorized vehicles because OHV engines are typically carbureted, rich burn engines without catalytic controls and hence have greater unburned fuel in their exhaust. VOC emissions, in turn, are a precursor to ozone formation, and ozone is a regionally problematic pollutant. Although

OHV exhaust is a negligible contributor to local emissions, it is a significant contributor to regional VOC emissions.

PM_{10} emissions from wind erosion of disturbed surfaces can be substantial in the planning area. However, as discussed in Section 3.2, 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 PM_{10} emissions. The area of use in WEMO 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. Effects on air quality from OHV Open Areas are confined to a local scale.

Although the use of OHV Open Areas generates indirect emissions of particulates, the MDAQMD study concluded that these emissions are small relative to the total emissions in the planning area. In addition, no changes to the Open Areas are proposed as part of the WMRNP. The Open Areas in the planning area were designated in the CDCA Plan, and no new areas or changes to existing areas are proposed. 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 all 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.

All local air districts have analyzed impacts from existing sources for PM_{10}, and prepared State Implementation Plans (SIP) for the their respective jurisdictional areas which 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 PM_{10} 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. 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 will all other air district SIPs in the WEMO Planning area. Under cumulative effects, since the effects of grazing on PM_{10} are nominal, grazing would not contribute to cumulative effects.

Livestock grazing operations would utilize motorized vehicles in day to day operations by using the transportation network of Open or Limited routes. This use is necessary to facilitate the grazing operation but the amount of emissions produced by one or two vehicles is minimal and the direct and indirect impacts to air quality under all alternatives would be de minimis.

Federal Conformity

A federal conformity analysis is required for any federal action within any federal non-attainment 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 non-attainment/maintenance areas conform to the applicable state implementation plan (SIP) before the 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 or delay timely attainment of any standard or any required interim emission reduction or other milestones.

The areas within the West Mojave planning area that are in non-attainment or maintenance areas for the federal NAAQS are as follows:

Ozone

- The Antelope Valley portion of the Mojave Desert Air Basin (MDAB) is designated as severe non-attainment.
- The East Kern Air Pollution Control District portion of the MDAB is designated as moderate non-attainment.
- The San Bernardino Federal Ozone Air Quality Management Area (AQMA) portion of the MDAB is designated as severe non-attainment.
- The remainder of San Bernardino County in the MDAB is designated as non-attainment.
- The small Coachella Valley portion of the Salton Sea Air Basin (SSAB) in the WEMO planning area is designated as severe non-attainment.

PM_{10}

- The Owens Valley portion of the Great Basin Valleys Air Basin (GBVAB) is designated as severe non-attainment for PM_{10}.
- The portion of San Bernardino County in the MDAB is designated as moderate non-attainment.
- The small portion of the SSAB in the WEMO planning area is designated as serious non-attainment.

$PM_{2.5}$

- No part of the WEMO planning area is not in attainment.

None of the alternatives under consideration would increase emissions of the criteria pollutants. Alternative 2, the Resource Conservation Enhancement Alternative, would result in reductions of PM_{10} emissions due to active and natural restoration of closed routes. The No Action, Public Lands Access Maintenance, and Proposed Action Alternatives would result in smaller or minimal reductions in the amount of these emissions, but would not increase emissions because they would not increase miles traveled, and would not increase the mileage of disturbed soil on motorized vehicle routes. The MDAQMD report confirmed that OHV Open Areas were not a

substantial contributor to regional PM_{10} emissions. The projected growth of population and transportation on the public land areas is substantially lower than projections in the regional plans. As a result, no further conformity analysis is necessary. A formal conformity determination is not required because the No Action Alternative is currently in conformance with the SIP and all the other alternatives would be in conformance with the SIP.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For air resources, these include:

- Close the access route;
- Reroute access to another less-impacting route;
- Modify access to direct vehicular traffic to routes and areas with a lower impact;
- Harden access route;
- 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 to prevent erosion;
- Install signs; and
- Determine that no additional minimization and mitigation measure is needed based on area or site evaluation.

Residual Impacts After Implementation of Mitigation Measures

Residual impacts, in the form of pollutant emissions from the use of motorized routes and indirect and residual emissions from wind erosion in areas with soil disturbance, would continue on motorized routes even after mitigation measures were applied. The magnitude of future emissions from motorized vehicles are expected to be the same under all alternatives, as the overall mileage traveled is expected to remain the same regardless of the extent of the route network. The magnitude of indirect and residual emissions from wind erosion would be related to the mileage of routes closed under each alternative and the soil texture of closed routes. Soil texture is an indicator of the susceptibility of a soil to generate dust if disturbed by motor vehicle travel. Upon completion of closures and natural re-vegetation, dust emissions from wind erosion would be roughly proportional to the mileage and acreage of motorized routes closed under each alternative. These differences would be substantially manifest beyond the life of the project.

Rates of natural reclamation differ depending upon soil texture; within 20 years, most routes in desert environments would begin to show signs of reclamation in the absence of additional disturbance from use, but would likely remain subject to wind erosion above a natural background rate. The BLM anticipates that rate of route closures will be the same under all alternatives and that the differences would begin to be manifest over a longer timeframe.

4.2.1.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted. Two non-discretionary LUP Conformity determinations would occur as plan maintenance actions to align the CDCA Plan with recent wilderness and livestock grazing program legislation.

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 impacts to air resources. 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 air resources 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 Closed Areas.

These amendments are expected to have no adverse effect on resources, and may benefit air resources 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. The effects of these two decisions are considered nominal and will not be discussed further in this Section.

Five of the Plan Amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The current management practices associated with these specific decisions as well as any changes to motorized vehicle use in the locations specified in the decisions under the action alternatives, do have the potential to impact air resources in those locations. These impacts are relatively small as compared to the impacts common to all alternatives addressed in 4.2.1.2. Specific impacts from these amendments under the No Action Alternative are addressed in the following paragraphs.

PA III: The BLM may continue to permit competitive events where large numbers of vehicles travel at high speed. High speeds may increase fugitive dust emissions at a location or along the

course of a permitted event. These emissions may be substantial, but they will also be local and short in duration, and are similar to the effects from non-competitive organized events. Additional analysis is part of the SRP permitting process, and appropriate mitigation measures are included as terms of a permit.

Under the No Action Alternative, the overall number of competitive-use SRPs issued is not anticipated to change in the planning area. The limiting factor on the number and size of events over the last 10 years has been economic conditions determining disposable income for recreation, weather, and, in more recent years, available BLM staff and resources. Therefore, impacts to air quality across the planning area should be minimal from the designation of these routes.

PA IV: Recreation use on the Koehn Lake lakebed would remain designated as "Open" to OHV use. OHV use on Koehn Lake is relatively light, and the impacts to air quality from this use is minimal, except for potential arsenic emissions from playa dust deposited from water and air transport of arsenic-laden sediments from the Randsburg Historic Mining District. A similar potential impact from wind-borne arsenic would also continue at Cuddeback Lake (Kim et al. 2012, 2014), OHVs would continue to drive on designated routes across other lakebeds. Greater motorized vehicle use on these other dry lakebeds has the potential to cause a significant increase in fugitive dust emissions. Wind erosion worsens when salt crusts from the most recent flood event are crushed by motor vehicles exposing fine sediments under the crust to winds blustering across a playa unobstructed by surface roughness. Because Koehn, Coyote, and Chisholm Trail lakebeds are currently receiving relatively light use, the severity of impacts on the lakebeds, apart from arsenic exposure at Koehn Lake, is also low, and is not anticipated to substantially increase in the near future. Cuddeback Lake currently receives substantial use and its soil crusts are highly modified from past use. Therefore, its continued use may have a direct adverse impact on air quality, including impacts for fugitive dust with high arsenic concentrations. Future increased vehicle use on Cuddeback Lake for recreation may facilitate increase use of access routes to the lakebed that are located elsewhere in the area. The use or closure of these lakebeds would not impact sensitive receptors as they are beyond the buffer distance around receptors that this analysis uses.

PA V: 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. Now visitors are using the designated trails less as a recreational trail riding experience and more often as a travel network to go from one area to another. Additionally, BLM staff has observed a shift in people camping away from the management area to now camping closer to the suburban developments and services established around California City. The air quality impacts from this use are minimal.

PA VI: The reduced distance from 300 feet to 50 feet for SPC that is currently authorized outside of ACECs with Desert Tortoise critical habitat would limit future disturbances and allow previously disturbed areas to become re-vegetated over time, thus gradually reducing air emissions associated with fugitive dust. 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 decision would also reduce the amount of new disturbance that would occur, having a similar reduction in air emissions. The effect of these actions would be a net beneficial impact on local and regional air quality.

PA VII: The livestock grazing program under the No Action Alternative would continue to decrease in both extent and intensity. The livestock that would remain on public lands in the WEMO Planning area would create minor and declining GHG emission levels, and emissions would continue to be de minimis (MDAQMD, 1995).

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that regional emissions directly stemming from OHV travel and recreation on BLM lands for ozone, particulate matter, and VOC emissions would not change among the alternatives. Therefore, the impacts to regional air quality from all alternatives from direct emissions would be the same. As shown in Figure 3.2-3 and discussed in Section 3.2, regional PM_{10} emissions have steadily improved since 1986, including the period since the 2006 WEMO Plan. However, the locations of direct emissions would vary among the alternatives, and therefore some alternatives may have a greater adverse or beneficial effect on sensitive receptors. The mileage of routes in close proximity to sensitive receptors and residences under the No Action Alternative is presented in Table 4.2-1.

Table 4.2-1. Alternative 1 - Miles of Routes in Proximity to Sensitive Human Receptors and Nearby Residents for Air Quality Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of route within 1 mile of Sensitive Human Receptors	41.5	0	0	111.8
Miles of route within 300 feet (0.057 miles) of Residences	288.2	0	0	473.7

The analysis of impacts common to all alternatives also concluded that indirect air emissions associated with wind erosion of disturbed areas would vary among alternatives, depending on the amount of routes left open to motorized vehicles and the amount of routes closed (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 closed miles 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 the No Action Alternative, active route closures would occur as 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) there would be reductions in emissions of particulate matter from closed routes, and corresponding declines in ambient PM_{10} concentrations, as routes designated as closed are allowed to naturally re-vegetate. EPA estimates the average emission of PM_{10} wind erosion of disturbed soils as 1.7 pounds per acre per day. Based on this estimate, and an assumption that each route is 12 feet wide, the closure of 8,900 miles of routes under Alternative 1 would result in an eventual reduction of windborne

dust emissions on OHV routes of 4,016 tons/year. This would result in corresponding declines in ambient PM_{10} concentrations. Although these reductions would be beneficial, they would not substantially change the number of yearly exceedances of state or federal PM_{10} standards or change the attainment status of any air district, and much of the change that does occur would not be manifest in the reasonably foreseeable future. The reductions cited here are beyond the planning horizon of this planning project. Over the life of the project, the reductions in emissions would not vary between alternatives.

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these considerations reduce overall direct and/or indirect air emissions, or reduce the proximity of those emissions to sensitive receptors or residences. Measures such as limiting new ground disturbance in DT ACECs, vertical mulching closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 300 feet outside of DT ACECs, and limiting camping to disturbed areas adjacent to open routes, would reduce PM_{10} emissions by minimizing disturbance of currently undisturbed areas and allowing currently disturbed areas outside the DT ACECs 50-feet limits to naturally re-vegetate, 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 air quality impacts, including direct vehicle emissions and emissions in close proximity to sensitive receptors, are considered before authorizing new motorized routes.

4.2.1.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to air quality. These decisions would only define the route designation process, and the LUP 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 air resources 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 Closed Areas.

These amendments are expected to have no adverse effect on resources, and may benefit air resources by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy, regulation, and law.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be identified in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to air resources 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 impacts to air resources.

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 closure, 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.

Five of the plan amendment decisions being considered would modify on-the-ground authorization of livestock grazing and motorized vehicle use. The air quality impacts of these decisions under Alternative 2 are as follows:

PA III: Competitive 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. Additional analysis occurs as part of the SRP permitting process, and appropriate mitigation measures are included.

As pointed out in the No Action Alternative, the overall number of SRP permits are not anticipated to increase—the limiting factor on the number of events is currently a function of seasonal availability, 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. Some increase may occur however on any particular weekend, and designating the "C" routes does not authorize individual SRP events to use these routes. Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. This decision would reduce local emissions associated with motorized 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. Therefore, this decision would not have a direct adverse or beneficial impact on regional air quality.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on local or regional air quality.

PA IV: Motorized vehicle use of dry lake beds has the potential to increase fugitive dust emissions. 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 motor vehicles exposing fine sediments under the crust to winds blustering across a playa unobstructed by surface roughness. The closure of Koehn lakebed under Alternative 2 would reduce local emissions associated with motorized use of that area over the long term, and would therefore have a net beneficial impact on local air quality. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on air quality by increasing the recreational use of routes in other areas. While this decision may reduce emissions in a local area, it would not have a direct adverse or beneficial impact on regional air quality.

PA V: 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, this decision would not have a direct adverse or beneficial impact on regional air quality.

PA VI: Limiting stopping and parking to previously disturbed areas within 50 feet of the route centerline, both inside and outside of DT ACECs would result in the same impacts as the No Action Alternative. 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 allowing previously disturbed areas to become re-vegetated over time, thus gradually reducing air emissions associated with wind erosion. 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 decision would also reduce the amount of new disturbance that would occur, having a similar reduction in air emissions. The effect of these actions would be a net beneficial impact on local and regional air quality.

PA VII: 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. Again, direct and indirect impacts to air quality from grazing operations would continue to be de minimis (MDAQMD 1995).

Alternative 2 Route Designation

Section 4.2.1.2 described the general impacts to air quality that are common to all alternatives. That analysis concluded that regional direct emissions from motorized vehicles would not change among the alternatives, and therefore the impacts to regional air quality from all alternatives from direct emissions would be the same. However, the locations of those direct emissions would vary among the alternatives, and therefore some alternatives may have a greater adverse or beneficial effect on sensitive receptors. The mileage of routes in close proximity to sensitive receptors and residences under Alternative 2 is presented in Table 4.2-2.

Table 4.2-2. Alternative 2 - Miles of Routes in Proximity to Sensitive Human Receptors and Nearby Residents for Air Quality Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of route within 1 mile of Sensitive Human Receptors	36.6	8.5	0	108.1
Miles of route within 300 feet (0.057 miles) of Residences	275.2	2.2	0	484.6

The analysis in Section 4.2.1.2 also concluded that indirect air emissions associated with wind erosion of disturbed areas would vary among alternatives, depending on the amount of routes left open to motorized vehicles and the amount of routes closed (designated as transportation linear disturbances). Closed routes would be naturally re-vegetated by nature and scheduled for route rehabilitation actions, as needed. EPA estimates the average emission of PM_{10} wind erosion of disturbed soils as 1.7 pounds per acre per day. Based on this estimate, and an assumption that each route is 12 feet wide, the closure of 10,718 miles of routes under Alternative 2 would result in an eventual reduction of PM_{10} emissions of 4,836 tons/year. This would result in corresponding declines in ambient PM_{10} concentrations. Although these reductions would be beneficial, they would not be large enough to substantially change the number of yearly exceedances of state or federal PM_{10} standards or change the attainment status of any air district.

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Whether they were applied during the route designation process or are mitigation measures, these measures would reduce overall direct and/or indirect air emissions, or reduce the proximity of those emissions to sensitive receptors or residences. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, limiting permitted events to OHV Open Areas only, and implementing stopping and parking limits of 50 feet from route centerlines, and further limiting camping in disturbed areas adjacent to open routes to within 50 feet of centerline, would reduce PM_{10} emissions by minimizing

disturbance of currently undisturbed areas and allowing currently disturbed areas outside these limits to naturally re-vegetate. Requirements for plan amendments and NEPA reviews of future major route network changes would ensure that specific air quality impacts, including direct vehicle emissions and emissions in close proximity to sensitive receptors, are considered before authorizing new motorized routes.

4.2.1.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on air quality is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered would modify on-the-ground authorization of livestock grazing and motorized vehicle use. The air quality impacts of these decisions under Alternative 3 are as follows:

PA III: Competitive 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. It is anticipated that the overall number of SRP permits will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to air quality across the planning area from the designation of these routes.

Under Alternative 3, the: "C" route network available for competitive motorized 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.

The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. There are no beneficial impacts from the corridor deletion, because the corridor has not been used for a competitive event in over 20 years.

In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. 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.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. Motorized vehicle use of dry lake beds has the potential to increase fugitive dust emissions. 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 motor vehicles exposing fine sediments under the crust to winds blustering across a playa unobstructed by surface roughness. 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 a local area, and may have an adverse impact on regional air quality.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to 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: 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. As discussed for Alternative 2, this reduction would result in allowing previously disturbed areas to become re-vegetated over time, thus gradually reducing air emissions associated with wind erosion. This decision would also reduce the amount of new disturbance that would occur, having a similar reduction in air emissions. 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 Alternative 3 would allow for a wider area of disturbance (100 feet versus 50 feet).

PA VII: Under Alternative 3, 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 Alternative 3 would result in the same grazing operations within the Planning Area.

Alternative 3 Route Designation

Section 4.2.1.2 described the general impacts to air quality that are common to all alternatives. That analysis concluded that regional direct emissions from motorized vehicles would not change among the alternatives, and therefore the impacts to regional air quality from all alternatives from direct emissions would be the same. However, the locations of those direct

emissions would vary among the alternatives, and therefore some alternatives may have a greater adverse or beneficial effect on sensitive receptors. The mileage of routes in close proximity to sensitive receptors and residences under Alternative 3 is presented in Table 4.2-3.

Table 4.2-3. Alternative 3 - Miles of Routes in Proximity to Sensitive Human Receptors and Nearby Residents for Air Quality Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of route within 1 mile of Sensitive Human Receptors	98.55	7.3	0	47.5
Miles of route within 300 feet (0.057 miles) of Residences	673.6	3.1	0.7	84.5

The analysis in Section 4.2.1.2 also concluded that indirect air emissions associated with wind erosion of disturbed areas would vary among alternatives, depending on the amount of routes left open to motorized vehicles and the amount of routes closed (designated as transportation linear disturbances). Closed routes would be reclaimed by nature and scheduled for route rehabilitation actions, as needed. EPA estimates the average emission of PM_{10} wind erosion of disturbed soils as 1.7 pounds per acre per day. Based on this estimate, and an assumption that each route is 12 feet wide, the closure of 4,978 miles of routes under Alternative 3 would result in an eventual reduction of PM_{10} emissions of 2,246 tons/year. This would result in corresponding declines in ambient PM_{10} concentrations. Although these reductions would be beneficial, they would not be large enough to substantially change the number of yearly exceedances of state or federal PM_{10} standards or change the attainment status of any air district.

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce overall direct and/or indirect air emissions, or to reduce the proximity of those emissions to sensitive receptors or residences. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, limiting permitted events to OHV Open Areas only, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce indirect PM_{10} emissions by minimizing disturbance of currently undisturbed areas. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific air quality impacts, including direct vehicle emissions and emissions in close proximity to sensitive receptors, are considered before authorizing new motorized routes.

4.2.1.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. These decisions would be the same under Alternative 4 as for Alternatives 2 and 3 with one exception, and therefore effect of these decisions on air quality is the same as discussed for Alternative 2. The exception is for the designation of TMAs, these decisions would include nine TMAs under Alternative 4 rather than eight, as for Alternatives 2 and 3. The effect of all these decisions on air resources is the same as discussed for Alternative 2, essentially nominal.

Five of the plan amendment decisions being considered would modify on-the-ground authorization of livestock grazing and motorized vehicle use. The air quality impacts of these decisions under Alternative 4 are as follows:

PA III: Competitive 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. It is anticipated that the overall number of SRP permits will not increase. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to air quality across the planning area from the designation of these routes.

Under Alternative 4, 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 motorized 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 Alternatives 1 and 2, but less extensive as Alternative 3. Likewise, the localized air quality impacts from Alternative 4 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 Alternative 4 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: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Motorized vehicle use of dry lake beds has the potential to increase fugitive dust emissions. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. In general, this decision is likely to increase local emissions on Cuddeback, Coyote, and Chisholm Trail Lake lakebeds, having a direct, adverse impact in those local areas, as identified in Alternative 3, by potentially transferring recreational use to these lakebed areas which are more prone to generating fugitive dust emissions, due to finer soil grain size.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. As indicated under Alternative 3, eliminating the permit requirement 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 planning area routes, 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: Alternative 4 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. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VII: Under Alternative 4, 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. Alternative 4 would result in approximately the same emission levels that would be generated from facilitating the remaining grazing operations within the West Mojave Planning Area under the No Action Alternative. Again, direct and indirect impacts to air quality from the remaining grazing operations would continue to be de minimis (MDAQMD, 1995).

Alternative 4 Route Designation

Section 4.2.1.2 described the general impacts to air quality that are common to all alternatives. That analysis concluded that regional direct emissions from motorized vehicles would not change among the alternatives, and therefore the impacts to regional air quality from all alternatives from direct emissions would be the same. However, the locations of those direct emissions would vary among the alternatives, and therefore some alternatives may have a greater adverse or beneficial effect on sensitive receptors. The mileage of routes in close proximity to sensitive receptors and residences under Alternative 4 is presented in Table 4.2-4.

Table 4.2-4. Alternative 4 - Miles of Routes in Proximity to Sensitive Human Receptors and Nearby Residents for Air Quality Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of route within 1 mile of Sensitive Human Receptors	48.9	2.4	0	102.0
Miles of route within 300 feet (0.057 miles) of Residences	304.7	2.0	1.1	453.7

The analysis in Section 4.2.1.2 also concluded that indirect air emissions associated with wind erosion of disturbed areas would vary among alternatives, depending on the amount of routes left open to motorized vehicles and the amount of routes closed (designated as transportation linear disturbances). Closed routes would be naturally re-vegetated over the long-term, and would also be scheduled for route rehabilitation actions, as needed. EPA estimates the average emission of PM_{10} wind erosion of disturbed soils as 1.7 pounds per acre per day. Based on this estimate, and an assumption that each route is 12 feet wide, the closure of 9,507 miles of routes under Alternative 4 would result in an eventual reduction of PM_{10} emissions of 4,290 tons/year. This would result in corresponding declines in ambient PM_{10} concentrations. Although these reductions would be beneficial, they would not be large enough to substantially change the number of yearly exceedances of state or federal PM_{10} standards or change the attainment status of any air district.

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce overall direct and/or indirect air emissions, or to reduce the proximity of those emissions to sensitive receptors or residences. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, limiting permitted events to OHV Open Areas only, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce indirect PM_{10} emissions by minimizing disturbance of currently undisturbed areas. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific air quality impacts, including direct vehicle emissions and emissions in close proximity to sensitive receptors, are considered before authorizing new motorized routes.

4.2.2 Climate Change

4.2.2.1 Introduction

Affected Environment Summary

The effects of climate change to BLM resources can be widespread, but Federal and State policies, as defined in the Regulatory Framework section in Chapter 3 Climate Change, provides guidance on the aspects and approaches to evaluating climate change effects. The 2005 WEMO EIS did not specifically analyze the global climate change 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 climate change. But, to provide current science and information to support management decisions, additional climate change analysis has been provided for this planning effort. Chapter 3 also describes the sources, trends, and effects of the observed and projected climate changes on key aspects of the Affected Environment, whereas this section evaluates the effects of proposed alternatives and activities to global warming (greenhouse gas emissions and carbon sequestration), and effects to climate adaptation opportunities. The other resource sections such as Air Quality, Soils, and Wildlife may have additional discussions of more specific climate change impacts to those resources and are summarized, as appropriate, in this section.

Methodology

The WEMO area issues, indicators, and methods for climate change are as follows:

1. 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?
2. What are the climate 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 climate change and climate adaptation 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 climate change, 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 climate change.
- 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 Key Issues

4.2.2.2.1 Issue 1: Climate Changes to the 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 actions and alternatives. The effects of climate change to the environment, and BLM resources, are a cumulative effect and not an environmental consequence of the proposed actions. No additional analysis of climate effects to the environment is provided in this section.

4.2.2.2.2 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?

Methodology

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 the BLM's opportunities to utilize the climate adaptation options in the future.

Impacts Common to All Alternatives

Air Quality (Greenhouse Gas)

None of the proposed actions or alternatives is expected to preclude BLM climate adaptation opportunities for air quality resources. BLM climate adaptation goals 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 related GHG emissions or losses to carbon storage productivity. These impacts are defined under the Climate Change Issue #3 in both Chapters 3 and 4. As mentioned in those sections, the differences in emissions between alternatives was insubstantial, but to meet long-term GHG reductions goals, any increase in GHG emissions from travel management activities or grazing, without mitigation or offset, would be an impact to meeting climate adaptation goals for 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 reduction goals. 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 climate adaptation goals. Although detailed information was not available to quantify travel route GHG emissions, none of the alternatives would preclude future implementation of GHG climate adaptation goals.

Geology, Soil, and Water Resources

None of the proposed actions or alternatives is expected preclude BLM climate adaptation opportunities for geologic, soil, or water resources. BLM climate adaptation goals 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 approaches to resist and respond to climate change and project-level analysis and conformity can also help guide projects in supporting climate adaptation.

BLM climate adaptation goals 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 goals for existing conditions. Alternatives that overlay areas projected to have high value carbon storage productivity may affect the climate adaptation options, but project-level analysis and/or future plan amendments will likely address these issues.

Carbon sequestration productivity could be impacted by the grazing activities outlined within plan alternatives, if environmental conditions continue to decline and livestock grazing were to continue in vulnerable soil areas, thus damaging and degrading existing soil functions, or if grazing continues in areas projected to be effective carbon storage areas are managed without soil (carbon sequestration) minimization and mitigation measures. Although the grazing trends are declining in the area, ongoing management is adaptive to environmental conditions. It is unlikely that grazing impacts under any of the alternatives would significantly affect this climate adaptation goal.

Biological Resources

Any new travel routes established in close proximity to important climate refugia could preclude BLM 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 climate change (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 actions 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 climate change. 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 proposed actions or alternatives is expected to preclude BLM 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 proposed actions or alternatives is expected to preclude BLM 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 access to new areas also being impacted by climate change (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 proposed actions or alternatives is expected to preclude BLM 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 proposed actions or alternatives is expected to preclude BLM 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 proposed actions or alternatives is expected to preclude BLM 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.

4.2.2.2.3 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 wide variety of BLM activities produce greenhouse gases, but the absence of reliable data limits the BLM's ability to estimate proposed plan emissions. Attributing planning and project effects to global warming is difficult to measure. Federal policies state that quantifying the action's projected GHG emissions and, when appropriate, the potential changes in carbon

sequestration, are used as a proxy for assessing the climate change impacts of a proposed action. At the plan level, GHG emissions are evaluated for conformance with related plans and regulations. Subsection 3.2.7.2 lists the federal and state plans and regulations applicable to GHG emissions.

Methodology

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 climate change 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 climate change 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 moths (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.

Impacts Common to All 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. These plan amendment decisions would not designate routes or authorize on-the-ground actions and therefore they would not have direct impacts to global climate change. These decisions would

only define the route designation process or framework under which future on-the-ground actions are considered.

The other five plan amendment decisions being considered would result in changes in on-the-ground use of motorized vehicles. These include modification of "C" routes, motorized use of dry lakes, the need for permits for motorized use in the Rand Mountains-Fremont Valley Management Area, allowable stopping, parking, and camping distances, and changes in grazing allotments.

Motorized vehicle 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.

Chapter 2 discusses the general resource protection and motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed 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 motorized travel, mechanized travel and non-mechanized travel. The motorized travel will likely have more GHG emissions than the other categories which are mostly upstream impacts from traveling to and from parking areas. Motorized 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 CO_2 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 motorized vehicles 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 motorized transportation. Quantifying indirect GHG emissions from potential route uses is not possible. The motorized vehicle 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 motorized vehicle use, and therefore no effect on associated GHG emissions. The volume of motorized vehicle 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. Closure 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 closed, recreation users are likely to use other nearby open routes for the same purpose. Closure or authorization of motorized routes can affect the density of motorized vehicle 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. In any case, the potential for increased GHG emissions from a particular authorization for a project, and/or the access 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 motorized vehicles are not discussed further for the individual alternatives.

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.

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.

Motorized vehicle use can also impact carbon sequestration by the removal of vegetation and biological soil crusts, which act to uptake carbon dioxide (CO_2) directly from the atmosphere. The removal of biological soil crusts is essentially irreversible. 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 to the crypotobiotic 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 (CO_2) emissions of 1.48 metric tons of CO_2 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 climate changes 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 sited 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. Climate changes in 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 (closed routes), 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 CO_2, resulting in an overall beneficial impact to global climate change. Because routes are anticipated to be re-vegetated at the same rate under all alternatives, the uptake of CO_2 is not anticipated to vary among alternatives, in the short term.

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
Alternative 1 (No Action)	Alternative 1 (No Action) 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. Alternative 1 grazing emissions may be slightly higher than Alternatives 2, 3 and 4. 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.
Alternative 2	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. The magnitude of soil erosion and compaction from grazing, which could impact carbon sequestration processes, would be lower than other alternatives.
Alternative 3	The Alternative 3 greenhouse gas emissions resulting from grazing would be higher than Alternative 2 and fairly similar to Alternatives 1 and 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. The magnitude of soil erosion and compaction from grazing, which could impact carbon sequestration processes, would be higher than Alternative 2 and similar to Alternatives 1 and 4.
Alternative 4 (Proposed Action)	The Alternative 4 greenhouse gas emissions resulting from grazing would be higher than Alternative 2 and fairly similar to Alternatives 1 and 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. The magnitude of soil erosion and compaction from grazing, which could impact carbon sequestration processes, would be higher than Alternative 2 and similar to Alternatives 1 and 3.

Resource-Specific Minimization and Mitigation Measures

Because no adverse direct or indirect impacts to global climate change were identified, no resource-specific minimization or mitigation measures were developed for GHG emissions in particular.

Residual Impacts After Implementation of Mitigation Measures

Because no incremental adverse impacts to global climate change were identified, there would be no residual impacts.

4.3 Soil and Water Resources

4.3.1 Soil Resources

4.3.1.1 Introduction

Affected Environment Summary

Section 3.3 describes the soil resources in the planning area. Soils in the desert function to support the ecology of the local area, as well as global carbon balance. With respect to ecology, soil resources form the habitat within which vegetation grows, and in which wildlife finds cover. With respect to carbon balance, soils not only support carbon sequestration in vegetation and biological soil crusts, but in inorganic form as well. The characteristics of soils which support these functions include grain size and texture, mineral composition, level of compaction, fertility, vegetation cover, presence of biological soil crusts, and water content. Any activities, including motorized vehicle use and livestock grazing, which may modify soil characteristics have the potential to impact resources, including the ecological and carbon sequestration functions that are supported by the soils.

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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the location of each route with respect to soils that were determined to be potentially prone to erosion. This included areas in which routes were present on slopes greater than 10 percent, as well as specific locations where soil erosion was known to occur.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact erosion-prone soils, across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.3.1.2 below.

- Addressed cumulative impacts of both OHV use and grazing on soils, is provided in Section 4.15 below.

4.3.1.2 Impacts Common to All Alternatives

The direct sources of effects on soil resources from motorized vehicle 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 3.3.1 Soil and Geology. 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 motor vehicle routes, developed and undeveloped camping areas, sites for livestock watering, and mine operation sites. A far-reaching impact from vehicular 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 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-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 motor vehicles 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 motorized vehicular driving or from animal trampling at sites for range improvements to benefit domestic livestock, such as watering facilities or holding corrals. Motorized 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. Motorized vehicle 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 vehicular traffic and the resulting shortened residence time is that flooding becomes more frequent.

De-compaction and Erosion

Motorized vehicle 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 21 to 24 km 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 vehicular 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. 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 12 km 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 vehicular 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 (TMAs) 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 those TMAs.

Areas within the WEMO Planning Area like TMA 4 are highly susceptible to wind erosion based on soil textures with a high sand component. This also applies to large portions of TMA 2, TMA 8 and TMA 3. These areas maybe the least suited to vehicle use based on soil properties.

Key routes within these TMAs that 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. Owens Lake is, for example, one arsenic hotspot. Areas with motorized vehicular 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

Because motorized vehicle use, including OHVs and livestock watering and holding facilities causes soil compaction, mechanical displacement, and removal of stabilizing materials, any change in the amount of motorized vehicle 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 motorized vehicle use in places that have not previously been subjected to motorized vehicle use could result in either compaction or de-compaction, depending on the characteristics of the soil, the slope, the type of motorized vehicle, and the manner in which the vehicle is used. Continued motorized vehicle and livestock use in already compacted areas may not lead to additional compaction, but it would ensure that natural recovery does not occur. Continued motorized vehicle 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 motorized vehicle and livestock use would lead, over time, to restoration of original soil conditions, which would be a beneficial effect. Closure of routes to motorized vehicles and grazing allotments 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 PM_{10} 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 motorized vehicle use, or are closed by being 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 motorized vehicle use is allowed, as well as specific locations for motorized vehicle 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 motorized 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 motorized routes would only be designated as a result of new requests for authorized uses, and closure of existing routes 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed 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 route closure 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 motorized use. These measures differ among the alternatives, and are therefore discussed in more detail in Sections 4.3.1.3, 4.3.1.4, 4.3.1.5, and 4.3.1.6 below.

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 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 soil crusts because the soils are dry. These simple crusts would likely recover within days once the rain returns 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).

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and mitigation measures that may be applied for each route during implementation of the WMRNP, were described in Table 2.1-4. For soil resources, these include:

- Select alternative route to minimize off-route disturbance;
- Implement seasonal restrictions, designated as motorized only by permit, or designate closure 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 route;
- Install educational information such as signs;
- Determination 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.

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 motorized vehicle use, and following closure of routes. Although continued motorized vehicle 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 closure of routes in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken. If routes are closed, 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.

4.3.1.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to soil resources. These decisions would only define the route designation process or framework under which future on-the-ground actions are considered. Part of that framework is consideration of soils that are well-suited and ill-suited for being part of a designated route system for diverse reasons such as topography, erosion rates, hazards to public health, associated sensitive wildlife species, and other features taken up individually below.

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 soil resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and

- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit soil resources 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Changes to motorized vehicle use in the locations specified in these decisions under the action alternatives do have the potential to impact soil resources in those locations. However, the routes in the Rand-Fremont system and 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.

Livestock Grazing: Under the No Action Alternative, 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.

Alternative 1 Route Designation

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 PM_{10} emissions evaluated in the air quality analysis.

The primary direct impact on soils associated with motorized vehicle 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 motorized 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 the No Action Alternative is presented in Table 4.3-1.

Table 4.3-1. Alternative 1 – Mileage of Routes in Areas with Potential for Soil Loss

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes in Areas with Greater than 10 Percent Slope	1,112.3	0.3	7.4	2,550.0
Highly Susceptible to Wind Erosion (WEG 1 and 2)	2,231.1	0.3	1.1	4,098.9
High Erodibility Potential (HSG D)	1,623.1	0.3	1.1	2,991.8

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. 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 closed routes, 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 motorized routes.

4.3.1.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to soil resources. 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 soil resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit soil resources by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to soil resources 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 impacts to soil resources. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The soil resource impacts of these decisions under Alternative 2 are as follows:

PA III: Competitive events may authorize large numbers of vehicles traveling at high speed. These events may potentially increase soil compaction and erosion in a specific area of the event. Problems stemming from increased water runoff after the event(s) may cause excessive rilling and gullying. The BLM may have to maintain, at higher cost, "C" routes more frequently than surrounding designated routes. The BLM anticipates that the overall number of SRP applications will not increase. Rather, it is likely that several applicants may request to use "C" routes in addition to the adjacent Open Area for courses. There should be no measurable increase in the number of OHV riders using public land in the area. Additionally, designating "C" routes does not authorize individual SRP events to use these routes. Further analysis of impacts to soil resources will be part of the SRP permitting process. No direct impacts to soil resources would stem from designating "C" routes.

Alternative 2 would institute a seasonal restriction on the use of the currently designated "C" routes for competitive motorized events managed under conditions of a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January only. 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.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the single remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would no longer be available for OHV use under Alternative 2. The elimination of the Johnson Valley to Parker event may reduce soil compaction and other soil disturbances in that corridor. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on soil resources.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. In general, dry lakebeds are flat and therefore are not prone to soil erosion, so motorized 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 motor vehicles exposing fine sediments under the crust to winds blustering across a playa unobstructed by surface roughness. Therefore, closure of Koehn dry lake would reduce local air emissions associated with wind erosion in that area. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on soil resources by increasing the recreational use of routes in sensitive soil areas.

PA V: 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; therefore, Alternative 2 would have no direct or indirect impact to soil resources.

PA VI: 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 plan amendment may have beneficial impacts by reducing motorized travel on undisturbed areas outside of designated routes, but the beneficial impact is expected to be small.

PA VII: Under this alternative, 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).

Alternative 2 Route Designation

The mileage of routes associated with those areas that are deemed to have the potential for soil loss under Alternative 2 is presented in Table 4.3-2.

Table 4.3-2. Alternative 2 - Mileage of Routes in Areas with Potential for Soil Loss

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes in Areas with Greater than 10 Percent Slope	999.1	10.7	9.9	2,650.9
Highly Susceptible to Wind Erosion (WEG 1 and 2)	1,918.2	4.6	5.1	4,403.3
High Erodibility Potential (HSG D)	1,315.6	11.2	6.5	3,285.1

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures to be applied under Alternative 2. Many of these measures would act to reduce soil compaction, disturbance, or erosion that lead to direct soil loss or indirect adverse impacts to other resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, limiting permitted events to OHV Open Areas only, and implementing stopping and parking limits of 50 feet from route centerlines would 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. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific soil resource impacts, including direct soil loss, as well as compaction, disturbance, and erosion leading to indirect impacts to other resources, are considered before authorizing new motorized routes.

4.3.1.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on soil resources is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The soil resource impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. For the "C" routes northeast of the Spangler Hills Open Area, this decision would result in the potential for increased soil erosion on 71.6 miles of routes. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known, the soil resource impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. In general, the lakebeds are flat, and therefore are not prone to soil erosion, so motorized use of vehicles on the lakebeds is not expected to have soil resource impacts. 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 motor vehicles exposing fine sediments under the crust to winds blustering across a playa unobstructed by surface roughness. Therefore, this decision could have an adverse effect on soil resources on the lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. There are no soils in this area which are prone to erosion. Therefore, eliminating the permit requirement would not have any impact on soil resources.

PA VI: 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). 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 this plan amendment decision may have beneficial impacts by reducing

motorized travel on undisturbed areas outside of designated routes, the beneficial impact is expected to be limited.

PA VII: Under Alternative 3, 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. 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).

Alternative 3 Route Designation

The mileage of routes associated with those areas that are deemed to have the potential for soil loss under Alternative 3 is presented in Table 4.3-3.

Table 4.3-3. Alternative 3 - Mileage of Routes in Areas with Potential for Soil Loss

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes in Areas with Greater than 10 Percent Slope	2,380.8	16.7	59.7	1,212.8
Highly Susceptible to Wind Erosion (WEG 1 and 2)	4,345.1	2.4	27.1	1,956.5
High Erodibility Potential (HSG D)	2,971.6	37.8	23.5	1,583.6

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce soil compaction, disturbance, or erosion that lead to direct soil loss or indirect adverse impacts to other resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, limiting permitted events to OHV Open Areas only, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would 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. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific soil resource impacts, including direct soil loss, as well as compaction, disturbance, and erosion leading to indirect impacts to other resources, are considered before authorizing new motorized routes.

4.3.1.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on soil resources is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 soil resources. However, this decision would make it easier for BLM to consider soil resource impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on soil resources.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The soil resource impacts of these decisions under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. Alternative 4 would allow for a potential increase in erosion on 57.9 miles of routes. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The soil resource impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VII: Under Alternative 4, 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. 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).

Alternative 4 Route Designation

The mileage of routes associated with those areas that are deemed to have the potential for soil loss under Alternative 4 is presented in Table 4.3-4.

Table 4.3-4. Alternative 4 - Mileage of Routes in Areas with Potential for Soil Loss

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes in Areas with Greater than 10 Percent Slope	1,241.2	33.6	56.6	2,338.6
Highly Susceptible to Wind Erosion (WEG 1 and 2)	2,364.1	5.6	20.2	3,940.8
High Erodibility Potential (HSG D)	1,673.7	38.6	20.7	2,883.9

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce soil compaction, disturbance, or erosion that lead to direct soil loss or indirect adverse impacts to other resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, limiting permitted events to OHV Open Areas only, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would 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. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific soil resource impacts, including direct soil loss, as well as compaction, disturbance, and erosion leading to indirect impacts to other resources, are considered before authorizing new motorized routes.

4.3.2 Water Resources

4.3.2.1 Introduction

Affected Environment Summary

Section 3.3 describes the water resources in the planning area, including groundwater, surface water, and riparian areas. The planning area is very arid, with limited precipitation and few surface water bodies. Nearly all developed water sources in the area are accessed from groundwater, and much of the groundwater in the regional aquifers outside of the Mojave River floodplain is not recharged by current precipitation. Most of the biological resources in the area, including state or federally listed and BLM sensitive species, are dependent upon the presence of groundwater either directly or for their habitat. The only prominent surface water body in the planning area is the Mojave River, which originates near the southern boundary of the planning area. Most surface water channels in the area are ephemeral, and even the above ground flow of the Mojave River is intermittent in most places. Perennial flows occur only near Victorville, in the vicinity of Camp Cady, and in Afton Canyon.

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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the location of each route with respect to water bodies and desert washes.
- Conducted the evaluation, and quantified the miles of motorized routes in desert washes across four alternative route networks ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.3.2.2 below.

4.3.2.2 Impacts Common to All Alternatives

Water quality impacts associated with motorized vehicle 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 discussed in Section 4.3.1. Compaction of soils associated with motorized vehicle and livestock use can lead to increased storm water runoff rates which, in turn, can have increased erosional potential. In

addition, motorized vehicle 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.

Motorized vehicle 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, motorized vehicles 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed 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 closing routes 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. These minimization and mitigation measures differ among the alternatives, and are therefore discussed in more detail in Sections 4.3.2.3, 4.3.2.4, 4.3.2.5, and 4.3.2.6 below.

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. Most developed water sources have been fenced and the water piped to a trough to protect the sources from livestock impacts to soils, vegetation and limit the release of fecal coliform. The sampling of chemical constituents is typically not occurring 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. There is some level of de-watering from spring developments and the pumping of ground water in the form of wells for livestock use. This indirect impact has not been quantified but can be substantial over long periods of time.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For water resources associated with desert washes, these include:

- Re-align route to avoid environmentally sensitive area;
- Install barriers and maintain existing barriers;
- Remove attractants;
- Install educational information such as signs;
- Install step-over;
- Install fencing;
- Seasonal or complete closure;
- Monitor the route for signs of increasing impacts to a sensitive resource;
- Determination that no additional minimization or mitigation measure is needed based on site evaluation; and
- Exclude livestock by fencing unprotected natural springs and other natural sources to protect and maintain water quality where feasible.

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 motorized vehicle use, and following closure of routes. Motorized vehicle use in desert washes would continue to create the potential for erosion of those areas. Closure of routes in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.3.2.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to water resources. 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 water resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit water resources 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Changes to motorized vehicle use in the locations specified in these decisions under the action alternatives do have the potential to impact water resources in those locations. However, no water resources are found along the current designated "C" routes or the designated Rand-Fremont routes system; therefore, no impacts to water resources are anticipated as a result of the No Action Alternative.

Livestock grazing and native wildlife can have a direct, negative impact to water quality as discussed above in Section 4.3.2.2, Impacts Common to All Alternatives.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that motorized vehicles 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 the No Action Alternative is presented in Table 4.3-5.

Table 4.3-5. Alternative 1 - Miles of Routes in Proximity to Desert Washes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Parallel to or Predominantly in a Wash	281.0	0	0	234.0

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. 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 closed routes, 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, motorized vehicle use in washes is currently permitted under the No Action Alternative. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific water quality impacts are considered before authorizing new motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect and maintain water quality where feasible.

4.3.2.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to water resources. 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 water resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit water resources by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to water resources 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 impacts to water resources. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The water resource impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to water resources.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. The seasonal limitations on "C" routes may reduce their use for motorized events, and thus have localized beneficial impacts on water resources in those areas.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. The elimination of the Johnson Valley to Parker event may reduce soil disturbance and erosion that occurs in that area. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not

anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on water resources.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail 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 motorized vehicles during times when they are flooded. As a result, motorized use of vehicles on the lakebeds is not expected to have water resource impacts. Therefore, this decision would not have any effect on water resources on the lakebeds. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on water resources by increasing the recreational use of routes in desert washes.

PA V: No water resources are found along the designated Rand-Fremont routes system; therefore, no impacts to water resources are anticipated as a result of Alternative 2.

PA VI: 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 the potential for erosion that could impact water quality. This decision would also reduce the amount of new disturbance that would occur in desert washes, having a similar reduction in water quality impacts. The effect of these actions would be a net beneficial impact on water resources.

PA VII: Under this alternative, on-going but localized direct impacts to water resources would continue at congregation areas 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.

Alternative 2 Route Designation

Section 4.3.2.2 described the general impacts to water resources that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on surface water quality, especially if disturbance or releases occur in close proximity to water bodies. The mileage of routes associated with desert washes under Alternative 2 is presented in Table 4.3-6.

Table 4.3-6. Alternative 2 - Miles of Routes in Proximity to Desert Washes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Parallel to or Predominantly in a Wash	202.4	0.2	1.2	311.2

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of 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 closed routes, and implementing stopping and parking limits of 50 feet from route centerlines would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for water quality impacts. In addition, Alternative 2 would consider motorized vehicle use in washes on a case-by-case basis, as opposed to allowing motorized vehicles in all washes, which is currently permitted under the No Action Alternative. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific water quality impacts are considered before authorizing new motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect and maintain water quality where feasible.

4.3.2.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on water quality is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The water quality impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. There are no

water resources associated with these areas, so the plan amendment would not have any adverse impacts to water resources. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the water quality impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. 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 motorized vehicles during times when they are flooded. As a result, motorized use of vehicles on the lakebeds is not expected to have water resource impacts. Therefore, this decision would not have any effect on water resources on the lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. There are no water resources present in this area. Therefore, eliminating the permit requirement would not have any impact on water resources.

PA VI: 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 the potential for erosion that could impact water quality. This decision would also reduce the amount of new disturbance that would occur in desert washes, having a similar reduction in water quality impacts. The effect of these actions would be a net beneficial impact on water resources.

PA VII: Under Alternative 3, on-going but localized direct impacts to water resources would continue at congregation areas in active grazing allotments.

Alternative 3 Route Designation

Section 4.3.2.2 described the general impacts to water resources that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on surface water quality, especially if disturbance or releases occur in close proximity to water bodies. The mileage of routes associated with desert washes under Alternative 3 is presented in Table 4.3-7.

Table 4.3-7. Alternative 3 - Miles of Routes in Proximity to Desert Washes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Parallel to or Predominantly in a Wash	397.8	0.4	1.2	115.6

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of 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 closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for water quality impacts. In addition, Alternative 3 would consider motorized vehicle use in washes on a case-by-case basis, as opposed to allowing motorized vehicles in all washes, which is currently permitted under the No Action Alternative. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific water quality impacts are considered before authorizing new motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect and maintain water quality where feasible.

4.3.2.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on water resources is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 water resources. However, this decision would make it easier for BLM to consider water quality impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on water resources.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The water resource impacts of these decisions under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. There are no water resources associated with these areas, so this decision would not have any adverse impacts to water resources. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The water resource impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles. 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 motorized vehicles during times when they are flooded. As a result, motorized use of vehicles on the lakebeds is not expected to have water resource impacts.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VII: Under Alternative 4, on-going but localized direct impacts to water resources would continue at congregation areas in active grazing allotments.

Alternative 4 Route Designation

Section 4.3.2.2 described the general impacts to water resources that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on surface water quality, especially if disturbance or releases occur in close proximity to water bodies. The mileage of routes associated with desert washes under Alternative 4 is presented in Table 4.3-8.

Table 4.3-8. Alternative 4 - Miles of Routes in Proximity to Desert Washes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Parallel to or Predominantly in a Wash	279.6	5.0	1.1	207.0

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of 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 closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for water quality impacts. In addition, Alternative 3 would consider motorized vehicle use in washes on a case-by-case basis, as opposed to allowing motorized vehicles in all washes, which is currently permitted under the No Action Alternative. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific water quality impacts are considered before authorizing new motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect and maintain water quality where feasible.

4.3.3 Riparian Areas

4.3.3.1 Introduction

Affected Environment Summary

Section 3.3 describes the riparian areas in the planning area. Aquatic wetland and riparian habitat within the planning area is primarily located along the Mojave River and along the Sierra Mountain Front. Springs primarily occur in the mountains, and most of them 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.

The riparian areas in the planning area, including the results of Proper Functioning Condition (PFC) assessments performed in 2012 through 2014, are listed in Tables 3.3-2 and 3.3-3. Wetland and riparian habitats can be rated under PFC assessments as at-risk or non-functional due to vehicle use, camping, parking, route proliferation, and indirect impacts that may be associated with casual access by vehicles, exploratory mining activity, or distribution of riparian obligate invasive plants (*Tamarix* sp., *Arrundo donax*, etc.). Of the riparian areas, two springs within the Rattlesnake Canyon Grazing Allotment were rated as “functioning at risk” due to road encroachment.

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 flowing 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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the location of each route with respect to the locations of all riparian areas and springs inventoried in the planning area.
- 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.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact riparian areas and springs across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.3.3.2 below.
- BLM addressed cumulative impacts of both OHV use and grazing on riparian areas and springs, provided in Section 4.15 below.

4.3.3.2 Impacts Common to All Alternatives

Disturbance of 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 motorized routes 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 vehicular access and overnight activities are occurring, taking into consideration access to at-risk or non-functional wetlands based on PFC criteria. PFC assessments are on-going within the planning area. The vast majority of at-risk or non-functional 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.

Chapter 2 discusses the general resource protection and motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed 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 closing routes 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. These minimization and mitigation measures differ among the alternatives, and are therefore discussed in more detail in Sections 4.3.3.3, 4.3.3.4, 4.3.3.5, and 4.3.3.6 below.

If sensitive, riparian habitat (UPA) 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 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 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 in this allotment. During the winter months, cattle do not congregate at water sources; therefore, this impact to water quality and riparian vegetation is short lived and dissipates after the cattle have been removed.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For riparian areas, these include:

- 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;
- Install barriers and maintain 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 closure 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
- Exclude livestock by fencing unprotected natural springs and other natural sources to protect, maintain or enhance riparian habitat where feasible.

For springs, these measures include:

- 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;
- Construct or install educational information such as signs;
- Install step-over;
- Install barriers;
- Narrow route;
- Install/Implement Erosion Prevention Best Management Practices;
- Seasonal closure during bird nesting season;
- Monitor the route for signs of increasing impacts to a sensitive resource; and
- Determine that no minimization and mitigation measure is needed based on site evaluation.

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 motorized vehicle use, and following closure of routes. Where motorized vehicle 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. Closure of routes in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.3.3.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to riparian areas. 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 riparian areas and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and

- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit riparian areas 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Changes to motorized vehicle use in the locations specified in these decisions under the action alternatives do have the potential to impact riparian areas in those locations. However, no water resources 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.

As discussed under *Impacts Common to All Alternatives*, sensitive, riparian habitat (UPA) may be impacted if it is not fenced or other avoidance measures implemented. 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 in this allotment. During the winter months, cattle do not congregate at water sources; therefore, this impact to water quality and riparian vegetation is short lived and dissipates after the cattle have been removed.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that motorized vehicles can have adverse impacts on riparian areas and springs. The mileage of routes associated with riparian areas and springs under the No Action Alternative is presented in Table 4.3-9.

Table 4.3-9. Alternative 1 - Miles of Routes in Proximity to Riparian/Spring Areas

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 50 Feet of Riparian Area	17.6	0	0	31.2
Mileage Within 300 Feet of Spring	2.7	0	0	7.8

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.

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to riparian areas. 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 closed routes. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, 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. 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 motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect, maintain or enhance riparian habitat where feasible.

4.3.3.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to riparian areas. 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 riparian areas and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit riparian areas by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to riparian areas of 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 impacts to riparian areas. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The riparian area impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to riparian areas.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. The seasonal limitations on "C" routes may reduce their use for motorized events, and thus have localized beneficial impacts on riparian areas near those routes.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. The elimination of the Johnson Valley to Parker event may reduce impacts to riparian areas in that area. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on riparian areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. In general, the

lakebeds are not associated with riparian areas, and this decision would not have any direct effect on riparian areas. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on riparian areas by increasing the recreational use of routes in close proximity to riparian areas.

PA V: No water resources are found along the designated Rand-Fremont routes system; therefore, no impacts to riparian areas are anticipated as a result of Alternative 2.

PA VI: 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 the potential for erosion that could impact riparian areas. This decision would also reduce the potential for stopping, parking, and camping to create new disturbance within riparian areas. The effect of these actions would be a net beneficial impact on riparian areas.

PA VII: As discussed under *Impacts Common to All Alternatives*, sensitive, riparian habitat (UPA) may be impacted if it is not fenced or other avoidance measures implemented. Under this alternative, livestock grazing would be discontinued on portions of the Ord Mountain, Cantil Common, and Shadow Mountains Allotments. Due to these closures, any direct impacts to riparian habitats located on these allotments would cease. 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.

Alternative 2 Route Designation

Section 4.3.3.2 described the general impacts to riparian areas that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on riparian areas and springs. The mileage of routes associated with riparian areas and springs under Alternative 2 is presented in Table 4.3-10.

Table 4.3-10. Alternative 2 - Miles of Routes in Proximity to Riparian/Spring Areas

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 50 Feet of Riparian Area	15.4	0	.5	32.9
Mileage Within 300 Feet of Spring	2.2	0	0	8.3

The reductions in impacts, as compared to the No Action Alternative, 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.

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce impacts to riparian areas. 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 closed routes. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines 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 motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect, maintain or enhance riparian habitat where feasible.

4.3.3.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on riparian areas is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to riparian areas under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. There are no riparian areas associated with these areas, so the plan amendment would not have any adverse impacts to riparian areas. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through

the route designation process. Because the locations of replacement routes are not known the riparian area impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. In general, the lakebeds are not associated with riparian areas, and this decision would not have any direct effect on riparian areas.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. There are no riparian areas present in this area. Therefore, eliminating the permit requirement would not have any impact on riparian areas.

PA VI: 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 the potential for erosion that could impact riparian areas. This decision would also reduce the potential for stopping, parking, and camping to create new disturbance within riparian areas. The effect of these actions would be a net beneficial impact on riparian areas located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: As discussed under *Impacts Common to All Alternatives*, 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.

Alternative 3 Route Designation

Section 4.3.3.2 described the general impacts to riparian areas that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on riparian areas and springs. The mileage of routes associated with riparian areas and springs under Alternative 3 is presented in Table 4.3-11.

Table 4.3-11. Alternative 3 - Miles of Routes in Proximity to Riparian/Spring Areas

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 50 Feet of Riparian Area	33.8	0	.5	14.3
Mileage Within 300 Feet of Spring	6.1	0	0	4.5

The increase in impacts, as compared to the No Action Alternative, is 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.

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce impacts to riparian areas. 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 closed routes. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs 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 motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect, maintain or enhance riparian habitat where feasible.

4.3.3.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on riparian areas is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 riparian areas. However, this decision would make it easier for BLM to consider riparian area impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on riparian areas.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to riparian areas under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. There are no riparian areas associated with these areas, so this decision would not have any adverse impacts to riparian areas. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The riparian area impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles. In general, the lakebeds are not associated with riparian areas, and this decision would not have any direct effect on riparian areas.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 the potential for erosion that could impact riparian areas. This decision would also reduce the potential for stopping, parking, and camping to create new disturbance within riparian areas. The effect of these actions would be a net beneficial impact on riparian areas located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: As discussed under *Impacts Common to All Alternatives*, 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.

Alternative 4 Route Designation

Section 4.3.3.2 described the general impacts to riparian areas that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on riparian areas and springs. The mileage of routes associated with riparian areas and springs under Alternative 4 is presented in Table 4.3-12.

Table 4.3-12. Alternative 4 - Miles of Routes in Proximity to Riparian/Spring Areas

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 50 Feet of Riparian Area	16.5	0.1	0.6	31.7
Mileage Within 300 Feet of Spring	3.6	0.3	0.1	6.5

The increase in impacts, as compared to the No Action Alternative, is 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.

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce impacts to riparian areas. 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 closed routes. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs 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 motorized routes.

Exclude livestock by fencing unprotected natural springs and other natural sources to protect, maintain or enhance riparian habitat where feasible.

4.4 Biological Resources

Table 4-26 of the 2006 WEMO Plan presented general assumptions regarding the impact of motorized vehicle access 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 motorized vehicle access on tortoise are more broadly considered to be applicable to other wildlife, vegetation, and areas designated for their protection, including DT ACECs.

Table 4.4-1. General Assumptions Regarding Impacts of Motorized Routes on Vegetation, Wildlife, and Areas Specially Designated for their Protection

Category	Assumptions
Desired Results	An overall objective of the transportation network goal is to designate and implement a route network that would provide for public access, authorized uses, and the following desired results: • Fewer losses of tortoises and other wildlife to crushing, poaching, pet collection, intentional vandalism, and similar activities requiring vehicle access. • Less degradation and loss of occupied habitat (first priority) and suitable habitat (second priority). • Larger blocks of unfragmented habitat, which would be achieved if vehicle use is prevented on designated closed routes, does not result in increased cross-country travel in adjacent areas, and promotes recovery of suitable habitats more quickly than would naturally occur. • Route closure in higher density wildlife areas is likely to provide the most benefit in terms of avoiding mortalities and other losses. • Route closure in lower density wildlife areas would alleviate losses of animals that are critically important to natural repatriation.
Function and Importance of DT ACECs	• 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 are no less important for tortoise recovery than lands supporting relatively higher densities. • DT ACECs are the primary land base on which conservation goals, recovery efforts, and mitigation standards can be achieved.
Impacts to Wildlife and Vegetation	• Motorized routes in wildlife habitat are assumed to potentially have adverse impacts to individuals due to vehicle strikes and noise. • Wildlife and vegetation are more likely to be adversely impacted in regions supporting higher densities of motorized 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 listed species.

4.4.1 Vegetation Resources

4.4.1.1 Introduction

Affected Environment Summary

Sections 3.4.3 and 3.4.4 describe the vegetation in the planning area, including vegetative communities, unusual plant assemblages (UPAs), and special status plant species. More than 91 percent of the planning area is located in the Mojave Basin and Range Ecoregion. Because elevations and moisture gradients in this ecoregion can vary abruptly across short distances, plant communities also vary greatly. Communities in the higher elevations include Joshua tree woodland, sagebrush steppe, pinyon-juniper woodland, and cottonwood/willow riparian vegetation. The southern part of the planning area gradually transitions to Mojave Desert vegetation dominated by creosote bush and white bursage. Unique desert wetland communities include mesquite bosques, as well as freshwater and saltwater marshes. The northwestern portion of the planning area is in the Sierra Nevada Ecoregion, comprising about six percent of the planning area. The southwestern portion of the planning area is in the Southern California Mountains Ecoregion, and is dominated by chaparral.

The CDCA Plan recognized areas throughout the CDCA as Unusual Plant Assemblages (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.

A total of 58 special status plant species were identified as potentially occurring within the planning area (BLM 2005, 2013a, b; Dudek and ICF International 2012). Special status plant species include those designated as threatened or endangered under the Endangered Species Act, as well as those designated as BLM Sensitive Species. Many of these special status plant species are located in areas that are specifically designated for protection of these species, including USFWS Designated Critical Habitat (DCH), or BLM-designated ACECs, CDNCLs, DT ACECs, national monuments, or conservation areas. These special designations commonly carry management prescriptions to protect these species, including limitations on future land uses, and limitations on motorized vehicle use.

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 motorized vehicle network on specific vegetation 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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the location of each route with respect to the UPA areas designated within the planning area. The process also included evaluation of the location of each route with respect to an updated inventory of locations of special status plants and ACECs designated for protection of vegetation resources.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact UPAs and other vegetation resources across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, changes in conditions within the planning area, and changes in the applicable regulatory framework for vegetation resources. This additional information is incorporated into the evaluation in Section 4.4.1.2 below.
- Calculated the mileage of routes in occupied rare plant habitat through the use of CNDDB data by extracting CNDDB polygons (including buffered point data) occurring on BLM lands and then overlaying the routes so that only those routes within these polygons remained. The mileage, and subsequent acreage, was derived from these remaining route segments.

4.4.1.2 Impacts Common to All Alternatives

The impacts from OHV use and livestock grazing on vegetation were summarized by Ouren and others (2007).

Impacts from OHV Use

Motorized routes have both direct and indirect effects on 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 motorized 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 vegetation is more adverse in areas of rare vegetative communities, UPAs, or special status plant habitat.

There are also a variety of indirect effects of motorized vehicle 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.

Motorized vehicle routes can serve as corridors by which non-native plant species can more easily invade wildlife habitat. Brooks (1998 in Boarman 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. This invasion of invasive non-natives is further enhanced through “water harvesting”, the concentration of precipitation runoff adjacent to compacted roadbeds.

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."

Motorized vehicle 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).

Motorized vehicle 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 motor vehicles 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 motorized may have minor direct effects to the vegetation, at least in the reasonably foreseeable future, because impacts on these routes have already occurred and are likely to continue, even if the route is closed. The horizon for natural re-vegetation of these routes is anticipated to be substantially beyond the planning horizon. However, indirect effects from the use of these routes would decrease if the routes were closed.

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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 motorized 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 motorized 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. These minimization and mitigation measures differ among the alternatives, and are therefore discussed in more detail in Sections 4.8.3, 4.8.4, 4.8.5, and 4.8.6 below.

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. 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 four alternatives evaluated in this SEIS, Alternative 3 would result in the greatest increase in open motorized 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 closing the largest mileage of routes 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 closed routes and providing educational information for the public, which will result in a moderate level of compliance of the route network. The rate of active closures anticipated is similar for all alternatives, so active disturbances would not vary substantially by alternative in the reasonably foreseeable future. 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 motorized 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, horses and other wildlife of 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 occurs 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. 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 portion 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 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 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 Ibs/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

The WEMO SEIS would result in direct and indirect impacts, both positive and negative, 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 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. 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. Based on BLM records, cattle grazing activities have not been identified as adversely affecting BLM special status plant species that are located within allotments. 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

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 invasives 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 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. 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 versus native plant species to livestock varies based 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 of 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 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 consider 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.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process and the grazing program management alternatives for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For rare and special-status plant species, these include:

- 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;
- 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.

For protected vegetation resources, these include:

- 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;
- 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.

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 motorized vehicle use, and following closure of routes. Where motorized vehicle 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. Closure of routes in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.4.1.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to natural communities, special-status

vegetation species, or UPAs. 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 vegetation and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit vegetation resources 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Impacts may still occur to vegetation as a result of motor vehicle 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.

Livestock Grazing - Upland Vegetation and Upland UPAs

The impacts common to all alternatives would apply to all allotments being actively grazed under the No Action Alternative. See Table 4.7-1 for the remaining grazing acres potentially affected.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that motorized vehicles 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 motorized 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.

Table 4.4-2. Alternative 1 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	Open/Limited[1] (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping[2] (Acreage)
Arizonan upland Sonoran desert scrub	1.6	2.9	21.5
California annual forb/grass vegetation	4.2	9.7	50.5
California naturalized annual and perennial grassland	1.7	5.7	24.6
Californian evergreen coniferous forest and woodland	32.6	103.5	528.6
Californian mesic chaparral	45.4	91.8	655.1
Californian pre-montane chaparral	0	1.1	13.9
Californian warm temperate marsh/seep	0	0.1	0
Californian xeric chaparral	1.2	21.8	61.7
Central and South Coastal California seral scrub	0.2	0.1	2.4
Central and South Coastal Californian coastal sage scrub	19.1	62.8	309.6
Desert Playa	54.5	20.7	669.6
Developed	<0.1	0.2	1.8
Great Basin cool semi-desert alkali basin	4.8	2.8	62.2
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0.6	14.2	0
Intermontane deep or well-drained soil scrub	114.6	210.3	1,095.1
Intermontane seral shrubland	8.9	14.8	57.8
Lower bajada and fan Mojavean-Sonoran desert scrub	4,463.5	7228.8	46,165.0
Mediterranean California naturalized annual and perennial grassland	4.8	15.6	43.6
Mojave and Great Basin upper bajada and toeslope	567.0	1301.3	6,210.4
Mojavean semi-desert wash scrub	139.8	128.5	1,199.2
North American warm desert alkaline scrub and herb playa and wet flats	60.8	74.4	600.7
North American warm desert bedrock cliff and outcrop	88.1	82.0	881.8
North American warm desert dunes and sand flats	2.5	4.8	30.5
Not Mapped	78.8	122.3	1,103.2
Shadscale-saltbush cool semi-desert scrub	19.4	29.0	145.9
Sonoran-Coloradan semi-desert wash woodland/scrub	49.0	49.6	487.4
Southern Great Basin semi-desert grassland group	0.2	0.2	1.8

Table 4.4-2. Alternative 1 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	Open/Limited[1] (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping[2] (Acreage)
Southwestern North American introduced riparian scrub	2.7	2.3	27.5
Southwestern North American riparian evergreen and deciduous woodland	14.0	26.6	127.8
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
Southwestern North American salt basin and high marsh	199.6	160.1	2,142.6
Western Great Basin montane conifer woodland	58.5	100.1	869.2
Western Mojave and Western Sonoran Desert borderland chaparral	<0.1	0.8	1.4

1 – Open/Limited Mileage includes motorized, non-motorized, and non-mechanized.

2 – 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. Alternative 1 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Bakersfield Cactus	0	<0.1	0
Barstow Wooly Sunflower	7.8	9.2	114.1
Beaver Dam Breadroot	28.8	42.6	684.6
Big Bear Valley Woollypod	3.4	0.7	222.8
Boyd's Monardella	0.2	0.5	2.1
California Alkali Grass	0.8	1.9	35.4
Chaparral Sand-verbena	0	0.1	0.3
Charlotte's Phacelia	0	0.1	0.3
Chimney Creek Nemacladus	3.6	6.6	207.4
Clokey's Cryptantha	0	0	0
Creamy Blazing Star	4.6	14.7	149.4
Curved-pod Milk-vetch	18.6	14.6	821.7
Cushenbury Buckwheat (CNDDB)	1.9	1.9	114.4
Cushenbury Buckwheat (Critical Habitat)	2.3	1.5	161.9
Cushenbury Milk Vetch (CNDDB)	1.2	1.0	93.5

Table 4.4-3. Alternative 1 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Cushenbury Milk Vetch (Critical Habitat)	4.1	3.1	281.0
Cushenbury Oxytheca (CNDDB)	3.5	2.5	238.0
Cushenbury Oxytheca (Critical Habitat)	0	0	0.2
Death Valley Sandpaper Plant	6.0	13.8	402.5
Dedecker's Clover	0	0	0
Desert Cymopterus	3.9	2.5	48.4
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	<0.1	0.2	7.3
Hall's Daisy	0	0	0
Harwood's Eriastrum	0	0	0
Horn's Milk-vetch	<0.1	1.6	5.2
Kelso Creek Monkeyflower	3.3	2.7	199.4
Kern Buckwheat	0.6	0.5	22.1
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0.1	11.0
Lane Mountain Milk Vetch (CNDDB)	5.6	10.9	336.2
Lane Mountain Milk Vetch (Critical Habitat)	25.2	71.3	1,390.7
Latimer's Woodland Gilia	1.1	1.0	67.2
Little San Bernardino Mountains Linanthus	2.1	1.9	111.5
Mojave Menodora	73.7	181.6	956.6
Mojave Monkeyflower	11.2	15.7	488.7
Mojave Tarplant	<0.1	1.1	10.6
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0.3	0.2	21.7
Owen's Peak Lomatium	0	0.3	0
Owens Valley Checkerbloom	74.9	78.3	4,878.0
Pale-Yellow Layia	0.1	0.1	4.7
Palmer's Mariposa-lily	10.1	6.3	635.3
Parish's Daisy (CNDDB)	1.7	0.6	96.1
Parish's Daisy (Critical Habitat)	4.4	3.0	287.5
Parish's Phacelia	6.2	10.8	286.5
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	17.7	38.3	856.4
Red Rock Canyon Monkeyflower	13.5	30.1	213.4
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0.3	0.1	0
Robison's Monardella	0	1.7	0
Rose-flowered Larkspur	0	0.8	0

Table 4.4-3. Alternative 1 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
San Bernardino Aster	0.3	0.4	20.6
San Bernardino Milk-vetch	7.8	5.6	453.6
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	0.6	3.6	42.3
Short-joint Beavertail	0	1.0	0
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	0.1	0.1	5.0
Triple-ribbed Milk-vetch	0.4	0.1	31.8
White-bracted Spineflower	1.4	6.5	108.2
White-margined Beardtongue	13.5	8.1	367.3

1 - The inclusion of multiple CNDDB 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.

Table 4.4-4. Alternative 1 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	17.2	43.6	1,188.5
I B 3 Kelso Valley Oak Woodland Assemblage	0.6	17.1	58.1
I D 2 Desert Saltbush Assemblage	959.1	1,243.0	16,187.3
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	4.5	8.9	134.3
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	13.2	9.3	710.7
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	25.7
III B 4 Palm Oases Vegetation	3.5	3.0	200.5
IV A 5 Mojave Sink Desert Willow Assemblage	2.6	7.4	213.2
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	300.1	898.7	10,591.5
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	56.8	43.4	3,357.4

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 motorized 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.

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to vegetation. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, 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 vegetation, 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 vegetation impacts are considered before authorizing new motorized routes.

Maintain and enforce reduced utilization thresholds for livestock grazing based on the season of use and range conditions.

4.4.1.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to vegetation. 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 vegetation and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit vegetation by facilitating adaptive management changes in response to changing on-the-ground

conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to vegetation of 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 impacts to vegetation. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The vegetation impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to vegetation.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. The seasonal limitations on "C" routes may reduce their use for motorized events, and thus have localized beneficial impacts on vegetation in those areas.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. The elimination of the Johnson Valley to Parker event is expected to be beneficial to vegetation in that area. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on vegetation by

increasing the recreational use of routes that are in close proximity to sensitive vegetation communities, special-status plants, or UPAs.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail 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. Since Koehn lakebed would be closed, and there would be no change to the status of the other three lakebeds, there would not be a direct effect to vegetation resources. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on vegetation by increasing the recreational use of routes in areas with sensitive vegetation communities, special-status plants, or UPAs.

PA V: Impacts may still occur to vegetation as a result of motor vehicle 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.

PA VI: 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 impacts in those areas. This decision would also reduce the amount of new disturbance, having a similar reduction in vegetation impacts. The effect of these actions would be a net beneficial impact on vegetation resources.

PA VII: Impacts to upland vegetation, UPAs, special-status plants, and native plants and native plant communities are discussed in the *Impacts Common to All Alternatives* Section. Under this alternative, grazing would be discontinued on portions of the Ord Mountain, Cantil Common, and Shadow Mountain 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.

Alternative 2 Route Designation

Section 4.4.1.2 described the general impacts to vegetation resources that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on vegetative communities, special status plants 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 motorized 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 plants, 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	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Arizonan upland Sonoran desert scrub	1.6	3.0	21.5
California annual forb/grass vegetation	2.6	11.4	50.5
California naturalized annual and perennial grassland	2.2	5.3	24.6
Californian evergreen coniferous forest and woodland	45.3	90.8	528.6
Californian mesic chaparral	57.1	77.8	655.1
California pre-montane chaparral	1.1	0	13.9
Californian warm temperate marsh/seep	0	0.1	0
Californian xeric chaparral	5.9	17.1	61.7
Central and South Coastal California seral scrub	0.2	0.1	2.4
Central and South Coastal Californian coastal sage scrub	28.4	53.4	309.6
Desert Playa	56.2	19.0	669.6
Developed	0.1	0.1	1.8
Great Basin cool semi-desert alkali basin	5.3	2.3	62.2
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0	14.8	0
Intermontane deep or well-drained soil scrub	8.6	243.4	1,095.1
Intermontane seral shrubland	5.6	18.1	57.8
Lower Bajada and Fan Mojavean-Sonoran desert scrub	3,835.7	7857.6	46,165.0
Mediterranean California naturalized annual and perennial grassland	4.8	15.5	43.6
Mojave and Great Basin upper bajada and toeslope	525.2	1343.2	6,210.4
Mojavean semi-desert wash scrub	93.8	176.0	1,199.2
North American warm desert alkaline scrub and herb playa and wet flats	39.9	95.3	600.7
North American warm desert bedrock cliff and outcrop	78.4	91.7	881.8
North American warm desert dunes and sand flats	2.5	4.8	30.5
Not Mapped	64.0	137.1	1,103.2
Shadscale-saltbush cool semi-desert scrub	10.1	38.2	145.9
Sonoran-Coloradan semi-desert wash woodland/scrub	37.8	59.8	487.4
Southern Great Basin semi-desert grassland group	0.2	0.2	1.8

Table 4.4-5. Alternative 2 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Southwestern North American introduced riparian scrub	2.4	2.6	27.5
Southwestern North American riparian evergreen and deciduous woodland	12.8	27.9	127.8
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
Southwestern North American salt basin and high marsh	149.7	210.4	2,142.9
Western Great Basin montane conifer woodland	74.4	83.9	869.2
Western Mojave and Western Sonoran Desert borderland chaparral	0.1	0.8	1.4

Table 4.4-6. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Bakersfield Cactus	0	<0.1	0
Barstow Wooly Sunflower	4.6	12.3	100.3
Beaver Dam Breadroot	28.1	43.3	355.1
Big Bear Valley Woollypod	2.1	1.9	40.7
Boyd's Monardella	0.2	0.5	2.1
California Alkali Grass	0.8	1.9	8.6
Chaparral Sand-verbena	0	0.1	0.3
Charlotte's Phacelia	5.7	4.6	58.7
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	7.0	12.3	80.7
Creamy Blazing Star	16.8	16.3	205.0
Curved-pod Milk-vetch	1.8	1.9	21.1
Cushenbury Buckwheat (CNDDB)	2.3	1.5	27.4
Cushenbury Buckwheat (Critical Habitat)	1.2	1.0	14.5
Cushenbury Milk Vetch (CNDDB)	3.9	3.3	48.1
Cushenbury Milk Vetch (Critical Habitat)	3.3	3.0	40.6

Table 4.4-6. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Cushenbury Oxytheca (CNDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Death Valley Sandpaper Plant	6.9	13.0	80.7
Dedecker's Clover	0	0	0
Desert Cymopterus	3.1	3.2	42.6
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	0.1	0.1	1.3
Hall's Daisy	0	0	0
Harwood's Eriastrum	0	0	0
Horn's Milk-vetch	0	1.6	0
Kelso Creek Monkeyflower	2.6	3.5	29.1
Kern Buckwheat	0.7	0.3	7.1
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0.1	1.8
Lane Mountain Milk Vetch (CNDDB)	3.9	12.7	45.5
Lane Mountain Milk Vetch (Critical Habitat)	18.7	77.8	220.5
Latimer's Woodland Gilia	0.2	1.9	1.6
Little San Bernardino Mountains Linanthus	2.8	1.2	30.2
Mojave Menodora	65.9	189.4	884.9
Mojave Monkeyflower	8.9	18.0	104.2
Mojave Tarplant	0	1.2	0
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0.4	0	4.7
Owen's Peak Lomatium	0.3	0	3.5
Owens Valley Checkerbloom	51.8	101.4	575.9
Pale-Yellow Layia	0.1	0.1	0.7
Palmer's Mariposa-lily	11.2	5.2	130.5
Parish's Daisy (CNDDB)	1.5	0.7	17.5
Parish's Daisy (Critical Habitat)	4.0	3.4	48.2
Parish's Phacelia	3.6	13.4	29.9
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	10.9	45.1	116.8
Red Rock Canyon Monkeyflower	12.6	31.0	147.6
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0.3	0.1	2.4
Robison's Monardella	0	1.1	6.8
Rose-flowered Larkspur	0.8	0	9.1
San Bernardino Aster	0.6	0.2	6.8

Table 4.4-6. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
San Bernardino Milk-vetch	9.2	4.2	103.4
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	1.3	2.9	14.9
Short-joint Beavertail	0.2	0.8	2.6
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	0.1	0.1	1.1
Triple-ribbed Milk-vetch	0.5	0	6.4
White-bracted Spineflower	2.6	5.3	30.8
White-margined Beardtongue	10.3	11.3	104.6

1 - The inclusion of multiple CNDDB 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.

Table 4.4-7. Alternative 2 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	23.1	37.7	272.5
I B 3 Kelso Valley Oak Woodland Assemblage	1.7	15.9	18.9
I D 2 Desert Saltbush Assemblage	710.3	1,491.3	10,570.1
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	3.4	10.0	47.8
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	11.8	10.6	126.6
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	5.1
III B 4 Palm Oases Vegetation	5.2	1.2	58.7
IV A 5 Mojave Sink Desert Willow Assemblage	2.8	7.2	33.5
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	294.0	904.5	3,525.9
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	59.0	41.2	683.4

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 motorized 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.

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce impacts to vegetation. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines 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 motorized routes.

Maintain and enforce reduced utilization thresholds for livestock grazing based on the season of use and range conditions.

4.4.1.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on vegetation is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to vegetation under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. Alternative 3 could potentially impact the suspected Red Rock Poppy occurrence south of the Spangler Hills Open Area. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process.

Because the locations of replacement routes are not known, the vegetation impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. In general, the lakebeds are unvegetated, and are not associated with sensitive vegetation communities, special-status plants, or UPAs. Therefore, this decision would not have any direct effect on vegetation resources on the lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. 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. Not requiring a visitor to complete an educational orientation program before visiting an area may result in an adverse 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: 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 impacts in those areas. This decision would also reduce the amount of new disturbance, having a similar reduction in vegetation impacts. The effect of these actions would be a net beneficial impact on vegetation resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Impacts to upland vegetation, UPAs, special-status plants, and native plants and native plant communities are discussed in the *Impacts Common to All Alternatives* Section.

Alternative 3 Route Designation

Section 4.4.1.2 described the general impacts to vegetation resources that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on vegetative communities, special status plants 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 motorized 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 plants, 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	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Arizonan upland Sonoran desert scrub	4.6	0	147.4
California annual forb/grass vegetation	9.4	4.6	160.9
California naturalized annual and perennial grassland	6.6	0.8	121.1
Californian evergreen coniferous forest and woodland	92.8	43.2	1,957.5
Californian mesic chaparral	103.4	26.8	2,221.8
California pre-montane chaparral	1.1	<0.1	27.8
Californian warm temperate marsh/seep	0	<0.1	0
Californian xeric chaparral	20.4	2.5	314.7
Central and South Coastal California seral scrub	0.2	0.1	4.5
Central and South Coastal Californian coastal sage scrub	63.7	18.0	1,220.6
Desert Playa	74.5	0.7	1,739.0
Developed	0.3	0	6.5
Great Basin cool semi-desert alkali basin	7.7	0	171.6
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0.3	14.5	7.3
Intermontane deep or well-drained soil scrub	207.4	117.6	3,702.7
Intermontane seral shrubland	14.0	9.7	273.7
Lower Bajada and Fan Mojavean-Sonoran desert scrub	7968.7	3722.2	124,306.5
Mediterranean California naturalized annual and perennial grassland	10.3	10.1	122.5
Mojave and Great Basin upper bajada and toeslope	1271.3	597.0	25,950.7
Mojavean semi-desert wash scrub	194.7	75.1	2,620.9
North American warm desert alkaline scrub and herb playa and wet flats	103.7	31.5	1,471.3
North American warm desert bedrock cliff and outcrop	142.6	27.4	2,658.1
North American warm desert dunes and sand flats	4.3	3.1	84.2
Not Mapped	215.2	60.8	3,011.8
Shadscale-saltbush cool semi-desert scrub	30.3	18.1	526.1
Sonoran-Coloradan semi-desert wash woodland/scrub	70.2	27.3	526.1
Southern Great Basin semi-desert grassland	0.2	0.2	1.8

Table 4.4-8. Alternative 3 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Southwestern North American introduced riparian scrub	4.2	0.7	85.6
Southwestern North American riparian evergreen and deciduous woodland	23.3	17.4	432.7
Southwestern North American riparian, flooded and swamp forest/scrubland	0	0.5	0
Southwestern North American riparian/wash scrub	<0.1	0.3	1.2
Southwestern North American salt basin and high marsh	256.2	103.8	3,094.3
Western Great Basin montane conifer woodland	116.9	41.5	2,546.2
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]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Bakersfield Cactus	<0.1	0	0.3
Barstow Wooly Sunflower	7.9	9.0	105.5
Beaver Dam Breadroot	58.0	13.4	565.7
Big Bear Valley Woollypod	2.8	1.3	67.1
Boyd's Monardella	0.2	0.5	2.1
California Alkali Grass	0.8	1.9	15.5
Chaparral Sand-verbina	0.1	0	0.3
Charlotte's Phacelia	8.2	2.1	144.4
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	14.9	4.3	248.5
Creamy Blazing Star	26.4	6.7	429.3
Curved-pod Milk-vetch	3.8	0	65.6
Cushenbury Buckwheat (CNDDB)	2.9	0.8	66.2
Cushenbury Buckwheat (Critical Habitat)	1.5	0.7	34.5
Cushenbury Milk Vetch (CNDDB)	5.1	2.1	106.6
Cushenbury Milk Vetch (Critical Habitat)	4.3	2.0	87.4

Table 4.4-9. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Cushenbury Oxytheca (CNDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Darwin Rock Cress	0	0	0
Death Valley Sandpaper Plant	18.4	1.4	347.4
Dedecker's Clover	0	0	0
Desert Cymopterus	4.3	2.0	45.4
Gilman's Goldenbush	0	0	0
Grey-leaved Violet	<0.1	0.2	2.2
Hall's Daisy	0	0	0
Harwood's Eriastrum	0	0	0
Horn's Milk-vetch	1.6	<0.1	34.1
Kelso Creek Monkeyflower	5.7	0.4	113.1
Kern Buckwheat	0.9	0.1	14.6
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0	3.7
Lane Mountain Milk Vetch (CNDDB)	5.5	11.1	121.9
Lane Mountain Milk Vetch (Critical Habitat)	28.5	68.1	500.3
Latimer's Woodland Gilia	1.3	0.8	25.3
Little San Bernardino Mountains Linanthus	4.0	0	70.7
Mojave Menodora	103.9	150.9	906.4
Mojave Monkeyflower	18.4	8.4	274.4
Mojave Tarplant	1.0	0.2	18.5
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0.4	0	9.3
Owen's Peak Lomatium	0.3	0	6.8
Owens Valley Checkerbloom	144.4	8.8	3,23.4
Pale-Yellow Layia	0.2	<0.1	4.1
Palmer's Mariposa-lily	14.6	1.8	312..8
Parish's Daisy (CNDDB)	1.9	0.4	41.2
Parish's Daisy (Critical Habitat)	5.2	2.2	113.4
Parish's Phacelia	13.8	3.2	223.9
Piute Mountains Jewelflower	<0.1	0	0.1
Red Rock Poppy	39.2	16.8	603.4
Red Rock Canyon Monkeyflower	25.6	18.0	217.8
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0.4	<0.1	6.1
Robison's Monardella	1.7	0	25.3
Rose-flowered Larkspur	0.8	0	18.3

Table 4.4-9. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
San Bernardino Aster	0.7	0	17.2
San Bernardino Milk-vetch	12.5	1.0	245.0
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	3.9	0.4	81.9
Short-joint Beavertail	0.8	0.2	12.7
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	<0.1	<0.1	2.1
Triple-ribbed Milk-vetch	0.5	0	13.3
White-bracted Spineflower	7.5	0.4	135.3
White-margined Beardtongue	19.9	1.1	172.9

1 - The inclusion of multiple CNDDB 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.

Table 4.4-10. Alternative 3 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	54.7	6.1	1,259.1
I B 3 Kelso Valley Oak Woodland Assemblage	14.8	2.8	320.6
I D 2 Desert Saltbush Assemblage	1,361.3	839.7	14,767.4
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	9.7	3.7	73.6
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	16.5	5.9	331.0
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	8.9
III B 4 Palm Oases Vegetation	5.4	1.1	111.9
IV A 5 Mojave Sink Desert Willow Assemblage	4.8	5.2	109.0
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	882.4	316.1	12,963.2
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	88.4	11.7	1,879.2

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 motorized 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.

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce impacts to vegetation. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs 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 motorized routes.

Maintain and enforce reduced utilization thresholds for livestock grazing on active allotments based on the season of use and range conditions.

4.4.1.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on vegetation is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 vegetation. However, this decision would make it easier for BLM to consider vegetation impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on vegetation.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable

stopping, parking, and camping distances, and changes to the livestock grazing program. The vegetation impacts of these decisions under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. Alternative 4 could potentially impact the suspected Red Rock Poppy occurrence south of the Spangler Hills Open Area. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The vegetation impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles. In general, the lakebeds are unvegetated, and are not associated with sensitive vegetation communities, special-status plants, or UPAs. Therefore, this decision would not have any direct effect on vegetation resources on the lakebeds.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 impacts in those areas. This decision would also reduce the amount of new disturbance, having a similar reduction in vegetation impacts. The effect of these actions would be a net beneficial impact on vegetation resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Impacts to upland vegetation, UPAs, special-status plants, and native plants and native plant communities are discussed in the *Impacts Common to All Alternatives* Section.

Alternative 4 Route Designation

Section 4.4.1.2 described the general impacts to vegetation resources that are common to all alternatives. That analysis concluded that motorized vehicles can have adverse impacts on vegetative communities, special status plants 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 motorized 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 plants, and UPAs under Alternative 4 is presented in Tables 4.4-11, 4.4-12, and 4.4-13, respectively.

Table 4.4-11. Alternative 4 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Arizonan upland Sonoran desert scrub	1.1	3.5	40.8
California annual forb/grass vegetation	4.5	9.4	61.5
California naturalized annual and perennial grassland	1.7	5.6	40.6
Californian evergreen coniferous forest and woodland	40.0	96.0	915.7
Californian mesic chaparral	51.2	85.9	1,194.6
California pre-montane chaparral	0	1.1	0.4
Californian warm temperate marsh/seep	0	0.1	0
Californian xeric chaparral	2.0	20.9	28.3
Central and South Coastal California seral scrub	0	0.3	0
Central and South Coastal Californian coastal sage scrub	22.2	59.7	484.9
Desert Playa	47.3	27.9	1,119.2
Developed	0	0.2	1.8
Great Basin cool semi-desert alkali basin	6.9	0.8	158.7
Inter-Mountain West mesic tall sagebrush shrubland and steppe	0.6	14.2	13.9
Intermontane deep or well-drained soil scrub	118.5	206.6	2,348.2
Intermontane seral shrubland	9.7	14.0	191.6
Lower Bajada and Fan Mojavean-Sonoran desert scrub	4,664.1	7027.0	80,350.1
Mediterranean California naturalized annual and perennial grassland	5.7	14.7	70.9
Mojave and Great Basin upper bajada and toeslope	700.1	1168.4	15,149.4
Mojavean semi-desert wash scrub	144.8	125.0	2,111.0
North American warm desert alkaline scrub and herb playa and wet flats	69.3	65.9	1,023.8
North American warm desert bedrock cliff and outcrop	91.5	78.7	1,766.9
North American warm desert dunes and sand flats	2.7	5.9	61.4
Not Mapped	136.3	139.3	2,059.6
Shadscale-saltbush cool semi-desert scrub	18.1	30.3	380.6

Table 4.4-11. Alternative 4 – Acreage and Mileage of Routes Within Identified Vegetative Communities

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Sonoran-Coloradan semi-desert wash woodland/scrub	49.4	48.2	711.6
Southern Great Basin semi-desert grassland group	0.2	0.2	1.8
Southwestern North American introduced riparian scrub	2.9	2.1	62.9
Southwestern North American riparian evergreen and deciduous woodland	14.4	26.5	291.0
Southwestern North American riparian, flooded and swamp forest/scrubland	0.2	0.3	5.5
Southwestern North American riparian/wash scrub	0.3	<0.1	4.9
Southwestern North American salt basin and high marsh	195.1	158.5	2,690.3
Western Great Basin montane conifer woodland	80.8	77.8	1,783.5
Western Mojave and Western Sonoran Desert borderland chaparral	<0.1	0.8	1.9

Table 4.4-12. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Alkali Mariposa Lily	0	0	0
Bakersfield Cactus	0	<0.1	0
Barstow Wooly Sunflower	7.8	9.2	103.3
Beaver Dam Breadroot	29.4	42.1	456.2
Big Bear Valley Woollypod	1.5	2.6	35.8
Boyd's Monardella	0.6	<0.1	2.1
California Alkali Grass	0.8	1.9	15.5
Chaparral Sand-verbina	<0.1	0.1	0.3
Charlotte's Phacelia	4.4	5.9	83.3
Chimney Creek Nemacladus	0	0	0
Clokey's Cryptantha	6.4	12.9	118.2
Creamy Blazing Star	19.2	13.9	353.1
Curved-pod Milk-vetch	2.5	1.3	51.4
Cushenbury Buckwheat (CNDDB)	2.0	1.7	49.4
Cushenbury Buckwheat (Critical Habitat)	1.0	1.2	23.5
Cushenbury Milk Vetch (CNDDB)	2.7	4.5	65.6
Cushenbury Milk Vetch (Critical Habitat)	2.1	4.1	51.3

Table 4.4-12. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Cushenbury Oxytheca (CNDDB)	0	0	0
Cushenbury Oxytheca (Critical Habitat)	0	0	0
Death Valley Sandpaper Plant	10.2	9.6	222.6
Dedecker's Clover	0	0	0
Desert Cymopterus	3.1	3.3	41.2
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	0	0
Horn's Milk-vetch	<0.1	1.6	0.7
Kelso Creek Monkeyflower	3.5	2.5	73.9
Kern Buckwheat	0.7	0.3	13.2
Kern Plateau Bird's Beak	0	0	0
Kern River Evening Primrose	0.2	0.1	3.7
Lane Mountain Milk Vetch (CNDDB)	5.4	11.2	121.1
Lane Mountain Milk Vetch (Critical Habitat)	25.7	70.9	531.7
Latimer's Woodland Gilia	1.3	0.8	27.2
Little San Bernardino Mountains Linanthus	2.1	1.9	46.3
Mojave Menodora	81.5	173.7	904.6
Mojave Monkeyflower	11.1	15.8	199.0
Mojave Tarplant	0.1	1.1	2.4
Muir's Tarplant	0	0	0
Ninemile Canyon Phacelia	0.3	0.2	7.1
Owen's Peak Lomatium	0	0.3	0
Owens Valley Checkerbloom	84.9	68.3	1,923.3
Pale-Yellow Layia	0.1	0.1	1.6
Palmer's Mariposa-lily	9.7	6.7	223.0
Parish's Daisy (CNDDB)	1.3	1.0	27.1
Parish's Daisy (Critical Habitat)	3.1	4.4	73.4
Parish's Phacelia	8.8	8.2	169.2
Piute Mountains Jewelflower	0	0	0
Red Rock Poppy	18.0	38.1	354.3
Red Rock Canyon Monkeyflower	13.5	30.1	160.6
Ripley's Cymopterus	0	0	0
Robbins' Nemacladus	0	0.4	0
Robison's Monardella	0	1.7	0
Rose-flowered Larkspur	0	0.9	0
San Bernardino Aster	0.6	0.1	14.2

Table 4.4-12. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Plant Species[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
San Bernardino Milk-vetch	6.8	6.6	147.6
San Bernardino Mountains Dudleya	0	0	0
Sanicle Cymopterus	0.7	3.5	17.5
Short-joint Beavertail	0	1.0	0
Sweet-smelling Monardella	0	0	0
Tehachapi Monardella	0.1	0	2.5
Triple-ribbed Milk-vetch	<0.1	0.5	1.5
White-bracted Spineflower	1.2	6.6	29.3
White-margined Beardtongue	14.5	7.1	171.2

1 - The inclusion of multiple CNDDB 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.

Table 4.4-13. Alternative 4 - Acreage and Mileage of Routes Within Designated Areas for Unusual Plant Assemblages

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
I A 3 Olancha Greasewood Assemblage	37.3	23.4	878.2
I B 3 Kelso Valley Oak Woodland Assemblage	0.6	17.1	15.5
I D 2 Desert Saltbush Assemblage	931.4	1270.4	12,168.6
II E Yuha Desert/Cronese Valley/Ward-Chemehuevi Valley Crucifixion Thorn Assemblage	3.4	9.8	73.6
II F Ord Mountain Jojoba Assemblage	0	<0.1	0
III B 1 Mesquite Thickets	14.1	5.4	283.6
III B 2 Salt and Brackish Water Marshes Vegetation	0.6	0	8.9
III B 4 Palm Oases Vegetation	3.5	3.0	71.4
IV A 5 Mojave Sink Desert Willow Assemblage	3.7	6.3	90.4
IV B 1 Johnson Valley/Lucerne Valley Creosote Bush Clones	308.0	890.2	4,828.3
IV B 2 Fry Mountains Ancient Mojave Yucca Clones	0	0	0
IV C 3 Pipes Canyon Huge Joshua Trees	54.5	45.7	1,208.8

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 motorized 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.

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce impacts to vegetation. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs 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 motorized routes.

Maintain and enforce reduced utilization thresholds for livestock grazing on active allotments based on the season of use and range conditions.

4.4.2 Wildlife Resources

4.4.2.1 Introduction

Affected Environment Summary

Section 3.4.3.2 describes wildlife present in the planning area. A total of 44 special status wildlife species were identified as potentially occurring within the planning area (BLM 2005, 2013a,b; Dudek and ICF International 2012). BLM has determined that 22 of these special status wildlife species would not be affected by the proposed action or alternatives based on their habitat requirements and/or known distributions. Similar to vegetation, these special status wildlife species are commonly located in areas that are specifically designated for protection of these species, including designated critical habitat (DCH), DT ACECs, ACECs, CDNCLs, national monuments, or other conservation areas. These special designations commonly carry management prescriptions to protect these species, including limitations on future land uses, and limitations on motorized vehicle use.

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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the location of each route with respect to the inventoried locations of wildlife corridors and habitat for special status wildlife species, including the Mojave fringe-toed lizard.
- Conducted focused surveys for the Mojave fringe-toed lizard in nine locations in 2012 and 2013. The results of those surveys are presented in Section 3.4, and they were used in the GIS analysis during the development of route network alternatives.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact wildlife habitat and corridors across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, changes in conditions within the planning area, and changes in the applicable regulatory framework for wildlife. This additional information is incorporated into the evaluation in Section 4.4.2.2 below.
- Evaluated the impacts of changes in grazing allocation on habitat for special status wildlife species associated with each of the alternatives.
- Addressed cumulative impacts of both OHV use and grazing on wildlife corridors and habitat for special status species.

4.4.2.2 Impacts Common to All Alternatives

As with vegetation, motorized vehicle use and grazing have both direct and indirect effects on wildlife habitat and individuals. By removing vegetation and compacting soil, motorized vehicle routes directly occupy land area that would otherwise be occupied by wildlife, and eliminate plants that would serve as forage and shelter. In addition, motorized vehicles present a direct strike risk to individuals, reducing populations in close proximity to motorized 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. Motorized vehicle 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 motorized routes 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. Motorized vehicle impacts are generally proportionate to the number of existing routes 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. 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 climate change. 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 motorized 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 motorized 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. These minimization and mitigation measures differ among the alternatives, and are therefore discussed in more detail in Sections 4.4.2.3, 4.4.2.4, 4.4.2.5, and 4.4.2.6 below.

The general manner in which motorized vehicle 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 motorized vehicle 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. Chapter 3 presents maps of the distribution of all species within the planning area, and the tables in Sections 4.4.2.3, 4.4.2.4, 4.4.2.5, and 4.4.2.6 below summarize the mileage and acreage of routes of each designation type within the habitat of all species and differences in allocation of grazing allotments between livestock and wildlife species.

Desert Tortoise

Designating and implementing a motorized vehicle access network in DT ACECs that is supported by land use laws and compatible with tortoise recovery is the single most important management action that could be implemented to minimize the widest variety of known human impacts 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 habitat (first priority) and suitable habitat (second priority);
- Larger blocks of unfragmented habitat, which would be achieved if vehicle use is prevented on closed routes, does not result in increased cross-country travel in adjacent areas, and promotes recovery of suitable habitats more quickly than would naturally occur;
- Route closure in higher density tortoise areas is likely to provide the most benefit in terms of avoiding mortalities and other losses;
- Route closure in lower density tortoise areas would alleviate losses of animals that are critically important to natural repatriation and population recovery.

Motorized vehicle 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, 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 detectible 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, motorized vehicles will likely have less of an effect on desert tortoises or their habitat.

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.

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 also 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, motorized vehicle use can have both direct and indirect effects on Mojave fringe-toed lizards and their habitat. The primary direct effects include vehicle collision and habitat loss or modification. It is assumed that there would be adverse impacts to the Mojave fringe-toed lizard where motorized routes pass through suitable and occupied habitat.

Although data on OHV use in habitat near the Mojave River is not available, recent observations from BLM staff indicate a low potential for OHV use off the designated routes and into the

channel due to the topography of the area. This would result in minimal adverse effects to this species. Additionally, Mojave fringe-toed lizards are rarely found in the stream channel. Instead, sand bars and adjacent habitat with the preferred vegetation components are more important for this species than the stream channel. These are the same areas where designated open routes tend to be concentrated. Additional observations indicate that the road within the stream channel of the Mojave River is blown out during flood events every five years or so. These natural causes contribute to the loss of individuals as well.

Mohave Ground Squirrel

The Mohave ground squirrel (MGS) is a medium-sized species that would experience similar threats from motorized vehicles 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. 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 open and closed routes. 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.

The potential to crush squirrels likely increases as the prevalence and use of roads increases in a given region. Given the relatively higher incidence of cross-country travel in open areas (1998-2001 WMP data), vehicle impacts are more likely to occur there and other places with similar densities of cross-country tracks, depending on resident and dispersing populations of the MGS.

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 vehicular impact.

Vehicular 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 OHVs. 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. Similarly, 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, specific routes or trails can be closed 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.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For wildlife, the measures were developed specifically for special-status species, desert tortoise habitat in DT ACECs, near active golden eagle nests, in the Mohave Ground Squirrel Core Areas, and in wildlife corridors. These measures are described below.

For special-status wildlife resources, potential minimization and mitigation measures include:

- Construct wildlife bypass;
- Restrict stopping/parking/camping;
- Install barriers;
- Maintain existing barriers;
- Remove attractants;
- Seasonal use restriction; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

For tortoise habitat in DT ACECs, potential minimization and mitigation measures include:

- Install wildlife bypass;
- Install Wildlife Safety Zone signs;

- Modify access to a less impacting designation;
- Seasonal use restriction;
- Install access type restrictor;
- Re-align route to avoid designated area;
- Restrict stopping/parking/camping;
- Add parking/camping area;
- Install barriers and maintain or upgrade existing barriers;
- Remove attractants;
- Construct or install educational information such as signs;
- Install fencing;
- Narrow route;
- Maintain berms so that they do not adversely impact the movement of desert tortoise;
- Monitor the route for signs of increasing impacts to a sensitive resource, and
- Determination that no additional minimization and mitigation measure is needed based on site evaluation.

For golden eagle nests, potential minimization and mitigation measures include:

- Seasonal closure during nesting season;
- Install access type restrictor;
- Re-align route to avoid environmentally sensitive area;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Restrict stopping/parking/camping;
- Install barriers;
- Remove attractants;
- Construct or install educational information such as signs;
- 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.

For the Mohave Ground Squirrel Core Areas, potential minimization and mitigation measures include:

- Construct wildlife bypass;
- Install Wildlife Safety Zone signs;
- 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 parking/camping area;
- Install barriers and maintain or upgrade existing barriers;
- Remove attractants;
- Construct or install educational information such as signs;
- Install fencing;
- Narrow route;
- 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.

For wildlife corridors, potential minimization and mitigation measures include:

- Construct wildlife bypass;
- Install Wildlife Safety Zone signs;
- 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 parking/camping area;
- Install barriers and maintain or upgrade existing barriers;
- Remove attractants;
- Construct or install educational information such as signs;
- Install fencing;
- Narrow route;
- Maintain berms so that they do not adversely impact the movement of desert tortoise;
- 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 area evaluation.

Residual Impacts After Implementation of Mitigation Measures

Residual effects to wildlife would continue after application of mitigation measures, both with continued motorized vehicle use, and following closure of routes. Although impacts would be reduced from those that would have existed without mitigation measures, motorized vehicles could still impact special-status wildlife, wildlife habitat, and wildlife corridors. Impacts would continue to occur due to direct strikes by motorized vehicles, motorized vehicle noise, and disturbance of soil and vegetation in wildlife habitat and corridors. Closure of routes in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.4.2.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to wildlife. 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 wildlife and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit wildlife resources 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Changes to motorized vehicle use in the locations specified in these decisions under the action alternatives do have the potential to impact wildlife in those locations. Impacts may still occur to desert tortoise, Mohave ground squirrel, burrowing owls, pallid bats, and small lizards and animals as a result of motor vehicle use in these areas on remaining available routes, as

summarized in section 4.4.1.2 Impacts Common to All Alternatives, despite adopted measures, including fencing, oversight, and measures to increase public information prior to use of routes in the Rand-Fremont area.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that the use of motorized vehicles 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 motorized routes. The mileage of routes associated with wildlife corridors and special status wildlife areas under the No Action Alternative is presented in Tables 4.4-14 and 4.4-15, respectively.

Table 4.4-14. Alternative 1 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Routes Within Wildlife Corridor	2,523.4	3,659.8	98,225.1

Table 4.4-15. Alternative 1 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Bendire's Thrasher	8.6	67.8	329.9
Bighorn Sheep	80.2	133.7	3,711.4
Burrowing Owl	1.1	4.7	68.8
Desert Tortoise (Total within Critical Habitat)	2,353.1	2,775.5	36,644.9
Desert Tortoise (DTRNA)	3.3	130.5	50.6
Desert Tortoise (Fremont-Kramer ACEC)	894.0	1,179.0	10,254.6
Desert Tortoise (Ord-Rodman ACEC)	317.2	531.2	3,649.0
Desert Tortoise (Pinto Mountains ACEC)	130.1	82.1	15,58.1
Desert Tortoise (Superior-Cronese ACEC)	855.7	758.9	9,617.6
Fringed Myotis	0.1	0.1	4.8
Gray Vireo	0	0.7	0
Least Bell's Vireo	0	0	0
LeConte's Thrasher	10.0	21.1	662.0
Mojave Fringe-toed Lizard[1]	20.7	34.0	1,289.4
Northern Sagebrush Lizard	0	<0.1	0
Pallid Bat	7.8	21.9	413.1
Southwestern Pond Turtle[2]	--	--	--
Spotted Bat	0	0.4	0
Swainson's Hawk	0	0.7	0

Table 4.4-15. Alternative 1 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Western Mastiff Bat	2.7	3.9	158.2
Golden Eagle 0-0.5 Miles of active nests	31.3	75.1	1,551.7
Mohave Ground Squirrel	963.0	2,089.6	42,507.8

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.

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to wildlife habitat and individuals. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, 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. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific wildlife impacts are considered before authorizing new motorized routes.

4.4.2.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to wildlife. 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 wildlife and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit wildlife by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to wildlife of 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 impacts to wildlife. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include changes to "C" routes, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The wildlife impacts of these decisions under Alternative 2 are as follows:

PA III: 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 this alternative approximately 3 miles of routes fall within MGS core population areas. Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. With the implementation of a seasonal closure the potential for a direct take of the species should be very low.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989, and so deletion of this event in the plan amendment would be beneficial to the tortoise. Since the event has not been run in this corridor 1989, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on wildlife by increasing the recreational use of routes in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. In general, the lakebeds do not support wildlife, and are not associated with wildlife corridors or special-status wildlife. Since Koehn lakebed would be closed, and there would be no change to the status of the other three lakebeds, there would not be a direct effect to wildlife. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on wildlife by increasing the recreational use of routes in other areas.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. Impacts may still occur to desert tortoise, Mohave ground squirrel, burrowing owls, pallid bats, and small lizards and animals as a result of motor vehicle use in the Rand-Fremont area, despite fencing and measures to increase public information prior to use of routes in the Rand-Fremont area.

PA VI: 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 reduce the potential for motorized vehicle use to impact wildlife in those areas. The effect of these actions would be a net beneficial impact on wildlife resources.

PA VII: Discontinuing livestock grazing in DT ACECs and re-allocate 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.

Alternative 2 Route Designation

Section 4.4.2.2 described the general impacts to wildlife that are common to all alternatives. That analysis concluded that motorized vehicles 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 motorized routes. The mileage of routes associated with wildlife corridors and special status wildlife areas under Alternative 2 is presented in Tables 4.4-16 and 4.4-17, respectively.

Table 4.4-16. Alternative 2 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Routes Within Wildlife Corridor	2,073.3	4,111.7	25,434.4

Table 4.4-17. Alternative 2 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Bendire's Thrasher	11.6	64.8	145.8
Bighorn Sheep	63.0	151.0	753.9
Burrowing Owl	1.3	4.5	10.7
Desert Tortoise (Total within Critical Habitat)	1,863.8	3,264.4	25,611.6
Desert Tortoise (DTRNA)	4.2	129.6	50.6
Desert Tortoise (Fremont-Kramer ACEC)	679.6	1,392.4	10,254.6
Desert Tortoise (Ord-Rodman ACEC)	266.9	581.4	3,649.0
Desert Tortoise (Pinto Mountains ACEC)	137.3	74.9	1,558.1
Desert Tortoise (Superior-Cronese ACEC)	675.0	940.2	9,617.6
Fringed Myotis	0.1	0.1	0.2
Gray Vireo	0	0.7	0
Least Bell's Vireo	0	0	0
LeConte's Thrasher	9.4	21.8	105.0
Mojave Fringe-toed Lizard[1]	21.9	32.8	235.7
Northern Sagebrush Lizard	0	<0.1	0
Pallid Bat	9.9	19.8	0
Southwestern Pond Turtle[2]	--	--	--
Spotted Bat	0	0.4	0
Swainson's Hawk	0	0.7	0
Western Mastiff Bat	1.8	4.9	0
Golden Eagle 0-0.5 Miles of active nests	27.1	79.4	201.7
Mohave Ground Squirrel	660.6	2,392.1	8,749.2

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.

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce impacts to wildlife habitat and individuals. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines would reduce the potential for direct vehicle strikes to wildlife, and for degradation of wildlife habitat in areas adjacent to routes. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific wildlife impacts are considered before authorizing new motorized routes.

4.4.2.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on wildlife is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include changes to "C" routes, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The wildlife impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. These 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 this alternative approximately 28 miles of routes fall within MGS core population areas. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the wildlife impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. In general, the lakebeds do not support wildlife, and are not associated with wildlife corridors or special-status wildlife. Therefore, this decision would not have any direct effect on wildlife resources on the lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The desert tortoise, pallid bat, Mohave ground squirrel, and burrowing owl occur within the Rand Mountains-Fremont Valley Management Area. Not requiring a visitor to complete an educational orientation program before visiting an area may result in an adverse 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: 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 wildlife impacts in those areas. This decision would also reduce the potential for motorized vehicle use to impact wildlife in those areas. The effect of these actions would be a net beneficial impact on wildlife resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Impacts to wildlife resources would be as discussed in the *Impacts Common to All Alternatives* Section. Alternative 3 would include the continuation of livestock grazing on approximately 115,106 acres of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments.

Alternative 3 Route Designation

Section 4.4.2.2 described the general impacts to wildlife that are common to all alternatives. That analysis concluded that motorized vehicles 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 motorized routes. The mileage of routes associated with wildlife corridors and special status wildlife areas under Alternative 3 is presented in Tables 4.4-18 and 4.4-19, respectively.

Table 4.4-18. Alternative 3 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Routes Within Wildlife Corridor	4,322.7	1,859.8	70,108.4

Table 4.4-19. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Bendire's Thrasher	53.0	23.4	1,120.1
Bighorn Sheep	123.9	90.0	2,212.2
Burrowing Owl	1.0	4.8	25.8
Desert Tortoise (Total within Critical Habitat)	2,988.3	2,139.4	29,111.2
Desert Tortoise (DTRNA)	4.3	129.9	50.6
Desert Tortoise (Fremont-Kramer ACEC)	1,181.2	890.8	10,254.6
Desert Tortoise (Ord-Rodman ACEC)	442.8	405.5	3,649.0

Table 4.4-19. Alternative 3 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Desert Tortoise (Pinto Mountains ACEC)	205.8	6.5	1,558.1
Desert Tortoise (Superior-Cronese ACEC)	1,117.5	497.1	9,617.6
Fringed Myotis	0.1	0.1	2.3
Gray Vireo	0	0.7	0
Least Bell's Vireo	0	0	0
LeConte's Thrasher	16.5	14.7	321.0
Mojave Fringe-toed Lizard[1]	47.0	7.7	910.5
Northern Sagebrush Lizard	0	<0.1	0
Pallid Bat	27.2	2.5	469.2
Southwestern Pond Turtle[2]	--	--	--
Spotted Bat	0	0.4	0
Swainson's Hawk	0	0.7	0
Western Mastiff Bat	4.7	1.9	99.5
Golden Eagle 0-0.5 Miles of active nests	61.1	45.4	1,054.8
Mohave Ground Squirrel	1,765.3	1,287.4	31,048.8

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.

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce impacts to wildlife habitat and individuals. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines 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. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific wildlife impacts are considered before authorizing new motorized routes.

4.4.2.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives

2 and 3, and therefore effect of these decisions on wildlife is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 wildlife. However, this decision would make it easier for BLM to consider wildlife impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on wildlife.

Five of the plan amendment decisions being considered would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include changes to "C" routes, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The wildlife impacts of these decisions under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. All 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 this alternative approximately 23 miles of routes fall within MGS core population areas. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The wildlife impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles. In general, the lakebeds do not support wildlife, and are not associated with wildlife corridors or special-status wildlife. Therefore, this decision would not have any direct effect on wildlife resources on the lakebeds.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 wildlife impacts in those areas. This decision would also reduce the potential for motorized vehicle use to impact wildlife in those areas. The effect of these actions would be a net beneficial impact on wildlife resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Impacts to wildlife resources would be as discussed in the *Impacts Common to All Alternatives* Section. Alternative 4 would include the continuation of livestock grazing on approximately 115,106 acres of the Ord Mountain, Cantil Common, and Shadow Mountain Allotments.

Alternative 4 Route Designation

Section 4.4.2.2 described the general impacts to wildlife that are common to all alternatives. That analysis concluded that motorized vehicles 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 motorized routes. The mileage of routes associated with wildlife corridors and special status wildlife areas under Alternative 4 is presented in Tables 4.4-20 and 4.4-21, respectively.

Table 4.4-20. Alternative 4 - Acreage and Mileage of Routes Within Wildlife Corridors

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Routes Within Wildlife Corridor	2,694.8	3,488.4	47,186.6

Table 4.4-21. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Bendire's Thrasher	18.0	58.4	356.7
Bighorn Sheep	99.0	114.9	1,912.2
Burrowing Owl	1.1	4.7	23.3
Desert Tortoise (Total within Critical Habitat)	2,318.8	2,809.3	28,434.48
Desert Tortoise (DTRNA)	5.1	128.7	50.6
Desert Tortoise (Fremont-Kramer ACEC)	870.1	1,202.1	10,254.6
Desert Tortoise (Ord-Rodman ACEC)	314.0	533.4	3,649.0
Desert Tortoise (Pinto Mountains ACEC)	127.2	85.0	3,649.0
Desert Tortoise (Superior-Cronese ACEC)	842.8	771.9	9,617.6
Fringed Myotis	0.1	0.1	2.3
Gray Vireo	0	0.7	0
Least Bell's Vireo	0	0	0

Table 4.4-21. Alternative 4 - Acreage and Mileage of Routes Within Range or Other Protected Habitat for Special Status Wildlife Species

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
LeConte's Thrasher	4.2	27.0	237.7
Mojave Fringe-toed Lizard[1]	24.4	30.3	522.9
Northern Sagebrush Lizard	0	<0.1	0
Pallid Bat	7.1	22.6	132.7
Southwestern Pond Turtle[2]	--	--	--
Spotted Bat	0	0.4	0
Swainson's Hawk	0	0.7	0
Western Mastiff Bat	6.6	0	133.4
Golden Eagle 0-0.5 Miles of active nests	33.8	72.6	622.5
Mohave Ground Squirrel	1,004.5	2,048.6	19,035.7

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.

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce impacts to wildlife habitat and individuals. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines 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. Requirements for plan amendment and NEPA reviews of future major route network changes would ensure that specific wildlife impacts are considered before authorizing new motorized routes.

4.5 Socioeconomics and Environmental Justice

4.5.1 Introduction

Affected Environment Summary

Section 3.5 describes the socioeconomic conditions in the WEMO Planning area. The planning area is a substantial geographic region covering more than 3.3 million acres, encompassing portions of five counties, and including over 733,000 residents. Although the population base is significant, it is diverse and widely dispersed in scattered concentrations ranging from as few as 30,000 residents in such areas as Barstow and Ridgecrest to more than 300,000 residents in the Palmdale-Lancaster area of Los Angeles County and also the Victor Valley area of San Bernardino County.

Although it encompasses substantial rural areas, the WEMO planning area is situated along the periphery of the huge Los Angeles metropolitan area, and the southern portion of the Central Valley population and employment base. Within the planning area, industries such as aerospace, mining, military, and government operations have long provided local employment to area residents. However, overall economic growth throughout the West Mojave is increasingly influenced and driven by growth trends associated with the larger economic region of Southern California. The regional study area for socioeconomic analysis includes Inyo, Kern, Los Angeles, and San Bernardino counties. Localized study areas include incorporated cities and communities within the planning area with populations of 10,000 or greater. This population threshold is used to define the local study area from a programmatic perspective.

The transportation network on public lands is needed to provide access to residences, as well as to authorized users of public lands for commercial activities such as grazing, mining, energy production, and communications. Therefore, the connectivity of the network can affect socioeconomic activity by facilitating or limiting access for these activities. The transportation network also affects the level, location, and types of recreational activities occurring in the planning area. The network provides access to areas where recreational users can experience the solitude of the desert, and areas which retain their rural character. Whether the network is the focus of the recreational experience (i.e., for OHV touring), or is simply a means to access recreation areas, the configuration of motorized and closed routes can affect localized socioeconomic activity related to recreation.

This analysis cannot evaluate all the site-specific impacts to environmental justice issues associated with travel management and new designations for motorized recreation. Instead, the analysis uses best readily available information to characterize high asymmetric economic and social burdens on low-income people.

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.

For this SEIS for the WMRNP, BLM performed the following:

- Used 2010 census data to update the socioeconomic analysis in Section 3.5, and to identify minority and low income populations for the environmental justice analysis.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact minority and low income populations across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.5.2 below.

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 motorized vehicular access and off-highway motor vehicle recreation 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 supports socioeconomics by meeting the needs of the resident and visitor population for accessing housing, employment locations, and recreation, as well as supporting 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 to support these needs, including 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 supports socioeconomics in providing access to, and a network to be used for, outdoor recreational activities. In meeting these needs to support the 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, or closing routes can be adverse by limiting access, or by increasing the time and cost needed for access. These actions can, in turn, have a localized impact on specific commercial operations that support 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 closed.

For routes in rural areas, maintenance and designation of motorized routes would support 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 supporting 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 support 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 support 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 support 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 motorized 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.” Motorized vehicle 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 motorized recreation that could impact all populations include:

- Vehicular Noise
- Air Quality and Public Health

- Water Quality and Quantity
- Damage to Cultural Resources
- Carbon Emissions and Impacts to Climate Change
- 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.

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 to include livestock grazing.

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.

4.5.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to socioeconomics or environmental justice. 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 socioeconomics, environmental justice, and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit socioeconomics and environmental justice 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Because no changes would be made to these activities in the No Action Alternative, there would be no impacts to socioeconomic or environmental justice conditions as a result of the No Action Alternative.

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.

Alternative 1 Route Designation

In general, motorized access has a beneficial impact on socioeconomics by supporting the larger 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 and closed routes, 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. As noted in Table 4.5-1, 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, 20 census tracts contain environmental justice populations. Table 4.5-1 details all of the census tracts within the project area, including the associated route mileage within each census tract.

Table 4.5-1. Alternative 1 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Inyo	8*	531.0	0.7	0	460.0
Kern	52.01*	114.7	0	0	330.0
	52.03*[1]	181.4	0	0	767.9
	53[1]	0.5	0	0	0.3
	54.01	0	0	0	0
	54.02	0	0	0	1.1
	54.03	0	0	0	0
	54.04	0	0	0	0.1
	55.01	424.8	0.3	1.1	871.4
	55.06	3.0	0	0	27.3
	55.07[1]	0	0	0	0
	55.08[1]	2.2	0	0	23.2
	561	0	0	0	0
	57	0.1	0	0	2.5
	58.01	0	0	0	0
	58.02[1]	0	0	0	1.4
	591	0	0	0	0
	60.04*	59.6	0.1	0	185.7
	60.07*	15.9	0	1.7	201.6
	651	0	0	0	0

Table 4.5-1. Alternative 1 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles	9001.02[1]	6.8	0	0	51.1
	9001.03[1]	0	0	0	0
	9001.04[1]	0	0	0	0
	9002.01	0	0	0	1.7
	9003	0	0	0	0
	9005.01[1]	0	0	0	0
	9005.04	0	0	0	0
	9005.05[1]	0	0	0	0
	9005.06	0	0	0	0
	9005.07[1]	0	0	0	0
	9005.08[1]	0	0	0	0
	9006.02[1]	0	0	0	0
	9006.05[1]	0	0	0	0
	9006.06[1]	0	0	0	0
	9006.07[1,2]	0	0	0	0
	9006.08[1]	0	0	0	0
	9006.09[1]	0	0	0	0
	9007.01[1]	0	0	0	0
	9007.03[1]	0	0	0	0
	9007.04[1]	0	0	0	0
	9007.05	0	0	0	0
	9008.03[2]	0	0	0	0
	9008.04[1]	0	0	0	0
	9008.05	0	0	0	0
	9008.06[1,2]	0	0	0	0
	9009	0	0	0	0
	9010.03[2]	0	0	0	0
	9010.04	0	0	0	0
	9010.07	0	0	0	0
	9010.08	0	0	0	0
	9010.09	0	0	0	0
	9010.10[1]	0	0	0	0
	9010.11	0	0	0	0
	9011.01	0	0	0	0
	9011.02	0	0	0	0
	9012.05	0	0	0	0
	9012.09*	0.6	0	0	0
	9012.10	0.6	0	0	0
	9012.13	0	0	0	0.8
	9100.01[2]	0	0	0	0.3

Table 4.5-1. Alternative 1 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9100.02	0	0	0	1.7
	9101.01[1,2]	0	0	0	0
	9102.01[1,2]	0	0	0	0
	9102.02	0	0	0	0
	9102.05	0	0	0	0
	9102.06	0	0	0	1.2
	9102.07	0	0	0	0
	9102.08	0	0	0	0
	9102.09	0	0	0	0.3
	9102.10	0	0	0	0
	9103.01	0	0	0	0
	9103.02	0	0	0	0
	9104.01	0	0	0	0
	9104.02[1,2]	0	0	0	0
	9104.03[1,2]	0	0	0	0
	9104.04[1,2]	0	0	0	0
	9105.01[1,2]	0	0	0	0
	9105.02[1,2]	0	0	0	0
	9105.04[1,2]	0	0	0	0
	9105.05[2]	0	0	0	0
	9106.01[1,2]	0	0	0	0
	9106.02[1,2]	0	0	0	0
	9106.03[2]	0	0	0	0
	9106.05[1,2]	0	0	0	0
	9106.06[1,2]	0	0	0	0
	9107.05[2]	0	0	0	0
	9107.06[1,2]	0	0	0	0
	9107.07[2]	0	0	0	0
	9107.09	0	0	0	0
	9107.11[2]	0	0	0	0
	9107.12[2]	0	0	0	0
	9107.13[2]	0	0	0	0
	9107.14[1,2]	0	0	0	0
	9107.15[2]	0	0	0	0
	9107.16[2]	0	0	0	0
	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	8.5
	9800.03	0	0	0	0.8

Table 4.5-1. Alternative 1 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9800.04[1,2]	0	0	0	0
Riverside	469*	47.2	0	0	36.1
San Bernardino	100.04	0	0	0	0
	100.09	0	0	0	0
	100.10[1]	0	0	0	0
	100.11[1]	0	0	0	0
	100.12	0	0	0	0
	100.13	0	0	0	0
	100.14[1]	0	0	0	0
	100.15[1]	0	0	0	0
	100.16[1]	0	0	0	0
	100.17	0	0	0	12.5
	100.18[1]	0	0	0	0
	100.19[1]	0	0	0	0
	100.20[1]	0	0	0	0
	100.21[1]	0	0	0	0
	100.22	0	0	0	0
	100.23	0	0	0	0
	100.24[1]	0.6	0	0	15.7
	100.25[1]	0	0	0	0
	100.26[1]	0	0	0	0
	103*[1]	1014.7	0	0	701.0
	104.02	0.6	0	0	2.3
	104.09*	226.8	0	0	201.2
	104.10	1.9	0	0	13.7
	104.11	0	0	0	2.0
	104.12	0	0	0	0
	104.13[1]	8.1	0	0	9.7
	104.15	0	0	0	0.6
	104.16[1]	45.1	0	0	163.0
	104.17[1]	3.7	0	0	12.6
	104.19[1]	1.7	0	0	3.6
	104.20	1.45	0	0	12.1
	104.21[1]	0	0	0	0
	104.22	0.1	0	0	0.6
	104.23[1]	102.6	0	0	261.0
	104.24[1]	222.5	0	5.1	400.5
	116	1422.6	0	0	1490.8
	117[1]	62.0	0	0	145.2

Table 4.5-1. Alternative 1 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continue)	118	8.1	0	0	12.1
	119[1]	148.6	0	0	170.5
	120.01	1.8	0	0	2.6
	120.02	1.2	0	0	1.4
	121.01	8.5	0	0	27.7
	121.03	29.8	0	0	25.4
	121.04[1]	336.7	0	0	826.6
	250	4.2	0	0	2.7
	89.01[1]	552.1	0	0	846.6
	91.07	0	0	0	0
	91.08[1]	0	0	0	0.1
	91.09	0	0	0	0
	91.10	0	0	0	0
	91.12[1]	0	0	0	0
	91.14	0	0	0	0
	91.16[1]	0	0	0	0
	91.17[1]	36.4	0	0	116.9
	91.18	0	0	0	0
	91.19	0	0	0	0
	92.01	0	0	0	0
	93[1]	0	0	0	0.1
	94[1]	0	0	0	0
	95[1]	0.7	0	0	1.5
	97.07	0	0	0	0
	97.08	84.0	0	0	140.2
	97.09[1]	0	0	0	0
	97.10[1]	0	0	0	0
	97.11	0	0	0	0
	97.12[1]	0	0	0	0
	97.13	0	0	0	0
	97.14[1]	0	0	0	0
	97.15	0	0	0	0
	97.16[1]	0.1	0	0	0.7
	97.17	0	0	0	0
	98[1]	0	0	0	0
	9802[2]	0	0	0	0
	99.04[1]	0	0	0	0
	99.05[1,2]	0	0	0	0.3
	99.06	0	0	0	0
	99.08[1]	0	0	0	0

Table 4.5-1. Alternative 1 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continue)	99.10	0	0	0	0
	99.11	0	0	0	0
	99.12[1]	0	0	0	0
	99.13[1]	0	0	0	0
WEMO TOTAL		**5,715.05**	**1.1**	**7.9**	**8,603.9**

*Tracts transect the planning area boundary.
1 - Tract contains low-income environmental justice population.
2 - Tract contains minority environmental justice population.

Alternative 1 Minimization and Mitigation Measures

Because no adverse impacts were identified for the No Action Alternative, no alternative-specific minimization and mitigation measures were developed to address socioeconomic impacts to include livestock grazing.

4.5.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to socioeconomics or environmental justice. 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 socioeconomics and environmental justice and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit socioeconomics and environmental justice by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to socioeconomics and environmental justice of 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 impacts to socioeconomics or environmental justice. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The socioeconomic and environmental justice impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to socioeconomics or environmental justice.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. Restricting the use to these months may reduce socioeconomic activity that could have occurred in the local area during other months.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. Because an event has not been run since the listing of the desert tortoise as threatened in 1989, no direct adverse effects to socioeconomic activity in that area are expected. In addition, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on socioeconomics or environmental justice in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. Recreational use of the lakebeds is expected to support socioeconomic activity in the local areas near those lakebeds. Therefore, 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 socioeconomics on a regional basis, but it may result in these impacts occurring on a local basis.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. Because there are currently no known impacts to socioeconomics or environmental justice associated with the area, there would be no impacts to socioeconomic or environmental justice conditions as a result of Alternative 2.

PA VI: 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 is not expected to have any effect on motorized use of routes for recreation or other authorized uses, and would therefore not have any impact on socioeconomics or environmental justice.

PA VII: 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. Under this alternative, 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.

Alternative 2 Route Designation

In general, motorized access has a beneficial impact on socioeconomics by supporting the larger regional transportation network, facilitating local access for businesses, commercial users and residents, and providing recreation access and opportunities. The motorized route network provides increased tourism and low-cost recreational opportunities within the WEMO Planning area. The impacts of use of authorized routes vary widely, and are dependent on the specific characteristics of each authorization and associated access. On a programmatic basis, the socioeconomic impacts of access to authorized uses are generally positive because access facilitates authorized activities that are frequently associated with local jobs. With respect to environmental justice, the impacts from access are minimal since they do not target specific areas and no open or closed areas are being designated or modified under this project. 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 and closed routes, 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. Additionally, Table 4.5-1 details all of the census tracts within the project area as well as associated route mileage by census tract. As noted in Table 4.5-2, many tracts containing environmental justice populations are not transected by the BLM route network. Of the 58 census tracts within the WEMO planning area that are transected by the route network, 22 census tracts, or 38 percent of the census tracts that are transected by the route network, contain environmental justice populations. This alternative contains the least mileage of open routes and the most mileage of closed routes. A decrease in mileage of open routes would potentially adversely impact environmental justice populations with less 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, indicate that environmental justice populations would not bear a disproportionally high level of adverse impacts.

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Inyo	8*	431.0	0	1.7	559.1
Kern	52.01*	100.8	1.5	1.0	341.1
	52.03*[1]	161.0	0	0.5	788.0
	531	0	0	0	0
	54.01	0	0	0	0
	54.02	0.4	0	0	0.7
	54.03	0	0	0	0
	54.04	0	0	0	0.1
	55.01	350.4	27.2	1.1	919.0
	55.06	3.9	0	0	26.5
	55.07[1]	0	0	0	0
	55.08[1]	2.7	0	0	22.7
	561	0	0	0	0
	57	0.1	0	0	2.5
	58.01	0	0	0	0
	58.02[1]	0	0	0	1.4
	591	0	0	0	0

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Kern (continued)	60.04*	76.3	0	0	169.1
	60.07*	57.6	0	0	161.6
	651	0	0	0	0
Los Angeles	9001.02[1]	15.0	0	0	27.0
	9001.03[1]	0	0	0	0
	9001.04[1]	0	0	0	0
	9002.01	0	0	0	1.8
	9003	0	0	0	0
	9005.01[1]	0	0	0	0
	9005.04	0	0	0	0
	9005.05[1]	0	0	0	0
	9005.06	0	0	0	0
	9005.07[1]	0	0	0	0
	9005.08[1]	0	0	0	0
	9006.02[1]	0	0	0	0
	9006.05[1]	0	0	0	0
	9006.06[1]	0	0	0	0
	9006.07[1,2]	0	0	0	0
	9006.08[1]	0	0	0	0
	9006.09[1]	0	0	0	0
	9007.01[1]	0	0	0	0
	9007.03[1]	0	0	0	0
	9007.04[1]	0	0	0	0
	9007.05	0	0	0	0
	9008.03[2]	0	0	0	0
	9008.04[1]	0	0	0	0
	9008.05	0	0	0	0
	9008.06[1,2]	0	0	0	0
	9009	0	0	0	0
	9010.03[2]	0	0	0	0
	9010.04	0	0	0	0
	9010.07	0	0	0	0
	9010.08	0	0	0	0
	9010.09	0	0	0	0
	9010.10[1]	0	0	0	0
	9010.11	0	0	0	0
	9011.01	0	0	0	0
	9011.02	0	0	0	0
	9012.05	0	0	0	0
	9012.09*	0.6	0	0	0

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9012.10	0.6	0	0	0
	9012.13	0	0	0	0.8
	9100.01[2]	0	0	0	0.3
	9100.02	0	0	0	1.7
	9101.01[1,2]	0	0	0	0
	9102.01[1,2]	0	0	0	0
	9102.02	0	0	0	0
	9102.05	0	0	0	0
	9102.06	0	0	0	1.2
	9102.07	0	0	0	0
	9102.08	0	0	0	0
	9102.09	0	0	0	0.3
	9102.10	0	0	0	0
	9103.01	0	0	0	0
	9103.02	0	0	0	0
	9104.01	0	0	0	0
	9104.02[1,2]	0	0	0	0
	9104.03[1,2]	0	0	0	0
	9104.04[1,2]	0	0	0	0
	9105.01[1,2]	0	0	0	0
	9105.02[1,2]	0	0	0	0
	9105.04[1,2]	0	0	0	0
	9105.05[2]	0	0	0	0
	9106.01[1,2]	0	0	0	0
	9106.02[1,2]	0	0	0	0
	9106.03[2]	0	0	0	0
	9106.05[1,2]	0	0	0	0
	9106.06[1,2]	0	0	0	0
	9107.05[2]	0	0	0	0
	9107.06[1,2]	0	0	0	0
	9107.07[2]	0	0	0	0
	9107.09	0	0	0	0
	9107.11[2]	0	0	0	0
	9107.12[2]	0	0	0	0
	9107.13[2]	0	0	0	0
	9107.14[1,2]	0	0	0	0
	9107.15[2]	0	0	0	0
	9107.16[2]	0	0	0	0
	9108.04*	0	0	0	4.4
	9108.05*	0	0	0	0.4

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9108.12	0.4	0	0	0.3
	9110.01	0.9	0	0	7.5
	9800.03	0	0	0	0
	9800.04[1,2]	0	0	0	0
Riverside	469*	45.2	0	0	38.1
San Bernardino	100.04	0	0	0	0
	100.09	0	0	0	0
	100.10[1]	0	0	0	0
	100.11[1]	0	0	0	0
	100.12	0	0	0	0
	100.13	0	0	0	0
	100.14[1]	0	0	0	0
	100.15[1]	0	0	0	0
	100.16[1]	0	0	0	0
	100.17	1.2	0	0	11.2
	100.18[1]	0	0	0	0
	100.19[1]	0	0	0	0
	100.20[1]	0	0	0	0
	100.21[1]	0	0	0	0
	100.22	0	0	0	0
	100.23	0	0	0	0
	100.24[1]	5.0	0	0	11.3
	100.25[1]	0	0	0	0
	100.26[1]	0	0	0	0
	103*[1]	900.3	3.8	0	811.6
	104.02	0.5	0	0	2.4
	104.09*	234.7	0.1	0	193.3
	104.10	2.4	0	0	13.3
	104.11	0.8	0	0	1.2
	104.12	0	0	0	0
	104.13[1]	12.1	0	0	5.7
	104.15	0	0	0	0.6
	104.16[1]	45.9	0	0	162.3
	104.17[1]	11.1	0	0	5.2
	104.19[1]	1.3	0	0	4.0
	104.20	2.8	0	0	10.7
	104.21[1]	0	0	0	0
	104.22	0.1	0	0	0.5
	104.23[1]	100.4	0	0	263.0
	104.24[1]	255.2	0	5.1	366.9

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continued)	116	1,057.0	0.2	1.0	1,857.9
	117[1]	55.9	0	0	151.3
	118	1.3	0	0	18.9
	119[1]	128.5	0	0	190.6
	120.01	2.6	0	0	1.8
	120.02	1.2	0	0	1.4
	121.01	6.7	0	0	29.4
	121.03	28.7	0	0	26.4
	121.04[1]	258.2	1.1	0	903.7
	250	4.0	0	0	3.0
	89.01[1]	405.6	0	6.0	987.1
	91.07	0	0	0	0
	91.08[1]	0	0	0	0.1
	91.09	0	0	0	0
	91.10	0	0	0	0
	91.12[1]	0	0	0	0
	91.14	0	0	0	0
	91.16[1]	0	0	0	0
	91.17[1]	31.8	0.1	0	121.5
	91.18	0	0	0	0
	91.19	0	0	0	0
	92.01	0	0	0	0
	931	0	0	0	0
	941	0	0	0	0
	951	0	0	0	0
	97.07	0	0	0	0
	97.08	86.1	0.4	0	137.8
	97.09[1]	0	0	0	0
	97.10[1]	0	0	0	0
	97.11	0	0	0	0
	97.12[1]	0	0	0	0
	97.13	0	0	0	0
	97.14[1]	0	0	0	0
	97.15	0	0	0	0
	97.16[1]	0.1	0	0	0.7
	97.17	0	0	0	0
	98[1]	0	0	0	0
	9802[2]	0	0	0	0
	99.04[1]	0	0	0	0
	99.05[1,2]	0.1	0	0	0.3

Table 4.5-2. Alternative 2 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continued)	99.06	0	0	0	0
	99.08[1]	0	0	0	0
	99.10	0	0	0	0
	99.11	0	0	0	0
	99.12[1]	0	0	0	0
	99.13[1]	0	0	0	0
WEMO TOTAL		4,888.5	34.4	16.4	9,370.7

*Tracts transect the planning area boundary.
1 - Tract contains low-income environmental justice population.
2 - Tract contains minority environmental justice population.

Alternative 2 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 2, no alternative-specific minimization and mitigation measures were developed to address socioeconomic or environmental justice impacts to include livestock grazing.

4.5.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on socioeconomics and environmental justice is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The socioeconomic and environmental justice impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. Designation of

the routes for motorized events would provide a socioeconomic benefit to businesses in those local areas. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because an event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989, no direct adverse effects to socioeconomic activity in that area are expected. Because the locations of replacement routes are not known the socioeconomic and environmental justice impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. Recreational use of the lakebeds is expected to support socioeconomic activity in the local areas near those lakebeds. Therefore, this decision may have a direct, beneficial impact on local businesses near Cuddeback, Coyote, and Chisholm Tail Lake lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. Eliminating the permit requirement is not expected to have any effect on socioeconomics or environmental justice populations.

PA VI: 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 reduction is not expected to have any effect on motorized use of routes for recreation or other authorized uses, and would therefore not have any impact on socioeconomics.

PA VII: 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. Alternative 3 would not modify any grazing allotments, so would not have any impact on local economies associated with grazing.

Alternative 3 Route Designation

In general, motorized access has a beneficial impact on socioeconomics by supporting the larger 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 and closed routes, 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. Additionally, Table 4.5-3 details all of the census tracts within the project area as well as associated route mileage by census tract. As noted in Table 4.5-3, many tracts containing environmental justice populations are not transected by the BLM route network. Of the 58 census tracts within the WEMO planning area that are transected by the route network, 22 tracts, or 38 percent of the census tracts transected by the route network, contain environmental justice populations. This alternative contains the most mileage of open routes and the least mileage of closed routes. 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. The limited number of census tracts that contain environmental justice populations and are transected by the route network indicate that environmental justice populations would not bear a disproportionally high level of adverse impacts.

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Inyo	8*	873.4	29.8	2.9	85.6
Kern	52.01*	163.9	0	12.7	267.8
	52.03*[1]	584.3	0	21.4	343.5
	531	0	0	0	0
	54.01	0	0	0	0
	54.02	0.9	0	0	0.2
	54.03	0	0	0	0
	54.04	0.1	0	0	0
	55.01	939.5	36.8	1.1	320.4
	55.06	25.3	0	0	5.1
	55.07[1]	0	0	0	0
	55.08[1]	22.8	0	0	2.6
	561	0	0	0	0
	57	2.1	0	0	0.5
	58.01	0	0	0	0
	58.02[1]	1.3	0	0	0.1
	591	0	0	0	0
	60.04*	168.4	0.4	15.7	60.9
	60.07*	177.0	0	5.0	37.1
	651	0	0	0	0
Los Angeles	9001.02[1]	40.6	0	0	1.3
	9001.03[1]	0	0	0	0
	9001.04[1]	0	0	0	0
	9002.01	1.7	0	0	0.1
	9003	0	0	0	0
	9005.01[1]	0	0	0	0

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9005.04	0	0	0	0
	9005.05[1]	0	0	0	0
	9005.06	0	0	0	0
	9005.07[1]	0	0	0	0
	9005.08[1]	0	0	0	0
	9006.02[1]	0	0	0	0
	9006.05[1]	0	0	0	0
	9006.06[1]	0	0	0	0
	9006.07[1,2]	0	0	0	0
	9006.08[1]	0	0	0	0
	9006.09[1]	0	0	0	0
	9007.01[1]	0	0	0	0
	9007.03[1]	0	0	0	0
	9007.04[1]	0	0	0	0
	9007.05	0	0	0	0
	9008.03[2]	0	0	0	0
	9008.04[1]	0	0	0	0
	9008.05	0	0	0	0
	9008.06[1,2]	0	0	0	0
	9009	0	0	0	0
	9010.03[2]	0	0	0	0
	9010.04	0	0	0	0
	9010.07	0	0	0	0
	9010.08	0	0	0	0
	9010.09	0	0	0	0
	9010.10[1]	0	0	0	0
	9010.11	0	0	0	0
	9011.01	0	0	0	0
	9011.02	0	0	0	0
	9012.05	0	0	0	0
	9012.09*	0.6	0	0	0
	9012.10	0.6	0	0	0
	9012.13	0.8	0	0	0
	9100.01[2]	0.3	0	0	0
	9100.02	1.3	0	0	0.3
	9101.01[1,2]	0	0	0	0
	9102.01[1,2]	0	0	0	0
	9102.02	0	0	0	0
	9102.05	0.1	0	0	0
	9102.06	1.2	0	0	0.1

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9102.07	0	0	0	0
	9102.08	0	0	0	0
	9102.09	0.3	0	0	0
	9102.10	0	0	0	0
	9103.01	0	0	0	0
	9103.02	0	0	0	0
	9104.01	0	0	0	0
	9104.02[1,2]	0	0	0	0
	9104.03[1,2]	0	0	0	0
	9104.04[1,2]	0	0	0	0
	9105.01[1,2]	0	0	0	0
	9105.02[1,2]	0	0	0	0
	9105.04[1,2]	0	0	0	0
	9105.05[2]	0	0	0	0
	9106.01[1,2]	0	0	0	0
	9106.02[1,2]	0	0	0	0
	9106.03[2]	0	0	0	0
	9106.05[1,2]	0	0	0	0
	9106.06[1,2]	0	0	0	0
	9107.05[2]	0	0	0	0
	9107.06[1,2]	0	0	0	0
	9107.07[2]	0	0	0	0
	9107.09	0	0	0	0
	9107.11[2]	0	0	0	0
	9107.12[2]	0	0	0	0
	9107.13[2]	0	0	0	0
	9107.14[1,2]	0	0	0	0
	9107.15[2]	0	0	0	0
	9107.16[2]	0	0	0	0
	9108.04*	3.6	0	0	0.8
	9108.05*	0.1	0	0	0.3
	9108.12	0.5	0	0	0.1
	9110.01	7.5	0	0	1.0
	9800.03	0.8	0	0	0
	9800.04[1,2]	0	0	0	0
Riverside	469*	77.8	0	0	5.6
San Bernardino	100.04	0	0	0	0
	100.09	0	0	0	0
	100.10[1]	0	0	0	0
	100.11[1]	0	0	0	0

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continued)	100.12	0	0	0	0
	100.13	0	0	0	0
	100.14[1]	0	0	0	0
	100.15[1]	0	0	0	0
	100.16[1]	0	0	0	0
	100.17	11.9	0	0	0.6
	100.18[1]	0	0	0	0
	100.19[1]	0	0	0	0
	100.20[1]	0	0	0	0
	100.21[1]	0	0	0	0
	100.22	0	0	0	0
	100.23	0	0	0	0
	100.24[1]	12.6	0	0	3.7
	100.25[1]	0	0	0	0
	100.26[1]	0	0	0	0
	103*[1]	1,343.0	0	0	372.5
	104.02	2.5	0	0	0.4
	104.09*	391.3	0	0	36.7
	104.10	15.6	0	0	0
	104.11	1.9	0	0	0.1
	104.12	0	0	0	0
	104.13[1]	12.7	0	0	5.1
	104.15	0.6	0	0	0
	104.16[1]	205.9	0	0	2.1
	104.17[1]	11.9	0	0	4.4
	104.19[1]	4.8	0	0	0.6
	104.20	11.7	0	0	1.9
	104.21[1]	0	0	0	0
	104.22	0.7	0	0	0
	104.23[1]	346.1	0	1.0	16.5
	104.24[1]	574.4	0	5.1	47.9
	116	1,811.7	3.5	1.0	1,096.9
	117[1]	79.9	0	0	127.3
	118	19.6	0	0	0.6
	119[1]	239.6	0	0	79.9
	120.01	4.4	0	0	0
	120.02	1.3	0	0	1.3
	121.01	9.8	0	0	26.4
	121.03	53.6	0	0	1.6
	121.04[1]	443.6	0	0	719.8

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continued)	250	4.5	0	0	2.4
	89.01[1]	918.8	21.6	4.7	454.0
	91.07	0	0	0	0
	91.08[1]	0.1	0	0	0
	91.09	0	0	0	0
	91.10	0	0	0	0
	91.12[1]	0	0	0	0
	91.14	0	0	0	0
	91.16[1]	0	0	0	0
	91.17[1]	88.1	0	0	65.3
	91.18	0	0	0	0
	91.19	0	0	0	0
	92.01	0	0	0	0
	931	0	0	0	0
	941	0	0	0	0
	951	0	0	0	0
	97.07	0	0	0	0
	97.08	145.4	0	0	78.8
	97.09[1]	0	0	0	0
	97.10[1]	0	0	0	0
	97.11	0	0	0	0
	97.12[1]	0	0	0	0
	97.13	0	0	0	0
	97.14[1]	0	0	0	0
	97.15	0	0	0	0
	97.16[1]	0.1	0	0	0.7
	97.17	0	0	0	0
	98[1]	0	0	0	0
	9802[2]	0	0	0	0
	99.04[1]	0	0	0	0
	99.05[1,2]	3.1	0	0	0
	99.06	0	0	0	0
	99.08[1]	0	0	0	0
	99.10	0	0	0	0
	99.11	0	0	0	0
	99.12[1]	0	0	0	0
	99.13[1]	0	0	0	0
WEMO TOTAL		9,868	92.1	70.6	4,280.9

Table 4.5-3. Alternative 3 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)

*Tracts transect the planning area boundary.
1 - Tract contains low-income environmental justice population.
2 - Tract contains minority environmental justice population.

Alternative 3 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 3, no alternative-specific minimization and mitigation measures were developed to address socioeconomic impacts to include livestock grazing.

4.5.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on socioeconomics and environmental justice is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 socioeconomics and environmental justice. However, this decision would make it easier for BLM to consider socioeconomic and environmental justice impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on socioeconomics and environmental justice.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The socioeconomics and environmental justice impacts of these decisions under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. Designation of the routes for motorized events would provide a socioeconomic benefit to businesses in those local areas. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures. This action would result in an increase in socioeconomic activity in that local area.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. Recreational use of the lakebeds is expected to support socioeconomic activity in the local areas near those lakebeds. Therefore, this decision may have a direct, beneficial impact on local businesses near Cuddeback, Coyote, and Chisholm Trail Lake lakebeds.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 is not expected to have any effect on motorized use of routes for recreation or other authorized uses, and would therefore not have any impact on socioeconomics or environmental justice.

PA VII: 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. Alternative 4 would not modify any grazing allotments, so would not have any impact on local economies associated with grazing.

Alternative 4 Route Designation

In general, motorized access has a beneficial impact on socioeconomics by supporting the larger 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 and closed routes, 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. Additionally, Table 4.5-4 details all of the census tracts within the project area as well as associated route mileage by census tract. As noted in Table 4.5-4, 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, 20 census tracts, or 36 percent of the census tracts that are transected by the route network, contain environmental justice populations. This alternative contains more mileage of open routes and less mileage of closed routes than Alternative 2, but less mileage of open routes and more mileage of closed routes than Alternative 3. 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. 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, indicate that environmental justice populations would not bear a disproportionally high level of adverse impacts.

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Inyo	8*	567.1	34.0	7.4	25.1
Kern	52.01*	119.1	1.5	4.0	320.0
	52.03*[1]	281.2	0	21.0	647.2
	531	0	0	0	0
	54.01	0	0	0	1.1
	54.02	0	0	0	0
	54.03	0	0	0	0
	54.04	0	0	0	0
	55.01	461.0	42.0	1.1	793.9
	55.06	3.0	0	0	27.3
	55.07[1]	0	0	0	0
	55.08[1]	2.2	0	0	23.2
	561	0	0	0	0
	57	0.9	0	0	1.7
	58.01	0	0	0	0
	58.02[1]	0	0	0	1.4
	591	0	0	0	0
	60.04*	67.4	0	19.1	158.9
	60.07*	23.3	0	6.7	189.2
	651	0	0	0	0
Los Angeles	9001.02[1]	7.2	0	0	34.7
	9001.03[1]	0	0	0	0
	9001.04[1]	0	0	0	0
	9002.01	0.1	0	0	1.6

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9003	0	0	0	0
	9005.01[1]	0	0	0	0
	9005.04	0	0	0	0
	9005.05[1]	0	0	0	0
	9005.06	0	0	0	0
	9005.07[1]	0	0	0	0
	9005.08[1]	0	0	0	0
	9006.02[1]	0	0	0	0
	9006.05[1]	0	0	0	0
	9006.06[1]	0	0	0	0
	9006.07[1,2]	0	0	0	0
	9006.08[1]	0	0	0	0
	9006.09[1]	0	0	0	0
	9007.01[1]	0	0	0	0
	9007.03[1]	0	0	0	0
	9007.04[1]	0	0	0	0
	9007.05	0	0	0	0
	9008.03[2]	0	0	0	0
	9008.04[1]	0	0	0	0
	9008.05	0	0	0	0
	9008.06[1,2]	0	0	0	0
	9009	0	0	0	0
	9010.03[2]	0	0	0	0
	9010.04	0	0	0	0
	9010.07	0	0	0	0
	9010.08	0	0	0	0
	9010.09	0	0	0	0
	9010.10[1]	0	0	0	0
	9010.11	0	0	0	0
	9011.01	0	0	0	0
	9011.02	0	0	0	0
	9012.05	0	0	0	0
	9012.09*	0.6	0	0	0
	9012.10	0.6	0	0	0
	9012.13	0	0	0	0.8
	9100.01[2]	0	0	0	0.3
	9100.02	0	0	0	1.7
	9101.01[1,2]	0	0	0	0
	9102.01[1,2]	0	0	0	0
	9102.02	0	0	0	0

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Los Angeles (continued)	9102.05	0	0	0	0
	9102.06	0	0	0	1.2
	9102.07	0	0	0	0
	9102.08	0	0	0	0
	9102.09	0	0	0	0.3
	9102.10	0	0	0	0
	9103.01	0	0	0	0
	9103.02	0	0	0	0
	9104.01	0	0	0	0
	9104.02[1,2]	0	0	0	0
	9104.03[1,2]	0	0	0	0
	9104.04[1,2]	0	0	0	0
	9105.01[1,2]	0	0	0	0
	9105.02[1,2]	0	0	0	0
	9105.04[1,2]	0	0	0	0
	9105.05[2]	0	0	0	0
	9106.01[1,2]	0	0	0	0
	9106.02[1,2]	0	0	0	0
	9106.03[2]	0	0	0	0
	9106.05[1,2]	0	0	0	0
	9106.06[1,2]	0	0	0	0
	9107.05[2]	0	0	0	0
	9107.06[1,2]	0	0	0	0
	9107.07[2]	0	0	0	0
	9107.09	0	0	0	0
	9107.11[2]	0	0	0	0
	9107.12[2]	0	0	0	0
	9107.13[2]	0	0	0	0
	9107.14[1,2]	0	0	0	0
	9107.15[2]	0	0	0	0
	9107.16[2]	0	0	0	0
	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	8.5
	9800.03	0	0	0	0.8
	9800.04[1,2]	0	0	0	0
Riverside	469*	46.3	0	0	37.1

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino	100.04	0	0	0	0
	100.09	0	0	0	0
	100.10[1]	0	0	0	0
	100.11[1]	0	0	0	0
	100.12	0	0	0	0
	100.13	0	0	0	0
	100.14[1]	0	0	0	0
	100.15[1]	0	0	0	0
	100.16[1]	0	0	0	0
	100.17	0.1	0	0	12.4
	100.18[1]	0	0	0	0
	100.19[1]	0	0	0	0
	100.20[1]	0	0	0	0
	100.21[1]	0	0	0	0
	100.22	0	0	0	0
	100.23	0	0	0	0
	100.24[1]	1.5	0	0	14.8
	100.25[1]	0	0	0	0
	100.26[1]	0	0	0	0
	103*[1]	1,090.2	0	0	625.3
	104.02	0.6	0	0	2.3
	104.09*	227.1	0	0	201.1
	104.10	1.9	0	0	13.7
	104.11	0	0	0	2.0
	104.12	0	0	0	0
	104.13[1]	8.1	0	0	9.7
	104.15	0	0	0	0.6
	104.16[1]	42.3	0	0	165.4
	104.17[1]	1.8	0	0	14.5
	104.19[1]	1.7	0	0	3.6
	104.20	1.5	0	0	12.0
	104.21[1]	0	0	0	0
	104.22	5.5	0	0	0.6
	104.23[1]	102.5	4.1	0.1	257.0
	104.24[1]	205.0	0	5.1	417.3
	116	1,359.5	0	1.0	1,553.1
	117[1]	61.7	0	0	145.5
	118	8.1	0	0	12.1
	119[1]	149.4	0	0	170.2

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continued)	120.01	3.0	0	0	1.4
	120.02	1.2	0	0	1.4
	121.01	7.1	0	0	29.1
	121.03	31.3	0	0	23.8
	121.04[1]	348.7	0	0	814.6
	250	4.6	0	0	2.4
	89.01[1]	546.7	0	5.9	846.5
	91.07	0	0	0	0
	91.08[1]	0	0	0	0.1
	91.09	0	0	0	0
	91.10	0	0	0	0
	91.12[1]	0	0	0	0
	91.14	0	0	0	0
	91.16[1]	0	0	0	0
	91.17[1]	35.5	0	0	117.8
	91.18	0	0	0	0
	91.19	0	0	0	0
	92.01	0	0	0	0
	931	0	0	0	0
	941	0	0	0	0
	951	0	0	0	0
	97.07	0	0	0	0
	97.08	89.6	16.1	0	118.6
	97.09[1]	0	0	0	0
	97.10[1]	0	0	0	0
	97.11	0	0	0	0
	97.12[1]	0	0	0	0
	97.13	0	0	0	0
	97.14[1]	0	0	0	0
	97.15	0	0	0	0
	97.16[1]	0.1	0	0	0.7
	97.17	0	0	0	0
	98[1]	0	0	0	0
	9802[2]	0	0	0	0
	99.04[1]	0	0	0	0
	99.05[1,2]	0	0	0	0.3
	99.06	0	0	0	0
	99.08[1]	0	0	0	0
	99.10	0	0	0	0
	99.11	0	0	0	0

Table 4.5-4. Alternative 4 - Mileage of Routes within Census Tracts

Location/County	Census Tracts	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
San Bernardino (continued)	99.12[1]	0	0	0	0
	99.13[1]	0	0	0	0
WEMO TOTAL		5,916.3	97.7	71.4	7,871.3

*Tracts transect the planning area boundary.

1 - Tract contains low-income environmental justice population.

2 - Tract contains minority environmental justice population.

Alternative 4 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 4, no alternative-specific minimization and mitigation measures were developed to address socioeconomic impacts to include livestock grazing.

4.6 Recreation

4.6.1 Introduction

Affected Environment Summary

Section 3.6 describes the recreation setting and opportunities in the planning area. The transportation network in the West Mojave Planning Area supports recreation by providing a means to access recreation destinations, and by providing the locations and facilities in which OHV, hiking, biking, equestrian, and other transportation-based forms of recreation can occur. With its location only 90 minutes from 21 million residents in the metropolitan Los Angeles area, the West Mojave is a primary recreation destination for millions of people interested in outdoor-based activities such as OHV use, hiking, camping, touring, and viewing of scenery. Documented recreation activities throughout the West Mojave encompass a highly diverse range of activities, but most commonly evolve around the use of motor vehicles as a focal or ancillary element of the visitor experience. Beyond the mobility component of the experience, described recreation activities tend to emphasize immersion in the area's natural resources (solitude, expansive vistas, wildlife, vegetation, terrain, and minerals) as opposed to manmade attractions and conveniences such as theme parks, outlet centers, vacation resorts, and convention centers. Outdoor recreation opportunities in the region span the entire range of BLM recreation settings from urban to primitive.

Recreation activities on BLM lands can occur in designated areas and facilities, and as part of authorized events. They can also occur outside of designated areas and events. Popular outdoor recreation activities in the planning area include:

OHV Recreational Touring: OHV touring often occurs on flat terrain, but such touring also takes place in mountainous terrain using jeeps and similar vehicles. Vehicles that allow for multi-terrain travel have a broad range of access needs since they can traverse different types of terrain features.

Motorcycle Events: OHV access is necessary, not only due to the distance that must be traveled to reach the site of a motorcycle speed, challenge, or other competitive event, but also because significant equipment and supplies must be brought to event staging areas. This is true even for dual sport motorcycles, despite their "street legal" status, because a larger OHV may still be necessary to transport related equipment and supplies to motorcycle parks, other staging areas, or trailheads. This is due largely to the distance that such recreationists travel to participate in their activity, and the motorcycle's limited carrying capacity.

Camping and Hiking: Visitors need OHV access to staging areas and trailheads, and must bring supplies to camp in desert areas. Campers generally stay at locations that are fairly remote to obtain the level of solitude that is associated with the camping experience. In the desert, these locations are typically not located along major highways. Hikers use OHVs to reach trailheads and staging areas that are often quite remote.

Equestrian Riding: Equestrians use motorized vehicles to pull their horse trailers, and other equipment and supplies, to staging areas where they unload their horses, saddle up, and otherwise prepare for rides. Without the use of OHVs, equestrians would be unable to reach these staging areas, where watering holes, corrals, and related facilities are commonly present.

Gem Collecting and Rock Hounding: This activity generally occurs in geologic areas that offer the possibility of finding desired gems and rocks. Many of these areas are remote, and a four-wheel-drive OHV is needed to access them. The vehicle is also required to bring the variety of supplies necessary to safely participate in this form of recreation.

Hunting: Hunters require OHV access to reach trailheads and staging areas, which tend to be remote. From here, they can set out to hunt. Hunters use motorized vehicles to carry their supplies and equipment, which may include camping gear and to remove game.

Site Viewing: Often OHV's are driven to different locations to view and appreciate the various natural or man-made features that can be found in the California desert. Some of the more common types of features visited this way include unique geologic features, petroglyph sites, and mining features. For many people that enjoy going to these various sites the recreational activity is seeing the feature over the traveling to the site.

Each of these activities requires transportation access for motorized vehicles, or designation and maintenance of non-motorized and non-mechanized trails for access.

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.

For this SEIS for the WMRNP, BLM performed the following:

- Used 2012 Recreation Management Information System (RMIS) data to update the recreation use information in Section 3.6.
- The route designation process for each alternative included evaluation of the location of each route with respect to known recreation uses, and to potential safety hazards. It also included designation of non-motorized and non-mechanized routes, as well as designation of 15 recreation-specific sub-designations.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.6.2 below.

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 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 motorized 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 motorized and mechanized touring. In contrast, the goals and objectives for Alternative 3 focus on managing access to emphasize casual multiple-use motorized 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.

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.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For safety issues associated with recreation, these include:

- Remediate abandoned mine land features or other safety hazards;
- Install fencing;
- Install signs;
- Temporarily close 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.

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 route closures

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.

4.6.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to recreation. 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 recreation and other use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit recreation 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Because these activities do not affect recreation, the No Action Alternative would have no direct or indirect impact on recreation.

Alternative 1 Route Designation

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 is presented in Table 4.6-1.

Under the No Action Alternative, there currently are no routes designated for most specific recreational activities except a small motorcycle network,, and therefore 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 motorized vehicle 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 a motorized vehicle 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.

Table 4.6-1. Alternative 1 - Miles of Routes which Support Recreation[1]

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes Designated for Activity				
ATV/UTV	0	0	0	0
Biking	0	0	0	0
Hiking	0	0	2.1	0
Motorcycling	36.4	0	0	0
Competitive "C" Routes	39.5	0	0	0
Miles of Routes for Access to Activity				
Cabin Site	29.1	0	0	101.6
Camping	487.1	0	0	196.4
Caving	22.2	0	0	6.1
Guzzler	61.9	0	0	30.4
Horseback Riding	0.1	0	0	0
Motorized Staging Area	120.2	0	0	27.0
OHV	0	0	0	0
Overlook	251.9	0	0	67.3
Rockhounding	650.0	0	0	685.2
Target Shooting	127.2	0	0	46.4
Trailhead	29.9	0	0	9.4

[1] The sub-designation mileages are considered preliminary, and are likely to be revised prior to issuing the Final SEIS.

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 hazards associated with the No Action Alternative is presented in Table 4.6-2.

Table 4.6-2. Alternative 1 - Miles of Routes in Proximity to Safety Hazards

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	22.8	0	0.1	16.9

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, 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. 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 closed routes. 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 motorized routes.

4.6.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to recreation. 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 recreation and other use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit recreation by facilitating adaptive management changes in response to changing on-the-ground

conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The recreation impacts of 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 impacts to recreation. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The recreation impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to recreation.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. 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 remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. The restriction in use of the existing "C" routes, and the elimination of the Johnson Valley to Parker route, would be a direct, adverse impact to recreation for participants in those events.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. 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.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. 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 would have 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.

PA VI: 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.

Alternative 2 Route Designation

Section 4.6.2 described the general impacts to recreation that are common to all alternatives. That analysis 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 recreation users. The mileage of routes available to the various different types of recreation users in the area under Alternative 2 is presented in Table 4.6-3.

Table 4.6-3. Alternative 2 - Miles of Routes which Support Recreation[1]

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes Designated for Activity				
ATV/UTV	3.7	0	0	0
Biking	0	0	0	0
Hiking	0	0	7.7	0
Motorcycling	24.1	0	0	0
Competitive "C" Routes	41.4	0	0	0
Miles of Routes for Access to Activity				
Cabin Site	25.8	0	0	28.3
Camping	431.7	0	1.3	399.3
Caving	20.5	0.2	0	12.3
Guzzler	49.6	0	0	48.3
Horseback Riding	0.1	0	0	0
Motorized Staging Area	96.8	0	0	50.5
OHV	0	0	0	0
Overlook	175.1	0	0	145.5
Rockhounding	553.4	11.0	0	809.0
Target Shooting	99.4	0	0	80.3
Trailhead	17.0	0	0	18.3

[1] The sub-designation mileages are considered preliminary, and are likely to be revised prior to issuing the Final SEIS.

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 hazards associated with Alternative 2 is presented in Table 4.6-4.

Table 4.6-4. Alternative 2 - Miles of Routes in Proximity to Safety Hazards

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	15.78	0.4	0	57.4

Alternative 2 decreases the overall miles of motorized routes by 845 miles from Alternative 1. Alternative 2 creates a 7.7 mile network of bicycle routes while Alternative 1 has 0 miles of routes specified for this type of use. Alternative 2 creates a 3.7 mile network of ATV/UTV routes, while Alternative 1 has 0 miles of routes specified for this type of use. Alternative 2 creates a 24.1 mile network of motorcycle routes, while Alternative 1 has 36.4 miles of designated motorcycle routes. Alternative 2 provides for 7.7 miles of non-mechanized routes for hiking, compared to 2.1 miles for Alternative 1.

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. In general, these measures focus on resource protection, and therefore place restrictions on the development of new routes to support recreation. 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 closed routes. 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 motorized routes.

4.6.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on recreation is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to recreation under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. 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 20-30 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 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. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Pit areas would be limited to those areas previously dedicated as Pit areas along the route. The elimination of the Johnson Valley to Parker route would be a direct, adverse impact to recreation for participants in those events. 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.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. This would result in a direct, adverse impact to recreational uses of Koehn lakebed, but an overall beneficial impact by opening the other three lakebeds to recreational uses.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The requirement for visitors to obtain a use permit before using a motor vehicle 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 a motor vehicle 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: 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 to the allowed stopping, parking, and camping distance 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 94 feet from the edge of the road once the 6 feet from center line is subtracted from the allowed 100 feet. The impact would be predominately affect by 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 these recreational users require larger spaces to pull off the road and get turned around within. Additionally, recreationalists 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.

Alternative 3 Route Designation

Section 4.6.2 described the general impacts to recreation that are common to all alternatives. That analysis 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 recreation users. The mileage of routes available to the various different types of recreation users in the area under Alternative 3 is presented in Table 4.6-5.

Table 4.6-5. Alternative 3 - Miles of Routes which Support Recreation[1]

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes Designated for Activity				
ATV/UTV	0.5	0	0	0
Biking	0	28.5	0	0
Hiking	0	0	8.4	0
Motorcycling	35.6	0	0	0
Competitive "C" Routes	92.4	0	0	0
Miles of Routes for Access to Activity				
Cabin Site	39.2	0	0	14.9
Camping	506.6	6.6	0	189.3
Caving	312.6	0	0	3.9
Guzzler	81.4	0	0	16.5
Horseback Riding	0.1	0	0	0
Motorized Staging Area	126.9	0	0	20.8

Table 4.6-5. Alternative 3 - Miles of Routes which Support Recreation[1]

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
OHV	0	0	0	0
Overlook	263.7	0	0	54.3
Rockhounding	1,095.6	11.4	0	254.8
Target Shooting	144.4	0	0	33.49
Trailhead	28.7	0	0	7.7

[1] The sub-designation mileages are considered preliminary, and are likely to be revised prior to issuing the Final SEIS.

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 hazards associated with Alternative 3 is presented in Table 4.6-6.

Table 4.6-6. Alternative 3 - Miles of Routes in Proximity to Safety Hazards

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	48.6	0.7	0.5	23.8

Alternative 3 increases the overall miles of motorized routes by 4,788 miles from Alternative 1. Alternative 3 creates a 28.5 mile network of bicycle routes while Alternative 1 has 0 miles of routes specified for this type of use. Alternative 3 creates an 0.5 mile network of ATV/UTV routes, while Alternative 1 has 0 miles of routes specified for this type of use. Alternative 3 creates a 35.6 mile network of motorcycle routes, while Alternative 1 has 36.4 miles of designated motorcycle routes. Alternative 3 provides for 8.4 miles of non-mechanized routes for hiking, compared to 2.1 miles for Alternative 1.

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.

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. In general, these measures focus on resource protection, and

therefore place restrictions on the development of new routes to support recreation. 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 closed routes. 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 motorized routes.

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.

4.6.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on recreation is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 recreation. However, this decision would make it easier for BLM to consider public and local agency interest in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on recreation.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to recreation under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. There are approximately 20-30 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. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures. This alternative would provide a corridor that enhances organized vehicle riding opportunities within the Open Area.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The recreation impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles. This would result in a direct, beneficial impact by opening these three lakebeds to recreational uses.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. 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: Alternative 4 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 to the allowed stopping, parking, and camping distance 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 94 feet from the edge of the road once the 6 feet from center line is subtracted from the allowed 100 feet. The impact would be 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 these recreational users require larger spaces to pull off the road and get turned around within. Additionally, recreationalists 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.

Alternative 4 Route Designation

Section 4.6.2 described the general impacts to recreation that are common to all alternatives. That analysis 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 recreation users. The mileage of routes available to the various different types of recreation users in the area under Alternative 4 is presented in Table 4.6-7.

Table 4.6-7. Alternative 4 - Miles of Routes which Support Recreation[1]

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Routes Designated for Activity				
ATV/UTV	132.8	0	0	0
Biking	0	38.4	0	0
Hiking	0	0	32.4	0
Motorcycling	117.7	0	0	0
Competitive "C" Routes	72.3	0	0	0
Miles of Routes for Access to Activity				
Cabin Site	27.1	0	0	27.0
Camping	566.8	17.8	2.4	235.5
Caving	22.3	0	0	5.9
Guzzler	61.7	0	0	35.5
Horseback Riding	0.1	0	0	0
Motorized Staging Area	113.7	0	0	33.6
OHV	6.1	0	0	4.0
Overlook	232.2	0	0	82.7
Rockhounding	699.5	26.8	0	639.7
Target Shooting	115.4	0	0.3	57.9
Trailhead	23.5	0	0	12.8

[1] The sub-designation mileages are considered preliminary, and are likely to be revised prior to issuing the Final SEIS.

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 hazards associated with Alternative 4 is presented in Table 4.6-8.

Table 4.6-8. Alternative 4 - Miles of Routes in Proximity to Safety Hazards

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Mileage Within 100 Feet of Abandoned Mine or Other Identified Safety Hazard	22.1	0.3	0.3	50.7

Alternative 4 increases the overall miles of motorized routes by 237 miles from Alternative 1. Alternative 4 creates a 38.4 mile network of bicycle routes while Alternative 1 has 0 miles of routes specified for this type of use. Alternative 4 creates a 132.8 mile network of ATV/UTV routes, while Alternative 1 has 0 miles of routes specified for this type of use. Alternative 4 creates a 117.7 mile network of motorcycle routes, while Alternative 1 has 36.4 miles of designated motorcycle routes. Alternative 4 provides for 32.4 miles of non-mechanized routes for hiking, compared to 2.1 miles for Alternative 1.

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. In general, these measures focus on resource protection, and therefore place restrictions on the development of new routes to support recreation. 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 closed routes. 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 motorized routes.

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.

4.7 Livestock Grazing

4.7.1 Introduction

Affected Environment Summary

Section 3.7 describes the livestock grazing that occurs in the West Mojave Planning Area. There are currently 19 grazing allotments (areas designated as suitable for grazing of domestic livestock in the CDCA Plan, as amended) on BLM land within the planning area, as shown on Table 3.7-1. The CDCA Plan identified 31 grazing allotments within the West Mojave Planning Area. As a result of the 2006 WEMO plan amendment, the 2012 Appropriations Act, and 2016 DRECP LUPA, 12 of these of these allotments have been relinquished, or are currently not available for grazing.

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. 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.

For this SEIS for the WMRNP, BLM performed the following:

- The status of each of the grazing allotments in the planning area was updated, and this information is provided in Section 3.7. This information shows that many of the allotments have been relinquished. Those which have been renewed have been subject to additional NEPA analysis through Environmental Assessments.
- The route designation process for each alternative included evaluation of the location of each route with respect to grazing allotments and range improvements.
- The 2005 WEMO analysis was re-evaluated, and supplemented with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.7.2 below.
- The impacts of cumulative impacts of grazing, in combination with OHVs and other land uses, are addressed in Section 4.15. This includes an evaluation of grazing impacts on all resources, not just soil, riparian areas, and UPA resources.

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 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 Ibs/acre (non-DT ACEC) and 350 Ibs/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 permanently eliminate livestock grazing on the allotments.

The designated transportation network supports livestock grazing by providing access to the 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 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.

As shown in Tables 2.3-4 and 2.3-7, 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 motorized. 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed 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 motorized 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: Conservation	115,106	1,146,420
3: Access	0	1,261,526
4: Proposed Action	0	1,261,526

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For potential impacts to grazing allotments, these include:

- 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; and
- Determination that no additional minimization and mitigation measure is needed based on site evaluation.

Residual Impacts After Implementation of Mitigation Measures

Only minor residual effects to grazing would be expected after application of mitigation measures. Motorized use of routes within grazing allotments, or near range improvements, are 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.

4.7.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to grazing. 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 grazing and use other factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit grazing 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Because these activities do not currently impact livestock grazing, the No Action Alternative would have no direct or indirect impact on livestock grazing.

PA VII: Under this alternative, 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 1 Route Designation

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, closure of routes that provide access to range improvements 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 the No Action Alternative are presented in Table 4.7-2.

Table 4.7-2. Alternative 1 - Acreage and Mileage of Routes in Proximity to Range Improvements

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Acreage and Mileage Within Active Grazing Allotments	1,493.9	2,739.1	80,628.0
Mileage of Routes Passing Within 30 Feet of Range Improvement	4.9	6.4	126.4

Alternative 1 Minimization and Mitigation Measures

Because no adverse impacts were identified for the No Action Alternative, no alternative-specific minimization and mitigation measures were developed to address impacts to livestock grazing.

4.7.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to grazing. 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 grazing and other use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit grazing by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to grazing of 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 impacts to grazing. 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 closure, 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, consistent with 43 CFR 8342.1 that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts to grazing of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process.

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 / livestock impacts within the allotments. Designating "C" routes in Alternative 2 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.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. This decision is not expected to have any beneficial or adverse impacts to grazing. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989;

therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on grazing by increasing the recreational use of routes in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. These lakebeds are not associated with grazing allotments or access to range improvements. Therefore, the closure of motorized access on Koehn lakebed would not have any impact on grazing. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on grazing by increasing the recreational use of routes in other areas.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. Because access in this area does not currently impact livestock grazing, Alternative 2 would have no direct or indirect impact on livestock grazing.

PA VI: 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 is not expected to have any effect on motorized use of routes to support grazing operations, and would therefore not have any impact on grazing.

PA VII: Alternative 2 would discontinue livestock grazing in 115,106 acres, consistent with 43 CFR 4130.2(a).

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.

Alternative 2 Route Designation

Section 4.7.2 described the general impacts to livestock grazing that are common to all alternatives. That analysis concluded that the size of the available transportation network within an allotment can have beneficial or adverse impacts to the operations of a lessee. Similarly, closure of routes that provide access to range improvements would present an adverse impact, if it occurred. The mileage of routes within grazing allotments, and the number of routes providing access to range improvements under Alternative 2, is presented in Table 4.7-3.

Table 4.7-3. Alternative 2 - Acreage and Mileage of Routes in Proximity to Range Improvements

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Acreage and Mileage Within Active Grazing Allotments	1,244.1	2,988.9	14,365.1
Mileage of Routes Passing Within 30 Feet of Range Improvement	6.9	4.3	51.3

Alternative 2 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 2, no alternative-specific minimization and mitigation measures were developed to address impacts to grazing allotments.

4.7.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on grazing is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to grazing under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. Designating "C" routes in Alternative 3 would impact both the Cantil Common and Spangler Hills Allotment. There is no seasonal restriction, and therefore collisions might occur. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the impacts of those routes to grazing would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. These lakebeds are not associated with grazing allotments or access to range improvements, and therefore the change in access on the lakebeds would not have any beneficial or adverse impact on grazing.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to 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: 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 is not expected to have any effect on motorized use of routes to support grazing operations, and would therefore not have any impact on grazing.

PA VII: There would be no changes to grazing allotments under Alternative 3, and therefore no direct or indirect impact to any grazing operations.

Alternative 3 Route Designation

Section 4.7.2 described the general impacts to livestock grazing that are common to all alternatives. That analysis concluded that the size of the available transportation network within an allotment can have beneficial or adverse impacts to the operations of a lessee. Similarly, closure of routes that provide access to range improvements would present an adverse impact, if it occurred. The mileage of routes within grazing allotments, and the number of routes providing access to range improvements under Alternative 3, is presented in Table 4.7-4.

Table 4.7-4. Alternative 3 - Acreage and Mileage of Routes in Proximity to Range Improvements

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Acreage and Mileage Within Active Grazing Allotments	3,031.5	1,201.6	56,864.3
Mileage of Routes Passing Within 30 Feet of Range Improvement	10.4	0.9	123.8

Alternative 3 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 3, no alternative-specific minimization and mitigation measures were developed to address impacts to grazing allotments.

4.7.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on grazing is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 grazing. However, this decision would make it easier for BLM to consider grazing impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on grazing.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to grazing under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. Designating these "C" Routes in Alternative 4 would impact both the Cantil Common and Spangler Hills Allotment. There is no seasonal restriction, and therefore collisions might occur. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. These lakebeds are not associated with grazing allotments or access to range improvements, and therefore the change in access on the lakebeds would not have any beneficial or adverse impact on grazing. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 is not expected to have any effect on motorized use of routes to support grazing operations, and would therefore not have any impact on grazing.

PA VII: There would be no changes to grazing allotments under Alternative 4, and therefore no direct or indirect impact to any grazing operations.

Alternative 4 Route Designation

Section 4.7.2 described the general impacts to livestock grazing that are common to all alternatives. That analysis concluded that the size of the available transportation network within an allotment can have beneficial or adverse impacts to the operations of a grazing lessee. Similarly, closure of routes that provide access to range improvements would present an adverse impact, if it occurred. The mileage of routes within grazing allotments, and the number of routes providing access to range improvements under Alternative 4, is presented in Table 4.7-5.

Table 4.7-5. Alternative 4 - Acreage and Mileage of Routes in Proximity to Range Improvements

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping (Acreage)
Acreage and Mileage Within Active Grazing Allotments	1,964.4	2,268.8	22,617.7
Mileage of Routes Passing Within 30 Feet of Range Improvement	4.4	6.9	61.0

Alternative 4 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 4, no alternative-specific minimization and mitigation measures were developed to address impacts to grazing allotments.

4.8 Energy Production, Utility Corridors, and Other Land Uses

4.8.1 Introduction

Affected Environment Summary

Section 3.8 describes the land uses in the planning area. 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.

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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of potential user conflicts between authorized users and casual or recreational use.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.8.2 below.

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. As shown in Tables 2.3-4 and 2.3-7, all motorized 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 motorized-open. Routes that are not available to the public become designated as motorized-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, all routes that have authorized access for a specific user were determined to be necessary to the operations of that user, and were designated as motorized. 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 to 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 vehicular access for mineral exploration. For all alternatives, vehicular access is available to at least the general area of existing mineral interest.

In areas with no designated routes, operators can obtain authorization for vehicular 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed under the various alternatives. Routes that are currently used for authorized land uses would be designated as motorized-limited or motorized-open. Motorized-limited 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.

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.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For potential conflicts resulting from multiple users, these include:

- 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.

Residual Impacts After Implementation of Mitigation Measures

Only minor residual effects to other land uses would be expected after application of mitigation measures. Motorized 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.

4.8.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to other authorized land uses. 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 authorized land uses and other use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit other authorized land 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-

Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Because these activities do not affect other land uses, the No Action Alternative would have no direct or indirect impact on other land uses.

Alternative 1 Route Designation

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 motorized 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.

Alternative 1 Minimization and Mitigation Measures

Because no adverse impacts were identified for the No Action Alternative, no alternative-specific minimization and mitigation measures were developed to address impacts to energy, mineral, or other land uses.

4.8.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to other authorized land uses. 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 other authorized land uses and other factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit other authorized land uses by facilitating adaptive management changes in response to changing on-

the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to other authorized land uses of 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 impacts to other authorized land uses. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to other authorized land uses under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to other authorized land uses.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. Restricting the use to these months would not result in any impacts to other authorized users.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. Elimination of the Johnson Valley to Parker route would not result in any impacts to other authorized users. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this

competitive event route. Therefore, this plan amendment decision would not have any effect on other authorized land uses by increasing the recreational use of routes in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. These lakebeds are not associated with access to other authorized land uses. Therefore, the closure of motorized access on Koehn lakebed would not have any impact on other authorized land uses. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on other authorized land uses by increasing the recreational use of routes in other areas.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. Because access in this area does not affect other land uses, Alternative 2 would have no direct or indirect impact on other land uses.

PA VI: 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 is not expected to have any effect on motorized use of routes to support other authorized land uses, and would therefore not have any impact on land uses.

Alternative 2 Route Designation

Section 4.8.2 described the general impacts to energy, mineral, and other land uses that are common to all alternatives. That analysis 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 motorized 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.

Alternative 2 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 2, no alternative-specific minimization and mitigation measures were developed to address impacts to energy, mineral, or other land users.

4.8.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on other authorized land uses is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions on other authorized land uses under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. The use of routes for competitive events is not expected to impact other authorized land uses. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the impacts to other authorized land uses of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. These lakebeds are not associated with access to other authorized land uses, and therefore modification of motorized access on these lakebeds would not have any beneficial or adverse impact on those land uses.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. Elimination of the permit requirement for recreational users is not expected to result in a substantial increase in use of the route, and would therefore have no effect on authorized users of the route.

PA VI: 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 is not expected to have any effect on motorized use of routes to support other authorized land uses, and would therefore not have any impact on land uses.

Alternative 3 Route Designation

Section 4.8.2 described the general impacts to energy, mineral, and other land uses that are common to all alternatives. That analysis 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 motorized 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.

Alternative 3 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 3, no alternative-specific minimization and mitigation measures were developed to address impacts to energy, mineral, or other land users.

4.8.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on other authorized land uses is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 other authorized land uses. However, this decision would make it easier for BLM to consider impacts to other authorized land uses in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on these other land uses.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation

of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions on other authorized land uses under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized 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 Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures. The use of these routes would not result in any impacts to other authorized users.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. These lakebeds are not associated with access to other authorized land uses, and therefore modification of motorized access on these lakebeds would not have any beneficial or adverse impact on those land uses. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 is not expected to have any effect on motorized use of routes to support other authorized land uses, and would therefore not have any impact on land uses.

Alternative 4 Route Designation

Section 4.8.2 described the general impacts to energy, mineral, and other land uses that are common to all alternatives. That analysis 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 motorized 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.

Alternative 4 Minimization and Mitigation Measures

Because no adverse impacts were identified for Alternative 4, no alternative-specific minimization and mitigation measures were developed to address impacts to energy, mineral, or other land users.

4.9 Cultural Resources

4.9.1 Introduction

Affected Environment Summary

Section 3.9 describes the cultural resources in the West Mojave planning area. The area contains 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, historic roads, historic railroads, and historic trash scatters.

Sites in the planning area have been identified and managed in several ways. 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 from stratified random sample surveys to intensive purposive surveys. As of January 1, 1980, there were an estimated 14,229 recorded cultural resources within the CDCA, which includes the WEMO Planning Area as well as the 16 million acres south of WEMO that are within the CDCA.

Although historic properties within the WEMO planning area are listed on the NRHP or CRHR, most cultural resources have not been evaluated for their significance or eligibility for listing in any formal roster of significant sites. The BLM field offices maintain paper records of all sites within their jurisdiction, as well as a statewide GIS geodatabase of sites and surveys in accordance with BLM policy for cultural resource record management. Some of the significant known cultural resources are also managed by BLM as ACECs, with 17 ACECs within the planning area identified as being significant for their cultural resource values. The planning area is also the location of portions of the Old Spanish National Historic Trail and the Walker Pass National Historic Landmark, both designated by Congress. Many significant paleontological localities are found within the planning area.

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.

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.
- BLM conducted field monitoring of 87 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.
- The route designation process for each alternative included evaluation of the location of each route with respect to known cultural resources mapped in GIS.
- BLM conducted GIS-based route evaluation and quantified the miles of motorized routes that could potentially impact known cultural resources and the number of resources potentially impacted by motorized routes across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- BLM re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists and public comments. This additional information is incorporated into the evaluation in Section 4.9.2 below.

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.

Motorized vehicle routes across or near archaeological sites affect those sites in various ways, depending upon the nature of the archaeological materials, the nature of the soils at the site and in the immediate vicinity, and the topography of the immediate area. Softer soils, and especially "midden" soils, 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 motorized 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 closed (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 motorized 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 closure of routes 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, closures 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 motorized 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 motorized 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. These minimization and mitigation measures differ among the alternatives, and are therefore discussed in more detail in Sections 4.9.3, 4.9.4, 4.9.5, and 4.9.6 below.

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. However, BLM is developing 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 closed routes. 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 closure. 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 closure of routes or areas. "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.

Under 40 CFR 1502.22, when an agency evaluates a reasonably foreseeable significant adverse environmental effect and there is incomplete or unavailable information, the agency is required to make clear the information is lacking. If the cost of obtaining the information is not exorbitant, the agency is directed to secure and include the information in the environmental document. Id. If the information cannot be obtained because the overall cost of obtaining it is exorbitant or the means to obtain it are not known, the agency must include a statement that 1) the information is incomplete or unavailable, 2) the relevance of the incomplete or unavailable information to evaluate the reasonably foreseeable significant adverse effects on the environment, 3) a summary of the existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse effects on the environment, and 4) the agency's evaluation of impact based upon theoretical approaches or research methods are generally accepted in the scientific community.

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 is broader in this document since it includes cultural and tribal values beyond 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 impact cultural resources. Impacts to cultural resources from livestock grazing are analyzed on a case-by-case, permit-by-permit basis. The BLM California utilizes the Supplement (See Chapter 1.7) in addressing livestock grazing authorizations.

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 liner 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, the BLM California Supplement 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 exclosure of livestock from the cultural resource sufficient to ensure long-term protection, according to the following specifications:
  - the area within the exclosure must be inventoried to locate and record all cultural resources; and
  - the exclosure (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 exclosing 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.

Resource-Specific Minimization and Mitigation Measures

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, 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 exclosure 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).

Residual Impacts After Implementation of Mitigation Measures

Residual effects to cultural resource could continue after application of mitigation measures. Although impacts would be reduced from those that would have existed without mitigation measures, motorized vehicles and livestock may still enter undisturbed areas and adversely impact unidentified resources.

4.9.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to cultural resources. 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 cultural resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit cultural resources 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program.

Changes to motorized vehicle use in the locations specified in these decisions under the action alternatives do have the potential to affect cultural resources, if such resources exist in those locations. 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 motor vehicle 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 the No Action Alternative, 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.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that motorized vehicles 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 motorized vehicles, 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 the No Action Alternative is presented in Table 4.9-1, and the number of currently known sites which may be affected by routes 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 motorized routes within each tribal area.

Table 4.9-1. Alternative 1 - Miles of Routes in Proximity to Previously Recorded Cultural Resources

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Within a Known Site	377.6	284.2
Within 0-50 Feet of a Known Site	159.9	132.5
Within 50-100 Feet of a Known Site	127.1	125.6
Within 100-300 Feet of a Known Site	484.2	716.9

Table 4.9-2. Alternative 1 – Number of Previously Recorded Sites in Proximity to Routes

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Known Sites Intersected by a Route	1,133	768
Known Sites Within 0-50 Feet of a Route	1,133	361
Known Sites Within 50-100 Feet of a Route	289	254
Known Sites Within 100-300 Feet of a Route	760	792

While numbers of sites within 300 feet of closed routes (transportation linear disturbances) are also notably high, the management decisions for transportation linear disturbances are more likely to protect cultural resource values, either through hard closures or signing.

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to cultural resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, 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. 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 motorized routes.

4.9.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to cultural resources. 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 cultural resource and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit cultural resources by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The cultural resource impacts of 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 impacts to cultural resources. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The cultural resources impacts of these decisions under Alternative 2 are as follows:

PA III: Competitive events may authorize large numbers of vehicles using a particular route and encourage the use of areas adjacent to routes by spectators. Cultural resources that occur within routes or immediately adjacent to routes may be subject to impacts in various ways, depending on the nature of the cultural resources present, the nature of the soils at the site and in the immediate vicinity, and the topography of the immediate area.

It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to cultural resources. Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized

events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. 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. 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.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. The elimination of the Johnson Valley to Parker event may reduce impacts to cultural resources in that area. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment is not anticipated to have an adverse impact on cultural resources.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. The lakebeds may be associated with known or unknown cultural resources. Therefore, 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. Use of the other three lakebeds is not anticipated to change under this alternative. Therefore, this plan amendment is not anticipated to have an adverse impact on cultural resources.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. 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, as described under the No Action Alternative.

PA VI: 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 reduce the potential for motorized vehicle use to impact cultural resources in those areas. The effect of these actions would be a net beneficial impact on cultural resources.

PA VII: 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.

Alternative 2 Route Designation

Section 4.9.2 described the general impacts to cultural resources that are common to all alternatives. That analysis concluded that motorized vehicles 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 motorized vehicles, 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 Alternative 2 is presented in Table 4.9-3, and the number of sites which may be affected by routes is presented in Table 4.9-4. 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 motorized routes within each tribal area.

Table 4.9-3. Alternative 2 - Miles of Routes in Proximity to Previously Recorded Cultural Resources

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Within a Known Site	339.1	322.7
Within 0-50 Feet of a Known Site	150.3	142.1
Within 50-100 Feet of a Known Site	125.3	127.3
Within 100-300 Feet of a Known Site	447.0	753.9

Table 4.9-4. Alternative 2 – Number of Previously Recorded Sites in Proximity to Routes

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Known Sites Intersected by a Route	659	807
Known Sites Within 0-50 Feet of a Route	370	395
Known Sites Within 50-100 Feet of a Route	296	251
Known Sites Within 100-300 Feet of a Route	707	793

The limitation of stopping and parking to 50 feet throughout the planning area greatly reduces the number of sites potentially impacted by routes. This decreases the total number of sites potentially impacted from 3,315 in the No Action Alternative to 1,029 in Alternative 2.

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce impacts to cultural resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines would reduce the potential for damage to unidentified cultural resources adjacent to routes. 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 motorized routes. 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.

4.9.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on cultural resources is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The cultural resource impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. 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. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the cultural resource impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. The lakebeds may be associated with known or unknown cultural resources. Therefore, this decision could have a direct, beneficial effect on cultural resources associated with the Koehn lakebed, which would be closed, but an adverse impact on cultural resources on the other three lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle 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: 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 reduce the potential for motorized vehicle use to impact cultural resources in those areas. The effect of this plan amendment decision would be a net beneficial impact on cultural resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Under Alternative 3, 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.

Alternative 3 Route Designation

Section 4.9.2 described the general impacts to cultural resources that are common to all alternatives. That analysis concluded that motorized vehicles 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 motorized vehicles, 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 Alternative 3 is presented in Table 4.9-5, and the number of sites which may be affected by routes is presented in Table 4.9-6. 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 motorized routes within each tribal area.

Table 4.9-5. Alternative 3 - Miles of Routes in Proximity to Previously Recorded Cultural Resources

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Within a Known Site	467.25	194.6
Within 0-50 Feet of a Known Site	214.3	78.2
Within 50-100 Feet of a Known Site	187.4	65.3
Within 100-300 Feet of a Known Site	848.6	352.8

Table 4.9-6. Alternative 3 – Number of Previously Recorded Sites in Proximity to Routes

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Known Sites Intersected by a Route	965	462
Known Sites Within 0-50 Feet of a Route	521	202
Known Sites Within 50-100 Feet of a Route	358	136
Known Sites Within 100-300 Feet of a Route	858	435

Alternative 3 designations emphasize increased access throughout the planning area. The reduction of stopping and parking from 300 feet to 100 feet from route centerlines in areas outside of DT ACECs decreases the total number of sites potentially impacted from 3,315 in the No Action Alternative to 1,844 in Alternative 3.

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce impacts to cultural resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed

routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce the potential for damage to unidentified cultural resources adjacent to routes. 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 motorized routes. 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.

4.9.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on cultural resources is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 cultural resources. However, this decision would make it easier for BLM to consider cultural resource impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on cultural resources.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions on cultural resources under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. 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 or South of 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 Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The cultural resource impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles. The lakebeds may be associated with known or unknown cultural resources. Therefore, this decision could have a direct, adverse impact on cultural resources on Cuddeback, Coyote, and Chisholm Trail Lake lakebeds.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle 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: Alternative 4 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 reduce the potential for motorized vehicle use to impact cultural resources in those areas. The effect of this plan amendment decision would be a net beneficial impact on cultural resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Under Alternative 4, livestock grazing outside of DT ACECs would continue under the terms and conditions in the Final Grazing Decisions issued for active grazing allotments with WEMO. Table 4.9-1 provides the total number of resources per allotment that may be impacted by livestock grazing.

Alternative 4 Route Designation

Section 4.9.2 described the general impacts to cultural resources that are common to all alternatives. That analysis concluded that motorized vehicles 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 motorized vehicles, 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 Alternative 4 is presented in Table 4.9-7, and the number of sites which may be affected by routes is presented in Table 4.9-8. 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 motorized routes within each tribal area.

Table 4.9-7. Alternative 4 - Miles of Routes in Proximity to Previously Recorded Cultural Resources

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Within a Known Site	416.4	245.5
Within 0-50 Feet of a Known Site	168.6	123.8
Within 50-100 Feet of a Known Site	136.5	116.1
Within 100-300 Feet of a Known Site	532.6	668.8

Table 4.9-8. Alternative 4 – Number of Previously Recorded Sites in Proximity to Routes

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)
Known Sites Intersected by a Route	783	718
Known Sites Within 0-50 Feet of a Route	428	336
Known Sites Within 50-100 Feet of a Route	313	244
Known Sites Within 100-300 Feet of a Route	770	759

The reduction of stopping and parking from 300 feet to 100 feet from route centerlines in areas outside of DT ACECs decreases the total number of sites potentially impacted from 3,315 in the No Action Alternative to 1,524 in Alternative 4.

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce impacts to cultural resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT

ACECs and 100 feet from route centerlines outside of DT ACECs would reduce the potential for damage to unidentified cultural resources adjacent to routes. 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 motorized routes. 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.

4.10 Visual Resources

4.10.1 Introduction

Affected Environment Summary

Section 3.10 describes the visual resources within the planning area. The West Mojave Planning area is highly fragmented. It includes relatively undisturbed areas outside of designated wilderness areas that are a major attraction for recreation users and tourists for whom scenic values and visual open space are important. However, portions of the planning area have also experienced a high degree of human modification due to urban development, its associated infrastructure and uses, and energy development. Management direction aimed at preserving sensitive viewsheds competes with other land use allocation decisions and management activities for urban development, infrastructure needs, energy development, recreation uses, and other surface-use activities.

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.

For this SEIS for the WMRNP, BLM performed the following:

- Since the 2005 WEMO EIS, BLM had completed Visual Resource Inventories throughout the planning area. This information is presented in Section 3.10.
- The route designation process for each alternative included evaluation of the location of each route with respect to lands in Visual Resource Management (VRM) Classes I through IV.
- Conducted the evaluation, and quantified the miles of motorized routes and closed routes within each VRM class across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.10.2 below.

4.10.2 Impacts Common to All Alternatives

In general, motorized routes present a contrast, in terms of color, form, and line with the surrounding landscape, and therefore may represent an adverse impact to visual resource values. Similarly, the presence of motorized vehicles 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. Closure and reclamation of routes would eliminate the presence of vehicles and fugitive dust in the short-term. In the longer term, closure and reclamation would reduce the impacts of the routes themselves as they begin to re-vegetate and disappear due to non-use. In general, management prescriptions such as closing routes 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.

The level of impact depends not only on the number and mileage of routes and their use levels, but also on the VRM Class Objectives of the area. In Class III and IV areas, routes and vehicles may not be dominant, or even noticeable, and while the impact would still be considered adverse, it would be limited in magnitude. In Class I and II areas, where the objectives are to avoid attracting the attention of a casual viewer, the magnitude of the impact becomes more severe. However, the VRM Classes approved in the 2016 DRECP LUPA were based on existing conditions, and impacts to these classes are based on changes in existing conditions. Because the WMRNP would not authorize any new ground disturbance or changes in the amount of motorized vehicle travel in any area, none of the WMRNP plan amendment or route network alternatives would have an adverse impact to visual resources. Instead, because all action alternatives close routes and eventually result in revegetation, any of the action alternatives would be considered to be beneficial to visual resources.

Although motorized vehicle access is considered to be an adverse impact to the resource, it is also necessary, in many areas, to provide access for viewers to enjoy the visual resources in the region. Therefore, the level of impact can be subjective, depending on the viewer. Hikers would likely prefer a vista with no visible transportation linear features at all. Bikers and horseback riders may desire that non-motorized or non-mechanized routes be designated to provide them access, but would still prefer areas with no motorized routes. Motorized users may prefer an area specifically designated for their preferred mode of transport. Therefore, it is not so simple to conclude that a greater number of routes is equivalent to more visual resource impacts. Generally, routes with higher maintenance and use classes result in more substantial impacts to visual resources.

Chapter 2 discusses the general resource protection and motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed under the various 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 motorized vehicle 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.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For visual resources, these include:

- Modify access to a less impacting designation;
- Restrict stopping/parking/camping;
- Install barriers and maintain or upgrade existing barriers;
- Install/utilize features to reduce visual impact;
- Remove attractants; and
- Determine that no additional minimization and mitigation measure is needed based on site evaluation.

Residual Impacts After Implementation of Mitigation Measures

Residual effects to visual resources would continue after application of mitigation measures. Although closure of routes 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.

4.10.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to visual resources. 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 visual resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit visual resources 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation

of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. Because these activities do not affect visual resources, the No Action Alternative would have no direct or indirect impact on visual resources.

Alternative 1 Route Designation

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. Although the presence of more routes, especially in Class I and II areas, is considered to be adverse to visual resource values, the presence of these routes is also needed to provide access to the observers. In addition, the closure of routes results in a nominal reduction of adverse impacts to visual resources. 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 closed routes are actively rehabilitated, and generally are disguised to line of sight from open routes. The mileage of routes within each Visual Resource Class in the planning area under the No Action Alternative is presented in Table 4.10-1.

Table 4.10-1. Alternative 1 - Miles of Routes in Visual Resource Classes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
VRM Class I	49.1	0	5.1	411.7
VRM Class II	966.0	0.9	1.0	1,734.8
VRM Class III	2,953.2	0.1	1.8	4,743.3
VRM Class IV	1,864.1	0	0	3,040.7

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to visual resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, 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. 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 motorized routes.

4.10.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to visual resources. 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 visual resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit visual resources by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to visual resources 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 impacts to visual resources. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable

stopping, parking, and camping distances, and changes to the livestock grazing program. The visual resource impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to visual resources.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. The visual resource inventory 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 may reduce their use for motorized events, and thus have localized beneficial impacts on visual resources near those routes.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on visual resources by increasing the recreational use of routes in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. Although the presence of more routes and vehicles is considered to be adverse to visual resource values, the presence of these routes is also needed to provide access to the observers. Therefore, the closure of Koehn lakebed associated with this decision would have a beneficial impact in reducing motorized use of the lakebed, but could also have an adverse impact in limiting the ability of the public to access the visual vista available from the lakebeds. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on visual resources by increasing the recreational use of routes in other areas.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. Because access in this area does not affect visual resources, Alternative 2 would have no direct or indirect impact on visual resources.

PA VI: 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 reduce the potential for motorized vehicle use to create

additional disturbance, and would allow previously disturbed areas to re-vegetate. The effect of these actions would be a net beneficial impact on visual resources.

Alternative 2 Route Designation

Section 4.10.2 described the general impacts to visual resources that are common to all alternatives. That analysis 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. Although the presence of more routes, especially in Class I and II, is considered to be adverse to visual resource values, the presence of these routes is also needed to provide access to the observers. The mileage of routes within each Visual Resource Class in the planning area under Alternative 2 is presented in Table 4.10-2.

Table 4.10-2. Alternative 2 - Miles of Routes in Visual Resource Classes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
VRM Class I	61.8	0.4	10.7	393.0
VRM Class II	782.3	4.9	4.1	1,916.2
VRM Class III	2,595.4	1.4	26.8	5,042.0
VRM Class IV	1,575.0	2.5	1.0	3,378.8

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce impacts to visual resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for visual resource impacts. 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 motorized routes.

4.10.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on visual resources is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation

of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The visual resource impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. The visual resource inventory 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. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the visual resource impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. Although the presence of more routes and vehicles is considered to be adverse to visual resource values, the presence of these routes is also needed to provide access to the observers. Therefore, the modification of access to the lakebeds associated with this decision would have an adverse impact in increasing motorized use of vehicles on the lakebeds, but could also have a beneficial impact in increasing the ability of the public to access the visual vista available from the lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. Eliminating the permit requirement would not result in designation of additional routes or an increase in soil disturbance. 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 effect on visual resources.

PA VI: 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 reduce the potential for motorized vehicle use to create additional disturbance, and would allow previously disturbed areas to re-vegetate. The effect of these actions would be a net beneficial impact on visual resources.

Alternative 3 Route Designation

Section 4.10.2 described the general impacts to visual resources that are common to all alternatives. That analysis 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. Although the presence of more routes, especially in Class I and II, is considered to be adverse to visual resource values, the presence of these routes is also needed to provide access to the observers. The mileage of routes within each Visual Resource Class in the planning area under Alternative 3 is presented in Table 4.10-3.

Table 4.10-3. Alternative 3 - Miles of Routes in Visual Resource Classes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
VRM Class I	61.0	0	18.5	386.3
VRM Class II	1,897.0	9.3	51.0	750.5
VRM Class III	5,142.8	80.4	6.1	2,441.2
VRM Class IV	3,520.7	2.0	3.8	1,414.6

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce impacts to visual resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for visual resource impacts. 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 motorized routes.

4.10.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on visual resources is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso

sub-regions would be split from the Rands and Red Mountain sub-regions, 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 visual resources. However, this decision would make it easier for BLM to consider visual resource impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on visual resources.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The visual resource impacts of these decisions under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. The Visual resource inventory class for this 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 at approximately 11 and 142 acres respectively. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Although the presence of more routes and vehicles is considered to be adverse to visual resource values, the presence of these routes is also needed to provide access to the observers. Therefore, the modification of access to the lakebeds associated with this decision would have an adverse impact in increasing motorized use of vehicles on the lakebeds, but could also have a beneficial impact in increasing the ability of the public to access the visual vista available from the lakebeds. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 reduce the potential for motorized vehicle use to create additional disturbance, and would allow previously disturbed areas to re-vegetate. The effect of these actions would be a net beneficial impact on visual resources.

Alternative 4 Route Designation

Section 4.10.2 described the general impacts to visual resources that are common to all alternatives. That analysis 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. Although the presence of more routes, especially in Class I and II, is considered to be adverse to visual resource values, the presence of these routes is also needed to provide access to the observers. The mileage of routes within each Visual Resource Class in the planning area under Alternative 4 is presented in Table 4.10-4.

Table 4.10-4. Alternative 4 - Miles of Routes in Visual Resource Classes

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
VRM Class I	55.7	0	8.2	402.0
VRM Class II	1,078.3	40.0	52.4	1,533.2
VRM Class III	3,088.0	60.4	13.0	4,520.8
VRM Class IV	1,835.1	1.5	2.4	3,066.9

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce impacts to visual resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for visual resource impacts. 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 motorized routes.

4.11 Special Designations and Other Inventoried Areas

4.11.1 Introduction

Affected Environment Summary

Section 3.11 describes the specially designated areas within the planning area, which include wilderness, Wilderness Study Areas (WSAs), lands managed for wilderness characteristics, national monuments, ACECs, CDNCLs, and DT ACECs. These areas are managed to protect specific resources and values that were associated with their designation. Resources associated with designation of special designation areas in the West Mojave include wildlife, vegetation, archaeological, paleontological, scenic, geologic, riparian, and tribal values.

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 motorized vehicle 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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the location of each route with respect to ACECs, CDNCLs, DT ACECs, wilderness areas, WSAs, lands managed for wilderness characteristics, and national monuments. As discussed in Sections 3.4, 3.9, and other sections, BLM also evaluated the transportation network with respect to the biological, cultural, and other resources for which those areas were designated.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact special designation areas across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, changes in conditions within the planning area, and changes in the applicable regulatory framework for special designation areas and lands managed for wilderness characteristics. This additional information is incorporated into the evaluation in Section 4.11.2 below.

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 motorized vehicle 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 motorized routes and of non-mechanized and non-motorized trails are generally considered to have an adverse impact to these resources; closure of routes and trails, or conversion of routes to trails, is considered to be beneficial. However, the management of motorized vehicles 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 closed to vehicle 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 motorized routes of travel within wilderness for casual public use.

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 motorized vehicle 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 motorized and non-motorized mechanized vehicle 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 closure of routes that intersect with wilderness areas and in route proliferation areas within DT ACECs.
- Existing routes within WSAs may be designated as motorized primitive trails if they were already designated open under the No Action Alternative, or the trail may be redesignated

for non-mechanized or non-motorized use, or closed. Current policy does not provide for reconsideration of an existing route in WSA if it has been previously closed.

Chapter 2 discusses the general resource protection and motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 motorized 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 motorized 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 route closure. 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, maintained routes, along with OHV Open areas which were also factored into route designations.

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. These minimization and mitigation measures differ among the alternatives, and are therefore discussed in more detail in the Biological and Cultural Resources subsections 4.8, 4.9, and 4.15.

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

reasonably foreseeable future 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% 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 Ibs/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.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4.

For ACECs, CDNCLs, and national monuments, potential minimization and mitigation measures include:

- 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 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.

For wilderness study areas, potential minimization and mitigation measures include:

- Modify access to a less impacting designation;
- Limit the route to lower intensity use or prohibit Special Recreation Permitted use;
- Install access type restrictor;
- Restrict stopping/parking/camping;
- 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.

For lands managed for wilderness characteristics, potential minimization and mitigation measures include:

- Remove attractants;
- Modify access to a less impacting designation;
- Prohibit Special Recreation Permit Use;
- Install signs;
- Install barriers;
- Maintain existing barriers;
- Install step-overs;
- Monitor the route for signs of increasing impacts to a sensitive resource; and
- Determine that no additional minimization and mitigation measure is needed.

Residual Impacts After Implementation of Mitigation Measures

Residual effects to Special Designation areas would continue after application of mitigation measures, both with continued motorized vehicle use, and following closure of routes. Although impacts would be reduced from those that would have existed without mitigation measures, continued motorized vehicle 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 motorized vehicles, motorized vehicle noise, and disturbance of soil and vegetation. Closure of routes in those areas may not result in recovery in the short-term, unless active rehabilitation efforts are taken.

4.11.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to Special Designation areas. 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 Special Designations and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit Special Designation areas 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The West Rand ACEC and part of the Fremont-Kramer DT ACEC fall within the boundaries of the Rand Mountain-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.

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 reasonably foreseeable future 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% 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 Ibs/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.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that motorized vehicles 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, motorized vehicle 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 motorized routes within each area. Impacts associated with closure of routes 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, closure of routes near and leading to wilderness areas, national monuments, and other special designation areas would reduce the potential for incursions of motorized vehicles into those areas, and would thus be a beneficial impact to the values for which those areas were established. However, closure of routes within, near, or leading to special designation areas could also result in limiting public access to recreation in those areas, including the values (visual resources, wildlife, etc.) which attract recreational users. Closure of these routes 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 the No Action Alternative is presented in Table 4.11-1. The acreage and mileage of routes within specific ACECs and CDNCLs under the No Action Alternative is presented in Table 4.11-2.

Table 4.11-1. Alternative 1 – Acreage and Mileage of Routes in Special Designation Areas[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Areas of Critical Environmental Concern	2,759.8	4,493.6	152,604.8
California Desert National Conservation Lands	1,952.8	2,492.2	84,549.5
DT ACECs	2,197.0	2,551.2	25,079.3
Wilderness Areas	49.5	410.0	6,642.0
Wilderness Study Areas	69.3	115.4	4,808.0
Lands Managed for Wilderness Characteristics	158.0	104.3	6,419.6
National Monuments	377.3	292.5	13,152.0

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 limits are specified.

Table 4.11-2. Alternative 1 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/Parking/ Camping[2] (Acreage)
ACECs			
Afton Canyon	15.6	32.7	904.3
Amboy Crater	0	0.5	0
Ayres Rock	4.3	2.0	152.6
Barstow Woolly Sunflower	48.4	56.9	584.6
Bedrock Spring	2.0	5.3	124.8
Bendires Thrasher Conservation Area	17.0	30.0	1,205.2
Big Morongo Canyon	10.8	19.2	623.8
Big Rock Creek Wash	0	0.6	0
Black Mountain	89.0	55.9	5,309.5
Brisbane Valley Monkeyflower	29.4	63.6	1,988.7
Bristol	165.4	73.9	920.4
Cady Mountains WSA	47.1	84.0	3,225.2
Calico Early Man Site	5.9	3.2	88.5

Table 4.11-2. Alternative 1 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/Parking/ Camping[2] (Acreage)
Carbonate Endemic Plants Research Natural Area	18.9	9.9	1,288.9
Christmas Canyon	0	0	0
Coolgardie Mesa	25.2	71.2	1,607.6
Cronese Basin	11.5	13.3	695.6
Daggett Ridge Monkeyflower	57.1	54.4	3,396.1
Desert Tortoise Research Natural Area	3.3	130.5	50.6
Eagles Flyway	41.5	5.1	2,298.8
El Paso to Golden	266.5	327.6	16,057.3
Fossil Falls	6.2	3.8	328.3
Fremont-Kramer	894.0	1,179.0	10,254.6
Granite Mountain Corridor	75.1	130.4	4,834.6
Great Falls Basin	5.5	11.9	500.0
Harper Dry Lake	0	1.8	0
Jawbone/Butterbredt	294.2	1,358.6	19,206.4
Juniper Flats	10.6	12.3	666.0
Last Chance Canyon	25.1	65.7	1,298.4
Manix	11.2	4.9	682.2
Mesquite Hills/Crucero	0.2	1.2	1.1
Middle Knob	25.6	41.8	1,427.1
Mojave Fishhook Cactus	1.2	2.5	112.5
Mojave Fringe-Toed Lizard Conservation Area	20.7	34.0	1,289.4
Mojave Ground Squirrel	554.6	699.3	33,622.1
Northern Lucerne Wildlife Linkage	66.5	234.1	4,220.6
Olancha Greasewood	19.7	53.3	1,350.7
Old Woman Springs Wildlife Linkage	181.4	198.6	11,225.3
Ord-Rodman	317.2	531.2	3,649.0
Owens Lake	0	0	8.5
Panamints and Argus	93.1	81.5	5,720.6
Parish's Phacelia Conservation Area	0.8	2.8	38.9
Pinto Mountains	130.1	82.1	1,558.1
Pipes Canyon	12.5	34.1	767.8
Pisgah Crater	129.5	49.4	6,794.7
Rainbow Basin/Owl Canyon	5.6	15.8	367.4

Table 4.11-2. Alternative 1 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/Parking/ Camping[2] (Acreage)
Red Mountain Spring	1.5	4.6	84.0
Rodman Mountains Cultural Area	3.6	13.9	74.0
Rose Springs	5.6	3.6	256.1
Sand Canyon	3.8	5.3	206.5
Santos Manuel	59.6	58.3	3,751.4
Short Canyon	1.3	1.1	67.6
Sierra Canyons	151.0	64.3	8,157.1
Soda Mountains Expansion	52.4	16.0	2,979.8
Soda Mountains WSA	5.4	1.8	503.4
Soggy Dry Lake Creosote Rings	0	4.4	23.5
Steam Well	0	0	0
Superior-Cronese	855.7	758.9	9,617.6
Trona Pinnacles	13.1	15.8	770.9
Upper Johnson Valley Yucca Rings	0	0	0
Western Rand Mountains	64.3	223.9	745.5
West Paradise	0	0.7	0
Whitewater Canyon	0	1.1	0
DT ACECs			
Fremont-Kramer	894.0	1,179.0	10,254.6
Ord-Rodman	317.2	531.2	3,649.0
Pinto Mountains	130.1	82.1	1,558.1
Superior-Cronese	855.7	758.9	9,617.6
CDNCLs			
Basin and Range	360.4	324.7	21,791.5
Coachella Valley	0	0	6.7
Mojave and Silurian Valley	236.3	231.1	10,376.2
Pinto, Lucerne Valley and Eastern Slopes	605.6	753.4	19,641.5
South Mojave-Amboy	271.5	123.7	7,735.3
Western Desert and Eastern Slopes	479.1	1,059.2	24,998.3
National Monuments			
Mojave Trails National Monument	341.1	244.1	10,891.7
Sand to Snow National Monument	36.2	48.4	2,260.3

Table 4.11-2. Alternative 1 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/Parking/ Camping[2] (Acreage)

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.

Alternative 1 Minimization and Mitigation Measures

This alternative is further mitigated 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.

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to biological, cultural, and other resources for which these areas were specially designated. Measures also reduce impacts to lands managed for wilderness characteristics. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, 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. Requirements for plan amendment and NEPA reviews of future route network changes would ensure that specific biological, cultural, and other resource impacts are considered before authorizing new motorized routes, but may also slow response to changing conditions on the ground.

4.11.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to Special Designation areas. 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 Special Designation areas and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit Special Designation areas by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to Special Designation areas of 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 impacts to Special Designation areas. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The Special Designation area impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to Special Designation areas.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. Because the proposed "C" routes northeast of the Spangler Hills Open Area are not associated with any special designations, this decision would not result in any impacts to Special Designation areas.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. The elimination of the Johnson Valley to Parker event may reduce impacts to special designations in that area. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on Special Designation areas by increasing the recreational use of routes in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. In general, these lakebeds are not Special Designation areas. Therefore, this decision would not have any direct effect on Special Designation areas associated with the lakebeds. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse impact on Special Designation areas by increasing the recreational use of routes in other areas.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. The West Rand ACEC and part of the Fremont-Kramer DT ACEC fall within the boundaries of the Rand Mountain-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 Alternative 2 would not have any direct impact on these designation boundaries.

PA VI: 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 motorized vehicle use to impact resources in those areas. The effect of these actions would be a net beneficial impact on Special Designation areas.

PA VII: Under this alternative, 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.

Alternative 2 Route Designation

Section 4.11.2 described the general impacts to specially-designated areas that are common to all alternatives. That analysis concluded that motorized vehicles 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, motorized vehicle use would potentially conflict with the management objectives established for these areas, including objectives established in activity plans, guidance, or legislation. The level of impacts would generally be proportional to the mileage of motorized routes within each area. Impacts associated with closure of routes 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, closure of routes near and leading to wilderness areas, national monuments, and other special designation areas would reduce the potential for incursions of motorized vehicles into those areas, and would thus be a beneficial impact to the values for which those areas were established. However, closure of routes within, near, or leading to special designation areas could also result in limiting public access to recreation in those areas, including the values (visual resources, wildlife, etc.) which attract recreational users. Closure of these routes 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 under Alternative 2 is presented in Table 4.11-3. The acreage and mileage of routes within specific ACECs and CDNCLs under Alternative 2 is presented in Table 4.11-4.

Table 4.11-3. Alternative 2 – Acreage and Mileage of Routes in Special Designation Areas[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Areas of Critical Environmental Concern	2340.1	4913.4	25462.5
California Desert National Conservation Lands	1709.2	2735.8	19220.3
DT ACECs	1758.8	2989.0	25079.3
Wilderness Areas	68.0	391.4	988.0
Wilderness Study Areas	38.8	146.0	508.3

Table 4.11-3. Alternative 2 – Acreage and Mileage of Routes in Special Designation Areas[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Lands Managed for Wilderness Characteristics	144.7	117.6	1374.7
National Monuments	360.6	309.4	3189.1

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 limits are specified.

Table 4.11-4. Alternative 2 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
ACECs			
Afton Canyon	11.5	36.9	116.9
Amboy Crater	0.5	0	0
Ayres Rock	4.8	1.4	27.3
Barstow Woolly Sunflower	20.5	84.8	584.6
Bedrock Spring	2.0	5.3	21.5
Bendires Thrasher Conservation Area	14.8	32.2	179.1
Big Morongo Canyon	20.4	9.6	230.0
Big Rock Creek Wash	0	0.6	0
Black Mountain	58.5	86.4	640.0
Brisbane Valley Monkeyflower	26.9	66.1	316.6
Bristol	151.8	87.5	920.4
Cady Mountains WSA	32.9	98.3	395.9
Calico Early Man Site	4.3	4.8	17.9
Carbonate Endemic Plants Research Natural Area	14.4	14.3	234.6
Christmas Canyon	0	0	0
Coolgardie Mesa	16.6	79.7	189.0
Cronese Basin	2.8	22.1	30.0
Daggett Ridge Monkeyflower	45.6	65.9	480.0
Desert Tortoise Research Natural Area	4.2	129.6	50.6

Table 4.11-4. Alternative 2 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Eagles Flyway	19.2	27.4	189.9
El Paso to Golden	231.5	362.6	2,613.9
Fossil Falls	6.4	3.5	61.8
Fremont-Kramer	679.6	1,392.4	10,254.6
Granite Mountain Corridor	70.5	135.1	808.5
Great Falls Basin	5.1	12.2	74.1
Harper Dry Lake	0.4	1.4	4.8
Jawbone/Butterbredt	264.4	1,388.4	2,991.4
Juniper Flats	11.4	11.6	134.6
Last Chance Canyon	15.8	75.1	163.8
Manix	12.3	3.8	128.6
Mesquite Hills/Crucero	0.4	1.0	1.1
Middle Knob	31.0	36.4	339.0
Mojave Fishhook Cactus	1.2	2.5	14.7
Mojave Fringe-Toed Lizard Conservation Area	21.9	32.8	235.7
Mojave Ground Squirrel	408.3	845.6	4,581.2
Northern Lucerne Wildlife Linkage	37.7	262.8	412.4
Olancha Greasewood	28.1	44.9	326.3
Old Woman Springs Wildlife Linkage	192.6	188.1	2,213.9
Ord-Rodman	266.9	581.4	3,649.0
Owens Lake	0	0	0.4
Panamints and Argus	53.0	121.6	603.9
Parish's Phacelia Conservation Area	0.6	3.0	6.6
Pinto Mountains	137.3	74.9	1,558.1
Pipes Canyon	18.9	27.8	200.9
Pisgah Crater	126.2	52.8	1,258.8
Rainbow Basin/Owl Canyon	5.1	16.2	59.4
Red Mountain Spring	0	6.1	0
Rodman Mountains Cultural Area	2.9	14.5	74.0
Rose Springs	5.5	3.7	43.0
Sand Canyon	3.8	5.4	38.8
Santos Manuel	56.5	61.4	615.0
Short Canyon	0.5	2.0	4.8

Table 4.11-4. Alternative 2 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Sierra Canyons	132.8	82.5	1,351.9
Soda Mountains Expansion	53.2	15.2	600.8
Soda Mountains WSA	2.2	5.0	28.1
Soggy Dry Lake Creosote Rings	0	4.4	2.8
Steam Well	0	0	0
Superior-Cronese	675.0	940.2	9,617.6
Trona Pinnacles	7.9	21.1	83.5
Upper Johnson Valley Yucca Rings	0	0	0
Western Rand Mountains	78.9	209.3	745.5
West Paradise	0	0.7	0
Whitewater Canyon	1.1	0	13.9
DT ACECs			
Fremont-Kramer	679.6	1,392.4	10,254.6
Ord-Rodman	266.9	581.4	3,649.0
Pinto Mountains	137.3	74.9	1,558.1
Superior-Cronese	675.0	940.2	9,617.6
CDNCLs			
Basin and Range	278.4	406.7	3,068.5
Coachella Valley	0	0	0.3
Mojave and Silurian Valley	167.4	300.0	2,199.1
Pinto, Lucerne Valley and Eastern Slopes	587.8	771.1	7,279.7
South Mojave-Amboy	256.9	138.3	2,141.7
Western Desert and Eastern Slopes	418.7	1,119.7	4,531.1
National Monuments			
Mojave Trails National Monument	308.9	276.4	2,605.3
Sand to Snow National Monument	51.7	33.0	583.8

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.

In Alternative 2, the majority of differences observed in the total mileage of routes within ACECs and CDNCLs reflect more accurate mapping of the routes present within ACECs and CDNCLs. The decrease in motorized route mileage 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 route mileage in Fossil Falls ACEC reflects a more accurate mapping of the existing access routes for two major transmission lines that traverse the ACEC. The motorized routes also correspond to the BLM managed interpretive trail and campground.

Alternative 2 Minimization and Mitigation Measures

This alternative is further mitigated 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.

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce impacts to biological, cultural, and other resources for which these areas were specially designated. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for impacts 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 motorized routes.

4.11.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on Special Designation areas is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions on Special Designation areas under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. 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. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known, impacts of those routes to Special Designation areas would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. In general, these lakebeds are not Special Designation areas. Therefore, this decision would not have any direct effect on Special Designation areas associated with the lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The West Rand ACEC and part of the Fremont-Kramer DT ACEC fall within the boundaries of the Rand Mountains-Fremont Valley Management Area. 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: 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 motorized vehicle use to impact resources in those areas. The effect of these actions would be a net beneficial impact on Special Designation areas.

PA VII: Under Alternative 3, 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, including the portion of the Ord Mountain Allotment within the Ord-Rodman DT ACEC, and including the Newberry Mountains and Rodman Mountain Wilderness

Areas. The wilderness character and the opportunity for solitude may be affected by the sights and sounds associated with range improvement maintenance including occasional motorized equipment use in wilderness. This adverse impact is not considered substantial, because the impacts of grazing did not substantially adversely affect the wilderness qualities at the time of area designations.

Alternative 3 Route Designation

Section 4.11.2 described the general impacts to specially-designated areas that are common to all alternatives. That analysis concluded that motorized vehicles 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, motorized vehicle use would potentially conflict with the management objectives established for these areas, including objectives established in activity plans, guidance, or legislation. The level of impacts would generally be proportional to the mileage of motorized routes within each area. Impacts associated with closure of routes 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, closure of routes near and leading to wilderness areas, national monuments, and other special designation areas would reduce the potential for incursions of motorized vehicles into those areas, and would thus be a beneficial impact to the values for which those areas were established. However, closure of routes within, near, or leading to special designation areas could also result in limiting public access to recreation in those areas, including the values (visual resources, wildlife, etc.) which attract recreational users. Closure of these routes 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 under Alternative 3 is presented in Table 4.11-5. The acreage and mileage of routes within specific ACECs and CDNCLs under Alternative 3 is presented in Table 4.11-6.

Table 4.11-5. Alternative 3 – Acreage and Mileage of Routes in Special Designation Areas[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping[2] (Acreage)
Areas of Critical Environmental Concern	4,872.5	2,380.8	94,873.4
California Desert National Conservation Lands	3,062.9	1382.1	51,392.3
DT ACECs	2,947.3	1,799.9	25,079.3
Wilderness Areas	74.4	385.0	2,323.0
Wilderness Study Areas	68.2	116.6	1,606.9
Lands Managed for Wilderness Characteristics	220.1	42.2	3,147.26
National Monuments	513.2	156.6	6,709.0

Table 4.11-5. Alternative 3 – Acreage and Mileage of Routes in Special Designation Areas[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/ Camping[2] (Acreage)

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 4.11-6. Alternative 3 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
ACECs			
Afton Canyon	21.9	26.5	400.9
Amboy Crater	0.5	0	0
Ayres Rock	4.9	1.4	58.4
Barstow Woolly Sunflower	6.1	99.2	584.6
Bedrock Spring	3.9	3.4	85.6
Bendires Thrasher Conservation Area	17.1	29.9	402.0
Big Morongo Canyon	19.7	10.4	421.2
Big Rock Creek Wash	0.6	0	14.9
Black Mountain	84.7	60.2	1764.8
Brisbane Valley Monkeyflower	28.4	64.6	654.6
Bristol	228.3	11.1	920.4
Cady Mountains WSA	50.9	80.3	1,157.8
Calico Early Man Site	6.1	3.0	39.9
Carbonate Endemic Plants Research Natural Area	18.2	10.5	445.6
Christmas Canyon	0	0	0
Coolgardie Mesa	24.6	71.8	547.8
Cronese Basin	10.4	14.5	224.6
Daggett Ridge Monkeyflower	67.2	44.3	1,358.5
Desert Tortoise Research Natural Area	4.3	129.5	50.6
Eagles Flyway	38.3	8.3	777.7
El Paso to Golden	558.1	36.1	11,287.7
Fossil Falls	9.9	0	182.5

Table 4.11-6. Alternative 3 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Fremont-Kramer	1,181.2	890.8	10,254.6
Granite Mountain Corridor	131.5	74.1	2,730.7
Great Falls Basin	8.3	9.1	207.6
Harper Dry Lake	0.4	1.4	9.1
Jawbone/Butterbredt	907.0	745.8	18,672.8
Juniper Flats	11.6	11.4	266.9
Last Chance Canyon	50.7	1.3	907.5
Manix	16.1	0	303.8
Mesquite Hills/Crucero	1.3	0.1	1.1
Middle Knob	60.4	7.0	1,265.9
Mojave Fishhook Cactus	1.3	2.4	30.1
Mojave Fringe-Toed Lizard Conservation Area	47.0	7.7	910.5
Mojave Ground Squirrel	1,007.4	246.4	20,495.3
Northern Lucerne Wildlife Linkage	68.8	231.8	1,391.2
Olancha Greasewood	69.2	3.8	1,522.3
Old Woman Springs Wildlife Linkage	373.2	7.5	7,650.9
Ord-Rodman	442.8	405.5	3,649.0
Owens Lake	0	0	2.8
Panamints and Argus	169.2	5.4	3,593.2
Parish's Phacelia Conservation Area	0.6	3.0	12.2
Pinto Mountains	205.8	6.5	1,558.1
Pipes Canyon	45.0	1.6	857.5
Pisgah Crater	172.2	6.8	3,256.0
Rainbow Basin/Owl Canyon	5.2	16.2	118.0
Red Mountain Spring	1.5	4.6	29.5
Rodman Mountains Cultural Area	3.6	13.8	74.0
Rose Springs	8.8	0.4	142.5
Sand Canyon	4.2	5.0	79.1
Santos Manuel	113.0	4.9	2,272.5
Short Canyon	10	1.4	21.0
Sierra Canyons	203.7	11.6	3,916.7
Soda Mountains Expansion	59.2	9.2	1,271.8
Soda Mountains WSA	5.4	1.8	144.0

Table 4.11-6. Alternative 3 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Soggy Dry Lake Creosote Rings	4.3	0.1	78.3
Steam Well	0	0	0
Superior-Cronese	1,117.5	497.1	9,617.6
Trona Pinnacles	23.8	5.2	484.7
Upper Johnson Valley Yucca Rings	0	0	0
Western Rand Mountains	92.3	196.0	745.5
West Paradise	0	0	0
Whitewater Canyon	1.1	0	27.8
DT ACECs			
Fremont-Kramer	1,181.2	890.8	10,254.6
Ord-Rodman	442.8	405.5	3,649.0
Pinto Mountains	205.8	6.5	1,558.1
Superior-Cronese	1,117.5	497.1	9,617.6
CDNCLs			
Basin and Range	643.5	41.6	13,380.0
Coachella Valley	0	0	1.2
Mojave and Silurian Valley	272.0	195.4	4,649.8
Pinto, Lucerne Valley and Eastern Slopes	925.1	433.7	13,091.0
South Mojave-Amboy	377.0	18.2	4,201.7
Western Desert and Eastern Slopes	845.2	693.2	16,068.6
National Monuments			
Mojave Trails National Monument	443.1	142.1	5,252.5
Sand to Snow National Monument	70.1	14.5	1,456.5

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.

In Alternative 3, the majority of differences observed in the total mileage of routes within ACECs and CDNCLs reflect more accurate mapping of the routes present within ACECs and CDNCLs. The increase in motorized route mileage 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, Bedrock Spring, Christmas Canyon, Rose Spring, and Trona Pinnacles, routes that provide connectivity through the ACECs were identified and designated for motorized route.

The Jawbone ACEC motorized 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.

Alternative 3 Minimization and Mitigation Measures

This alternative is further mitigated 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.

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce impacts to biological, cultural, and other resources for which these areas were specially designated. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for impacts 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 motorized routes.

4.11.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on Special Designation areas is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 Special Designation areas. However, this decision would make it easier for BLM to consider impacts to Special Designation areas in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on these areas.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions on Special Designation areas under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. Because the proposed "C" routes northeast of the Spangler Hills Open Area are not associated with any special designations, this decision would not result in any impacts to special designation areas. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. In general, these lakebeds are not Special Designation areas. Therefore, this decision would not have any direct effect on Special Designation areas associated with the lakebeds. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 motorized vehicle use to impact resources in those areas. The effect of these actions would be a net beneficial impact on Special Designation areas.

PA VII: Under Alternative 4, 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, including the portion of the Ord Mountain Allotment within the Ord-Rodman DT ACEC, and including the Newberry Mountains and Rodman Mountain Wilderness Areas. The wilderness character and the opportunity for solitude may be affected by the sights and sounds associated with range improvement maintenance including occasional motorized equipment use in wilderness. This adverse impact is not considered substantial, because the impacts of grazing did not substantially adversely affect the wilderness qualities at the time of area designations.

Alternative 4 Route Designation

Section 4.11.2 described the general impacts to specially-designated areas that are common to all alternatives. That analysis concluded that motorized vehicles 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, motorized vehicle use would potentially conflict with the management objectives established for these areas, including objectives established in activity plans, guidance, or legislation. The level of impacts would generally be proportional to the mileage of motorized routes within each area. Impacts associated with closure of routes 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, closure of routes near and leading to wilderness areas, national monuments, and other special designation areas would reduce the potential for incursions of motorized vehicles into those areas, and would thus be a beneficial impact to the values for which those areas were established. However, closure of routes within, near, or leading to special designation areas could also result in limiting public access to recreation in those areas, including the values (visual resources, wildlife, etc.) which attract recreational users. Closure of these routes 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 under Alternative 4 is presented in Table 4.11-7. The acreage and mileage of routes within specific ACECs and CDNCLs under Alternative 4 is presented in Table 4.11-8.

Table 4.11-7. Alternative 4 – Acreage and Mileage of Routes in Special Designation Areas[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Areas of Critical Environmental Concern	3,055.4	4,198.3	62,296.2
California Desert National Conservation Lands	2,054.3	2,390.6	37,744.7
DT ACECs	2,154.1	2,593.2	25,079.3
Wilderness Areas	58.7	400.7	2,036.0

Table 4.11-7. Alternative 4 – Acreage and Mileage of Routes in Special Designation Areas[1]

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Wilderness Study Areas	75.8	109.0	1,792.2
Lands Managed for Wilderness Characteristics	148.7	113.6	2,414.7
National Monuments	415.5	254.3	6,249.0

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 limits are specified.

Table 4.11-8. Alternative 4 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
ACECs			
Afton Canyon	23.4	25.0	452.3
Amboy Crater	0.5	0	0
Ayres Rock	4.3	2.0	51.7
Barstow Woolly Sunflower	47.8	58.0	584.6
Bedrock Spring	2.0	5.3	42.7
Bendires Thrasher Conservation Area	19.9	27.2	467.3
Big Morongo Canyon	10.0	20.0	202.3
Big Rock Creek Wash	0	0.6	0
Black Mountain	84.6	60.3	1,782.4
Brisbane Valley Monkeyflower	28.7	64.3	672.8
Bristol	160.5	78.8	920.4
Cady Mountains WSA	66.0	65.2	1,514.7
Calico Early Man Site	5.9	3.2	38.1
Carbonate Endemic Plants Research Natural Area	11.3	17.4	304.5
Christmas Canyon	0	0	0
Coolgardie Mesa	26.1	70.2	588.7
Cronese Basin	3.8	21.1	72.9
Daggett Ridge Monkeyflower	57.1	54.4	1,221.7
Desert Tortoise Research Natural Area	5.1	128.7	50.6

Table 4.11-8. Alternative 4 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Eagles Flyway	41.5	5.1	850.4
El Paso to Golden	304.6	289.5	6,599.3
Fossil Falls	5.5	4.5	104.9
Fremont-Kramer	870.1	1,202.1	10,254.6
Granite Mountain Corridor	95.1	110.5	2,128.5
Great Falls Basin	5.2	12.1	147.6
Harper Dry Lake	0.4	1.4	9.1
Jawbone/Butterbredt	434.0	1,218.7	9,546.3
Juniper Flats	14.2	8.8	323.2
Last Chance Canyon	28.5	62.4	548.5
Manix	9.7	6.4	184.5
Mesquite Hills/Crucero	0.4	1.0	1.1
Middle Knob	38.1	29.3	802.0
Mojave Fishhook Cactus	1.2	2.5	32.7
Mojave Fringe-Toed Lizard Conservation Area	24.4	30.3	522.9
Mojave Ground Squirrel	598.7	655.2	13,049.4
Northern Lucerne Wildlife Linkage	57.1	243.5	1,268.3
Olancha Greasewood	42.1	30.9	975.9
Old Woman Springs Wildlife Linkage	171.6	209.1	3,822.3
Ord-Rodman	314.0	534.2	3,649.0
Owens Lake	0	0	1.4
Panamints and Argus	111.8	62.8	2,490.4
Parish's Phacelia Conservation Area	3.1	0.5	69.5
Pinto Mountains	127.2	85.0	1,558.1
Pipes Canyon	17.4	29.3	366.9
Pisgah Crater	136.1	42.8	2,642.5
Rainbow Basin/Owl Canyon	5.1	16.2	116.4
Red Mountain Spring	1.8	4.4	32.7
Rodman Mountains Cultural Area	2.9	14.4	74.0
Rose Springs	5.6	3.6	86.9
Sand Canyon	3.8	5.3	75.6
Santos Manuel	59.6	58.2	1,296.8
Short Canyon	1.1	1.3	22.6
Sierra Canyons	140.9	74.4	2,838.9

Table 4.11-8. Alternative 4 – Acreage and Mileage of Routes in ACECs, DT ACECs, and CDNCLs[1]

Area	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping[2] (Acreage)
Soda Mountains Expansion	52.9	15.5	1,162.8
Soda Mountains WSA	2.2	5.0	79.0
Soggy Dry Lake Creosote Rings	0	4.4	7.0
Steam Well	0	0	0
Superior-Cronese	842.8	771.9	9,617.6
Trona Pinnacles	0.1	0	302.2
Upper Johnson Valley Yucca Rings	0	0	0
Western Rand Mountains	67.5	220.7	745.5
West Paradise	0	0	0
Whitewater Canyon	0	1.1	0.4
DT ACECs			
Fremont-Kramer	870.1	1,202.1	10,254.6
Ord-Rodman	314.0	534.2	3,649.0
Pinto Mountains	127.2	85.0	1,558.1
Superior-Cronese	842.8	771.9	9,617.6
CDNCLs			
Basin and Range	410.0	275.1	8,961.0
Coachella Valley	0	0	0.3
Mojave and Silurian Valley	224.9	242.6	4525.7
Pinto, Lucerne Valley and Eastern Slopes	591.3	767.4	9,589.1
South Mojave-Amboy	270.6	124.6	3,496.8
Western Desert and Eastern Slopes	557.5	980.9	11,171.8
National Monuments			
Mojave Trails National Monument	375.2	210.0	5,377.0
Sand to Snow National Monument	40.3	44.3	872.0

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.

Alternative 4 Minimization and Mitigation Measures

This alternative is further mitigated 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.

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce impacts to biological, cultural, and other resources for which these areas were specially designated. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce soil compaction or disturbance in currently undisturbed areas, thus minimizing the potential for impacts 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 motorized routes.

4.12 Noise

4.12.1 Introduction

Affected Environment Summary

Section 3.12 describes the existing conditions with respect to noise in the planning area. Generally, transportation-related noise sources, including road traffic, railroads, and aircraft, characterize the ambient noise environment of the planning area (SCAG 2003). Ambient noise levels associated with traffic and railroads are expected to be limited to areas near major transportation arteries, and are likely not applicable to most of the planning area. Most of the public land in the planning area is relatively far from these noise sources, and would be expected to exhibit ambient noise levels that are more characteristic of rural areas. Military and commercial aircraft also incrementally contribute to existing ambient noise in the planning area, and these noises would occur in both developed and rural areas of the planning area.

Methodology

The 2005 WEMO EIS analyzed the effect of noise, including OHV and motorized vehicle noise, on wildlife. The 2005 WEMO EIS concluded that closure of routes under the WEMO plan would reduce OHV and motorized vehicle 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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the location of each route with respect to receptors and residences that could be sensitive to OHV noise.
- Conducted route evaluation and quantified the miles of motorized routes that could potentially impact sensitive receptors and residents, across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.12.2 below.

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 motorized vehicle recreation on public lands. Therefore, the difference between ambient noise and noise associated with motorized vehicle 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 longterm 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 motorized 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 motorized vehicle noise is greater.

Chapter 2 discusses the general resource protection and motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 closed under the various alternatives.

There are no impacts to noise from the grazing alternatives in PA VII; therefore, there is no further discussion of PA VII in this section.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For impacts resulting from noise, these include:

- 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.

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, motorized vehicles use would still occur within wildlife habitat, and could impact wildlife individuals due to noise effects. Motorized vehicle use would also still occur in close proximity to sensitive receptors.

4.12.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 noise impacts to sensitive receptors or residents. 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 noise impacts and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may reduce noise impacts to sensitive receptors 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. However, no current noise impacts are known along the current designated "C" routes or the designated Rand-Fremont routes system; therefore, no noise impacts to sensitive receptors are anticipated as a result of the No Action Alternative.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that noise from motorized vehicles 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 the No Action Alternative was presented above in Tables 4.4-14

and 4.4-15. The mileage of routes associated with sensitive human receptors under the No Action Alternative is presented in Table 4.12-1.

Table 4.12-1. Alternative 1 - Miles of Routes in Proximity to Sensitive Receptors and Residents for Noise Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Route Within 1 Mile of Sensitive Receptor	41.5	0	0	111.8
Miles of Route Within 300 Feet of Residences	288.2	0	0	473.7

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. 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 motorized routes.

4.12.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 noise impacts. 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 noise impacts and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may reduce noise impacts by facilitating adaptive management changes in response to changing on-the-ground

conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The noise impacts of 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 noise impacts to sensitive receptors or wildlife. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The noise impacts of these decisions under Alternative 2 are as follows:

PA III: Competitive events may authorize large numbers of vehicles traveling at a high rate of speed, which has the potential to increase noise levels in the local area. While these levels may be substantial, they will also be localized and short in duration. It is anticipated that the overall number of SRP applications will not increase, just that several applicants may request to use the "C" routes in addition to the adjacent Open Area for courses. This means that there should be no measurable increase in the number of OHVs using public land in the area, and there would be no direct noise impacts.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. Because there are no sensitive receptors associated with the "C" routes northeast of the Spangler Hills Open Area, this decision would not result in any noise impacts. Seasonal restrictions would reduce potential noise impacts to wildlife, including desert tortoise and Mohave ground squirrel, during months when these species are active.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. An event has not been run in this corridor since the listing of the desert tortoise as threatened in

1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any noise impacts by increasing the recreational use of routes in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. The dry lakebeds are not located near any potential sensitive receptors, so use of them would not result in adverse noise impacts. Because Koehn lakebed is currently receiving relatively light use, the amount of displaced use to other routes would be low. Therefore, this plan amendment decision is not expected to have an indirect, adverse noise impact on sensitive receptors or wildlife by increasing the recreational use of routes in other areas.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. No current noise impacts are known along the designated Rand-Fremont routes system; therefore, no noise impacts to sensitive receptors are anticipated as a result of Alternative 2.

PA VI: 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 may have a slight beneficial effect to noise impacts on wildlife by limiting the incursion of motorized vehicles outside of the designated routes.

Alternative 2 Route Designation

Section 4.12.2 described the general impacts associated with noise that are common to all alternatives. That analysis concluded that noise from motorized vehicles 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 the receptors. The mileage of routes associated with wildlife receptors under Alternative 2 was presented above in Tables 4.4-17 and 4.4-18. The mileage of routes associated with sensitive human receptors under Alternative 2 is presented in Table 4.12-2.

Table 4.12-2. Alternative 2 - Miles of Routes in Proximity to Sensitive Receptors and Residents for Noise Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Route Within 1 Mile of Sensitive Receptor	36.6	8.5	0	108.1
Miles of Route Within 300 Feet of Residences	275.2	2.2	0	484.6

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce the proximity of noise sources to sensitive receptors or residences. 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 motorized routes.

4.12.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on noise impacts is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The noise impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. 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. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the noise impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. In general, the lakebeds are not associated with wildlife or sensitive receptors, so modification of access would not have adverse or beneficial noise impacts.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to 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: 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 may have a slight beneficial effect to noise impacts on wildlife by limiting the incursion of motorized vehicles outside of the designated routes.

Alternative 3 Route Designation

Section 4.12.2 described the general impacts associated with noise that are common to all alternatives. That analysis concluded that noise from motorized vehicles 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 the receptors. The mileage of routes associated with wildlife receptors under Alternative 3 was presented above in Tables 4.4-20 and 4.4-21. The mileage of routes associated with sensitive human receptors under Alternative 3 is presented in Table 4.12-3.

Table 4.12-3. Alternative 3 - Miles of Routes in Proximity to Sensitive Receptors and Residents for Noise Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Route Within 1 Mile of Sensitive Receptor	98.55	7.3	0	47.5
Miles of Route Within 300 Feet of Residences	673.6	3.1	0.7	84.5

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce the proximity of noise sources to sensitive receptors or residences. 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 motorized routes.

4.12.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on noise impacts is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 noise impacts to sensitive receptors or wildlife. However, this decision would make it easier for BLM to consider noise impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on noise impacts.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The noise impacts of these decisions under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. These proposed "C" routes are not associated with sensitive receptors, so would not result in noise impacts. The Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. In general, the lakebeds are not associated with wildlife or sensitive receptors, so modification of access would not have adverse or beneficial noise impacts. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 may have a slight beneficial effect to noise impacts on wildlife by limiting the incursion of motorized vehicles outside of the designated routes.

Alternative 4 Route Designation

Section 4.12.2 described the general impacts associated with noise that are common to all alternatives. That analysis concluded that noise from motorized vehicles 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 the receptors. The mileage of routes associated with wildlife receptors under Alternative 4 was presented above in Tables 4.4-23 and 4.4-24. The mileage of routes associated with sensitive human receptors under Alternative 4 is presented in Table 4.12-4.

Table 4.12-4. Alternative 4 - Miles of Routes in Proximity to Sensitive Receptors and Residents for Noise Impacts

Resource Description	Motorized	Non-Motorized	Non-Mechanized	Closed (Transportation Linear Disturbance)
Miles of Route Within 1 Mile of Sensitive Receptor	48.9	2.4	0	102.0
Miles of Route Within 300 Feet of Residences	304.7	2.0	1.1	453.7

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce the proximity of noise sources to sensitive receptors or residences. 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 motorized routes.

4.13 Travel and Transportation Management

4.13.1 Introduction

Affected Environment Summary

Section 3.13 describes the current travel and transportation characteristics within the planning area. The transportation network in the WEMO Planning area supports the needs of residents and visitors for accessing housing, employment locations, and recreation, as well as supporting the transport of raw materials, food, fuels, and commercial products. The Motorized Vehicle Access (MVA) Element of the CDCA Plan established overarching goals and objectives to support these needs, including 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 commercial development on public lands. To accomplish these objectives, it is necessary that the travel and transportation network provide access to all private lands and authorized users within the planning area, as well as connect seamlessly with the travel and transportation networks on neighboring jurisdictional lands. Neighboring jurisdictions in the region include adjacent BLM-managed lands outside of the West Mojave; Interstate Highways and U.S. Routes; state, county; and city routes; military installations; and lands managed by the USDA Forest Service, National Park Service, and other federal, state, and local land management agencies.

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.

For this SEIS for the WMRNP, BLM performed the following:

- The route designation process for each alternative included evaluation of the need for the route to provide continuity to transportation networks in adjacent jurisdictions, and access to private lands and authorized land uses.
- Re-evaluated the 2005 WEMO analysis, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.13.2 below.

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 motorized 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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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.

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.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during implementation of the WMRNP, were described in Table 2.1-4. For potential conflicts resulting from multiple users, these include:

- 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.

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.

4.13.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to access to private land or adjacent jurisdictions, or other features of the travel and transportation network. 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 access to private land or adjacent jurisdictions and other use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit travel and transportation management 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. However, there are no currently known impacts to travel and transportation management associated with those activities and areas; therefore, no impacts to travel and transportation management are anticipated as a result of the No Action Alternative.

Alternative 1 Route Designation

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.

4.13.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to travel and transportation management. 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 travel and transportation management and other use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit travel and transportation management by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The impacts to travel and transportation management of 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 impacts to travel and transportation management. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The travel and transportation management impacts of these decisions under Alternative 2 are as follows:

PA III: It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to travel and transportation management.

Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. 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 a motorized competitive event.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment decision would not have any effect on travel and transportation management by increasing the recreational use of routes in other areas.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. Although the route network providing access to the Koehn lakebed would still be complete, the closure of the lakebeds may result in closure of through routes, thus increasing the distance of travel for motorized 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. However, because Koehn lakebed is currently receiving relatively light use, that impact is expected to be small.

PA V: 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.

PA VI: 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 is not expected to have any effect on motorized use of routes to access private landowners, authorized land uses, or adjacent jurisdictions, and would therefore not have any impact on the travel and transportation network.

Alternative 2 Route Designation

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 closure of a larger number of routes, 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.

4.13.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on travel and transportation management is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to travel and transportation management under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. These actions would not result in any adverse impact on access to private landowners, authorized land uses, or adjacent jurisdictions. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the travel and transportation impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. Although the route network providing access to Koehn lakebed would still be complete, the closure of the lakebeds may result in closure of through routes, thus increasing the distance of travel for motorized 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 close proximity to Koehn lakebed. Conversely, allowing motorized use on Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would likely increase access to private landowners, authorized land uses, and adjacent jurisdictions near those areas. Therefore, the amendment would have a direct, beneficial impact in those areas.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle access to 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: 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 is not expected to have any effect on motorized use of routes to access private landowners, authorized land uses, or adjacent jurisdictions, and would therefore not have any impact on the travel and transportation network.

Alternative 3 Route Designation

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 closure of few routes 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.

4.13.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on motorized use of routes to access private landowners, authorized land uses, or adjacent jurisdictions is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 travel and transportation management. Because this decision is intended to improve BLM's management of the transportation network in this intensively used area, it would have an indirect, beneficial effect on travel and transportation management.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions to travel and transportation management under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized 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 Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures. These actions would not result in any adverse impact on access to private landowners, authorized land uses, or adjacent jurisdictions.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Allowing motorized use on these lakebeds would likely increase access to private landowners, authorized land uses, and adjacent jurisdictions near those areas. Therefore, this decision would have a direct, beneficial impact on the travel and

transportation network. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle access to the Rand Mountains would be eliminated. The impacts of this decision would be the same as those discussed for Alternative 3.

PA VI: Alternative 4 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 is not expected to have any effect on motorized use of routes to access private landowners, authorized land uses, or adjacent jurisdictions, and would therefore not have any impact on the travel and transportation network.

Alternative 4 Route Designation

The route network in Alternative 4 was designed to ensure connectivity to adjoining networks, and to ensure access to private land and authorized users throughout the WEMO Planning area. In addition, it was developed to specifically address concerns raised by stakeholders regarding maintenance of access on specific routes. As a result, Alternative 4 would not have any adverse impacts to travel and transportation management.

4.14 Paleontological Resources

4.14.1 Introduction

Affected Environment Summary

Section 3.14 describes the paleontological resources in the West Mojave planning area. The planning area includes Cenozoic sedimentary rocks that are known to contain important mammal, bird, and reptile fossils.

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.

For this SEIS for the WMRNP, BLM performed the following:

- 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. This information is presented in Section 3.14.
- The route designation process for each alternative included evaluation of the location of each route with respect to lands in the Low/Very Low, Moderate/Unknown, and High/Very High classifications.
- Conducted the evaluation, and quantified the miles of motorized routes and closed routes within each classification across four alternative route networks, ranging from 5,231 to 10,864 miles in size.
- Re-evaluated the 2005 WEMO data, and supplemented it with additional information from resource specialists, public comments, and changes in conditions within the planning area. This additional information is incorporated into the evaluation in Section 4.14.2 below.

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 motorized vehicle 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.

Motorized vehicle routes 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 closed (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 motorized access 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 motorized, non-motorized, and non-mechanized transportation network, and which features would be closed (i.e., 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 motorized 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 motorized 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. These minimization and mitigation measures differ among the alternatives, and are therefore discussed in more detail in Sections 4.14.3, 4.14.4, 4.14.5, and 4.14.6 below.

Resource-Specific Minimization and Mitigation Measures

Resource-specific minimization and mitigation measures that were considered as part of the route designation process for each alternative, and that will be considered for each route during

implementation of the WMRNP, were described in Table 2.1-4. For impacts to paleontological resources, these include:

- 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 exclosure 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).

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, motorized vehicles and livestock may still enter undisturbed areas and adversely impact unidentified resources.

4.14.3 Impacts Associated with the No Action Alternative

Alternative 1 Plan Amendment

Under the No Action Alternative, none of the proposed plan amendment decisions would be adopted.

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 impacts to paleontological resources. 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 paleontological resources and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit paleontological resources 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.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program.

Changes to motorized vehicle use in the locations specified in these decisions under the action alternatives do have the potential to affect paleontological resources, if such resources exist in those locations. 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 the increased use of the routes by vehicles and spectators as described in the impacts common to all alternatives. Impacts may still occur to paleontological resources as a result of motor vehicle 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 the No Action Alternative, 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.

Alternative 1 Route Designation

The evaluation of impacts common to all alternatives concluded that motorized vehicles can have direct adverse impacts to paleontological resources. Direct impacts to physical resources would likely only occur due to actual contact with motorized vehicles, 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 the No Action Alternative is presented in Table 4.14-1.

Table 4.14-1. Alternative 1 - Miles of Routes within Paleontological Resource Classification Areas

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping (Acreage)
Low/Very Low Potential	1,841.1	3,827.6	75,453.6
Moderate/Unknown Potential	2,776.3	231.6	107,213.1
High/Very High Potential	1,226.9	2459.3	50,569.4

Alternative 1 Minimization and Mitigation Measures

Table 2.3-1 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 Alternative 1, the No Action Alternative. Whether they were applied during the route designation process or are mitigation measures, these measures act to reduce impacts to paleontological resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs would reduce the potential for damage to unidentified paleontological resources adjacent to routes, 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 paleontological resource impacts are considered before authorizing new motorized routes.

4.14.4 Impacts Associated with Alternative 2

Alternative 2 Plan Amendment

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 impacts to paleontological resources. 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 paleontological resource and use factors specified in 43 CFR 8342.1;
- Facilitate communication of limitations of route use to the public; and
- Facilitate BLM's ability to enforce route use limitations.

These amendments are expected to have no adverse effect on resources, and may benefit paleontological resources by facilitating adaptive management changes in response to changing on-the-ground conditions. By adopting these decisions, the CDCA Plan would be amended to conform to current policy and regulation.

As a result of the modification of the language limiting the route network to existing routes, new routes could potentially be designated in locations with no existing routes, and could have adverse impacts to localized resources near that route. New routes may be established to provide access for new authorized uses, or to avoid identified impacts to resources. The paleontological resource impacts of 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 impacts to paleontological resources. 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 closure, 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, consistent with 43 CFR 8342.1, that 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 routes established to address impacts to resources, the new route may be permanent.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The paleontological resource impacts of these decisions under Alternative 2 are as follows:

PA III: Competitive events may authorize large numbers of vehicles using a particular route and encourage the use of areas adjacent to routes by spectators. Paleontological resources that occur within routes or immediately adjacent to routes may be subject to impacts in various ways, depending on the nature of the paleontological resources present, the nature of the soils at the site and in the immediate vicinity, and the topography of the immediate area.

It is anticipated that the overall number of SRP applications will not increase. This means that there should be no measurable increase in the number of OHVs using public land in the area. Additionally, designating the "C" routes does not authorize individual SRP events to use these routes, and additional analysis will occur as part of the SRP permitting process. Therefore, there should be no direct impacts to paleontological resources. Under Alternative 2, there would be a seasonal restriction placed upon the use of the currently designated "C" routes for competitive motorized events managed under a SRP. These routes would be available for use by competitive motorized events during the months of November, December, and January. 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 as described in the impacts common to all alternatives.

Since OHV competitive events conducted in other OHV Open Areas would be limited to inside the Open Area boundaries under this alternative, the remaining designated long-distance race corridor, the Johnson Valley to Parker Valley Corridor would be removed under Alternative 2. The elimination of the Johnson Valley to Parker event may reduce impacts to paleontological resources in that area. An event has not been run in this corridor since the listing of the desert tortoise as threatened in 1989; therefore, other routes and areas within the planning area are not anticipated to receive increased use for recreation as a result of the elimination of this competitive event route. Therefore, this plan amendment is not anticipated to have an adverse impact on paleontological resources.

PA IV: Alternative 2 would designate Koehn lakebed as closed to motorized vehicles. There would be no change to the use of Cuddeback, Coyote, or Chisholm Trail Lakes. The lakebeds may be associated with known or unknown paleontological resources. Therefore, 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. Use of the other three lakebeds is not anticipated to change under this alternative. Therefore, this plan amendment is not anticipated to have an adverse impact on paleontological resources.

PA V: There would be no change to access to the Rand Mountains-Fremont Valley Management Area under Alternative 2. 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, as described under the No Action Alternative.

PA VI: 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 reduce the potential for motorized vehicle use to impact paleontological resources in those areas. The effect of these actions would be a net beneficial impact on paleontological resources.

PA VII: 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.

Alternative 2 Route Designation

Section 4.14.2 described the general impacts to paleontological resources that are common to all alternatives. That analysis concluded that motorized vehicles can have direct adverse impacts to paleontological resources. Direct impacts to physical resources would likely only occur due to actual contact with motorized vehicles, 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 Alternative 2 is presented in Table 4.14-2.

Table 4.14-2. Alternative 2 - Miles of Routes within Paleontological Resource Classification Areas

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping (Acreage)
Low/Very Low Potential	1,622.4	4,048.5	19,980.9
Moderate/Unknown Potential	2,473.2	3,726.35	29,062.8
High/Very High Potential	988.7	2,697.5	12,385.0

Alternative 2 Minimization and Mitigation Measures

Table 2.3-5 describes the network-wide minimization and mitigation measures that would be applied under Alternative 2. Many of these measures would act to reduce impacts to paleontological resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines would reduce the potential for damage to unidentified paleontological resources adjacent to routes. 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 motorized routes. Specific mitigation measures will be applied and implemented.

4.14.5 Impacts Associated with Alternative 3

Alternative 3 Plan Amendment

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. These decisions would be the same under Alternative 3 as for Alternative 2, and therefore effect of these decisions on paleontological resources is the same as discussed for Alternative 2.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The paleontological resource impacts of these decisions under Alternative 3 are as follows:

PA III: Under Alternative 3, there would be "C" routes available for competitive motorized events managed under a SRP 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. 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. In addition, the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but may be offset by additional routes in the planning area that are identified as competitive use open routes through the route designation process. Because the locations of replacement routes are not known the paleontological resource impacts of those routes would be considered through the route designation process.

PA IV: Under Alternative 3, Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2.

Alternative 3 would also designate Cuddeback, Coyote, and Chisholm Trail Lake lakebeds as open to motorized use. The lakebeds may be associated with known or unknown paleontological resources. Therefore, this decision could have a direct, beneficial effect on paleontological resources associated with the Koehn lakebed, which would be closed, but an adverse impact on paleontological resources on the other three lakebeds.

PA V: Under Alternative 3, the visitor use permit program established for motor vehicle 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 paleontological resources from the currently authorized OHV travel routes.

PA VI: 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 reduce the potential for motorized vehicle use to impact paleontological resources in those areas. The effect of this plan amendment decision would be a net beneficial impact on paleontological resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Under Alternative 3, 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.

Alternative 3 Route Designation

Section 4.14.2 described the general impacts to paleontological resources that are common to all alternatives. That analysis concluded that motorized vehicles can have direct adverse impacts to paleontological resources. Direct impacts to physical resources would likely only occur due to actual contact with motorized vehicles, 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 Alternative 3 is presented in Table 4.14-3.

Table 4.14-3. Alternative 3 - Miles of Routes within Paleontological Resource Classification Areas

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping (Acreage)
Low/Very Low Potential	3,601.4	2,067.4	60,176.5
Moderate/Unknown Potential	4,652.5	1,546.8	72,099.4
High/Very High Potential	2,390.9	1,295.3	39,318.6

Alternative 3 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 3. Many of these measures would act to reduce impacts to paleontological resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce the potential for damage to unidentified paleontological resources adjacent to routes. 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 motorized routes. Specific mitigation measures will be applied and implemented.

4.14.6 Impacts Associated with Alternative 4

Alternative 4 Plan Amendment

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. Except for the designation of TMAs, these decisions would be the same under Alternative 4 as for Alternatives 2 and 3, and therefore effect of these decisions on paleontological resources is the same as discussed for those alternatives.

Under Alternative 4, the boundaries of the nine TMAs included in Alternative 4 are similar to those in Alternatives 2 and 3, with the exception that TMA 7 (Ridgecrest, El Paso, Rands, and Red Mountain sub-regions) would be split into two separate TMAs. The Ridgecrest and El Paso sub-regions would be split from the Rands and Red Mountain sub-regions, 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 paleontological resources. However, this decision would make it easier for BLM to consider paleontological resource impacts in future route designation decisions in this intensively used area, and thus have an indirect, beneficial effect on paleontological resources.

Five of the plan amendment decisions being considered in the WMRNP would modify on-the-ground authorization of livestock grazing and motorized vehicle use. These include designation of "C" routes and the Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-Johnson Valley South Unit Competitive Event Connectors, changes to designations on dry lakes, access to the Rand Mountains-Fremont Valley Management Area, changes in allowable stopping, parking, and camping distances, and changes to the livestock grazing program. The impacts of these decisions on paleontological resources under Alternative 4 are as follows:

PA III: Under Alternative 4, 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 motorized events managed under a SRP. Paleontological resource inventories have not been completed for the specific routes north of the Navy Road or South of 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 Stoddard Valley-to-Johnson Valley and Johnson Valley North Unit-to-South Unit Competitive Event Connectors would also be available. The Johnson Valley to Parker Valley Race Corridor would be removed, but the decision would identify a specific route for the speed-controlled connector between the remaining Johnson Valley OHV Area and the Stoddard Valley OHV Open Area, with appropriate mitigation measures.

PA IV: Under Alternative 4, Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would all be designated as open to motorized use. Koehn lakebed would be designated as "Closed to Motor Vehicle Access, except by Authorization, including Special Recreation Permit". The impacts of the closure of Koehn lakebed would be the same as discussed for Alternative 2. The paleontological resource impacts at Cuddeback, Coyote, and Chisholm Trail Lake lakebeds would be the same as those described for Alternative 3, which would also designate these lakebeds as open to motorized vehicles. The lakebeds may be associated with known or unknown paleontological resources. Therefore, this decision could have a direct, adverse impact on paleontological resources on Cuddeback, Coyote, and Chisholm Trail Lake lakebeds.

PA V: Under Alternative 4, the visitor use permit program established for motor vehicle 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 paleontological resources from the currently authorized OHV travel routes.

PA VI: Alternative 4 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 reduce the potential for motorized vehicle use to impact paleontological resources in those areas. The effect of this plan amendment decision would be a net beneficial impact on paleontological resources located adjacent to the routes that are designated as available for motorized use outside of DT ACECs.

PA VII: Under Alternative 4, livestock grazing outside of DT ACECs would continue under the terms and conditions in the Final Grazing Decisions issued for active grazing allotments with WEMO. Table 4.9-1 provides the total number of resources per allotment that may be impacted by livestock grazing.

Alternative 4 Route Designation

Section 4.14.2 described the general impacts to paleontological resources that are common to all alternatives. That analysis concluded that motorized vehicles can have direct adverse impacts to paleontological resources. Direct impacts to physical resources would likely only occur due to actual contact with motorized vehicles, 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 Alternative 4 is presented in Table 4.14-4.

Table 4.14-4. Alternative 4 - Miles of Routes within Paleontological Resource Classification Areas

Resource Description	Open/Limited (Mileage)	Closed (Transportation Linear Disturbance) (Mileage)	Stopping/ Parking/Camping (Acreage)
Low/Very Low Potential	2,082.0	3,586.6	37,700.8
Moderate/Unknown Potential	2,854.2	3,345.3	48,660.3
High/Very High Potential	1,278.3	2,408.0	22,571.1

Alternative 4 Minimization and Mitigation Measures

Table 2.3-8 describes the network-wide minimization and mitigation measures that would be applied under Alternative 4. Many of these measures would act to reduce impacts to paleontological resources. Measures such as limiting new ground disturbance in DT ACECs, disguising closed routes, and implementing stopping and parking limits of 50 feet from route centerlines in DT ACECs and 100 feet from route centerlines outside of DT ACECs would reduce the potential for damage to unidentified paleontological resources adjacent to routes. 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 motorized routes. Specific mitigation measures will be applied and implemented.

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 reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such other actions (40 CFR Section1508.7). 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 reasonably foreseeable future 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. 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 previously described, the cumulative project scenario includes all projects identified as reasonably foreseeable as of the publication of the Supplemental DEIS. Table 4.15-2 identifies the existing and reasonably foreseeable future 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
Climate Change	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.	Motorized vehicle access, 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, 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 motorized routes within the WEMO Planning Area	Combined noise levels at sensitive receptors and residences	Noise sources within 0.5 miles of motorized routes.

Table 4.15-2. Existing and Reasonably Foreseeable Projects

Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
Desert Renewable Energy Conservation Plan (DRECP); CEC, BLM, CDFW, and USFWS	California desert land in parts of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego counties, and including all of WEMO	Multiple land owners, including federal, State, County, and private	Approved September, 2016	9.1 million acres in WEMO.	BLM Land Use Plan Amendment, USFWS Habitat Conservation Plan, and CDFW Natural Communities Conservation Plan, which identifies renewable energy development areas to facilitate development in those areas, and conservation lands and parameters to offset development. Includes development limits within ACECs and CDNCLs, in addition to 1% disturbance caps already in place, as well as other development and resource-specific parameters.
Abengoa Mojave Solar (CACA 52096)	Harper Dry Lake, 25 miles northwest of Barstow	Abengoa Solar	Approved	154	A 250 MW solar thermal parabolic trough project using wet cooling (National Renewable Energy Laboratory, 2013; U.S. Department of Energy, 2013).
XpressWest High Speed Rail Project (CACA 48497 and NVN 82673)	Victorville to Las Vegas along I-15	DesertXpress Enterprises, LLC	Authorized Project: Authorized July 2011 (Federal Railroad Administration [FRA]) and October 2011 (BLM).	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 Record of Decision and Final EIS, each of which is available on the BLM's website: http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/Barstow/pubs.Par.2523.File.dat/DXE%20ROD%20FINAL%20updated%2010-28-11.pdf
Communications sites	Within WEMO Planning area	Various communications companies	Existing/Proposed projects	Not Known	There are several existing and proposed communications sites in the Project area consisting of towers with communications equipment.

Table 4.15-2. Existing and Reasonably Foreseeable Projects

Project Name; Agency ID	Location	Ownership	Status	Acres	Project Description
Mining Claims	Within WEMO Planning area	Various mining claimants	Claims Filed: none have submitted plans of operation	Not Known	Location dates vary from September of 2012 to May 2012.
Johnson Valley Military Expansion (CACA 50194)	South of I-40	United States Department of the Navy	Final EIS published June 2012	98,000	Approved Expansion of Twentynine Palms Marine Corps Air Ground Combat and Airspace Establishment under P.L.

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 vehicular 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 DWMAs (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/Butterbredt 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 of 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 motorized vehicle 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 motorized 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 reasonably foreseeable future 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 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. 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 PM_{10}, 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, 2103 (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 (NOx), carbon monoxide (CO), respirable particulate matter (PM_{10}), fine respirable particulate matter ($PM_{2.5}$), oxides of sulfur (SOx), 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).

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. Figure 3.2-4 presented the relative contributions of the various sources to the emissions inventory. Figure 3.2-4 showed that mobile sources (including OHVs) are the largest source of ozone precursor (VOC and NOx) emissions, but are a minor component of SOx, PM_{10}, 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 PM_{10} 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 non-attainment 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, including the projects listed in Table 14.4-2, will result in cumulative increase in air emissions. Air emissions from wind-blown dust is 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 PM_{10}, 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 will 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 PM_{10} 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 motorized vehicles 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 motor vehicle use on public lands are a relatively small portion of the direct impacts from motor vehicles. Erosion is the primary source of PM_{10} emissions off of public lands. The total mileage of motorized 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 reasonably foreseeable future.

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 route closures 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 PM_{10} concentrations in a number of areas.

Global Climate Change

The climate change 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 climate change 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 climate change 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 climate change 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 climate changes, 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 motorized GHG emissions in the planning area. The proposed CDCA plan amendment decisions associated with the alternatives would not lead to a change in the motorized vehicle 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 motorized vehicles. Therefore, the alternatives evaluated as part of the WMRNP would not contribute to an incremental change in cumulative global climate change impacts.

In general, the cumulative effects associated with climate change 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 climate change 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 climate change between grazing and transportation route alternatives is indiscernible.

Geology and Soils

In Limited Access Areas within the WEMO Planning Area, motorized vehicle 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 motorized 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. Motorized vehicle 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 motorized vehicle 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 motorized vehicle use in places that have previously been subjected to light, intermittent motorized vehicle use, could result in either compaction or de-compaction, depending on the characteristics of the soil, the slope, the type of motorized vehicle, and the manner in which the vehicle is used.

Continued motorized vehicle 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 motorized vehicle 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 motorized vehicle, 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).

Closure of routes to motorized vehicles, 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.

Authorization of 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.

Overall, soil standards are being met on public land in the 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 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 motorized access, 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 motorized 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 PM_{10} 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 motorized vehicle use is

allowed, as well as identifying specific locations for motorized vehicle use and routes closed and designated as transportation linear disturbances. These designations also result in different intensities of use on the alternative network, based on the overall motorized use being constant between alternatives.

Of the four 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 open motorized 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 closing the largest mileage of routes 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 motorized 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 motorized vehicle 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 motor vehicles is 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.

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 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 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 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.

Motorized vehicle 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.

Motorized vehicle use on the transportation network also requires the use of petroleum fuels which, if released, can impact surface water or groundwater quality. Motorized vehicles 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 closure 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 others, 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 is 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 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.

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 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 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 includes 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 reasonably foreseeable future. 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.

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 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 exclosure. 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 occurs 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 Ibs/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 remeasured 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 motor vehicle travel.

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 DWMAs 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 DWMAs be established in the West Mojave Recovery Unit, and is consistent with the establishment of a total of 11 tortoise DWMAs 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 Ibs/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 four alternatives evaluated in this SEIS, Alternative 3 would result in the greatest increase in open motorized 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 closing the largest mileage of routes 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 closed routes and providing educational information for the public, which will result in a moderate level of compliance of the route network. The rate of active closures anticipated is similar for all alternatives, so active disturbances would not vary substantially by alternative in the reasonably foreseeable future. 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 motorized 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 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 invasives 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 four 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 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 motorized recreational opportunities in the WEMO Planning Area have 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 motorized 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 motorized vehicle recreation. 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 motorized 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 motorized 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 motorized 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 motorized 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 access.

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 four alternatives evaluated in this SEIS, Alternative 2 would have the largest overall adverse cumulative impacts to recreation because it would result in closure of the largest mileage of routes, 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 motorized recreation, as it would maintain the largest network of motorized 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 motorized recreation.

No Action 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 motorized 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 DWMAs, 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 bighorn sheep. Portions of the Cantil Common, Monolith-Cantil, and Lava Mountain allotments that are not within DWMAs were reduced as a result of the adoption of DWMAs in the 2006 WEMO Plan.

Since adoption of the 2006 WEMO Plan, additional changes have taken place that have resulted in further loses of livestock grazing.

- The permanent 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 permanently 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 Ibs/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 and route designations 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 and are unrelated to access management strategies.

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 motorized 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 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.

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 1994 California Desert Protection Act (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 closure of specific routes 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 access.

Overall, of the four 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 closure of the largest mileage of routes, and application of the most restrictive minimization and mitigation measures. The contribution of Alternative 2 to cumulative land use impacts would be adverse, as compared to the No Action Alternative. Conversely, Alternative 3 would be beneficial with respect to other land uses, as it would maintain the largest network of motorized 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. 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 closures. 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 Programmatic Agreement for Cattle Grazing 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 Programmatic Agreement for Livestock Grazing between the BLM and California SHPO 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 four 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 open motorized routes within close proximity to more identified cultural resources, and is estimated to result in more impact to unknown resources. Alternative 2, by closing the largest mileage of routes and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to cultural resources. However, where motorized 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 similar to cultural resources—they 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 and 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, as discussed in section 4.2.3.7 of the WEMO FEIS, 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 closure of routes, which would allow routes to re-vegetate and resume their original appearance. Of the four 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 motorized 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 closing the largest mileage of routes and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to visual resources. However, where motorized routes exist, the contribution of Alternative 2 to cumulative impacts would still be adverse.

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 DWMAs 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 reasonably foreseeable future 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 four alternatives evaluated in this SEIS, Alternative 2, by closing the largest mileage of routes and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to Special Designation areas. However, where motorized routes exist, the contribution of Alternative 2 to cumulative impacts would still be adverse. The relative impacts 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 “closed” 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

motorized access to wilderness areas, enhances the wilderness character of some 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 Ibs/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.

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 closure of routes 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 to these viewsheds. Of the four 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 motorized routes to access 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 closing the largest mileage of routes and applying the most restrictive minimization and mitigation measures, would result in the fewest adverse impacts to wilderness. However, where motorized 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, the WEMO Planning Area is quiet because most of the planning area is rural. 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 four 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 motorized 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 closure of

the largest mileage of routes 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 closures, specific project access decisions, and field office sub-region 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 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 route closures were estimated to occur within the WEMO Planning Area. The relative percentage of closed routes would be substantially higher using the new inventory information, but it is likely that closed route estimates 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 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 motorized access 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 discreet 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.

4.16 Impact Summary

Table 4.16-1 presents a comparison of the direct, indirect, and cumulative impacts associated with the WMRNP alternatives.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Air Quality	The magnitude of air emissions is 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. Route closures under the No Action Alternative total 8,900 miles, resulting in a reduction in fugitive dust emissions and beneficial impact due to re-vegetation and rehabilitation of disturbed soil areas. Mileage of routes near sensitive receptors and residences is only slightly more than in Alternative 2, and grazing impacts do not appreciably differ.	The magnitude of air emissions is the same for all alternatives. 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. Route closures under Alternative 2 total 10,718 miles, resulting in the highest reduction in fugitive dust emissions among the alternatives. Alternative 2 has the lowest mileage of routes near sensitive receptors and residences, and grazing impacts do not appreciably differ.	The magnitude of air emissions is the same for 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. Route closures under Alternative 3 total 4,978 miles, resulting in the lowest reduction in fugitive dust emissions among the alternatives. Alternative 3 has the highest mileage of routes near sensitive receptors and residences, and grazing impacts do not appreciably differ.	The magnitude of air emissions is the same for all alternatives. 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. Route closures under Alternative 4 total 9,507 miles, resulting in a reduction in fugitive dust emissions which is roughly similar to the No Action Alternative. Mileage of routes near sensitive receptors and residences is approximately the same as Alternative 1, and grazing impacts do not appreciably differ.
Climate Change	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.	None of the alternatives would lead to a change in the motorized vehicle 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 motorized vehicles or livestock grazing.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Geology, Soil, and Water Resources	The mileage of routes near desert washes and riparian areas in Alternative 1 is slightly higher than in Alternative 2. Soil and riparian impacts would decrease as a result of livestock grazing measures adopted in the 2006 WEMO Plan. The magnitude of erosion and compaction impacts would be higher for No Action than Alternative 2, and would be higher than under other alternatives if future grazing is authorized in vacant allotments under the 2006 WEMO Plan. Riparian impacts do not substantially vary between alternatives since most natural water sources used by livestock are excluded by fencing.	The route network under Alternative 2 would have the lowest mileage of motorized 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.	The route network under Alternative 3 would have the highest mileage of motorized 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. The magnitude of erosion and compaction impacts could be lower for Alternative 3 than for No Action, over the long term (if future grazing is authorized under No Action), and would be higher than Alternative 2. Riparian impacts are the same as No Action.	The mileage of routes near desert washes and riparian areas in Alternative 4 is approximately the same as Alternative 1. The magnitude of erosion and compaction impacts could be lower for Alternative 4 than for No Action, over the long term (if future grazing is authorized), and would be higher than Alternative 2. Riparian impacts are the same as No Action.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Vegetation	The mileage of routes in close proximity to sensitive vegetation communities, special status plants, and UPAs in Alternative 1 is slightly higher than in Alternative 2. Grazing impacts would be higher than under Alternative 2, even with measures adopted in the 2006 WEMO Plan, because more forage in sensitive species habitat would potentially be available for livestock grazing. Grazing impacts would not substantially vary between other Alternatives, in the short-term, and would be higher than under other alternatives if future grazing is authorized in vacant allotments under the 2006 WEMO Plan.	The route network under Alternative 2 would have the lowest mileage of motorized 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.	The route network under Alternative 3 would have the highest mileage of motorized 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 in the short term, but may be lower over the longer term.	The mileage of routes in close proximity to sensitive vegetation communities, special status plants, and UPAs in Alternative 4 is approximately the same as in Alternative 1. Grazing impacts are more than Alternative 2 and the same as Alternative 3.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Wildlife	The mileage of routes in close proximity to special status wildlife areas in Alternative 1 is slightly higher than in Alternative 2. Grazing impacts to wildlife are the same as impacts for vegetation; they would be higher under No Action than Alternative 2, and, over the long-term higher under No Action than under Alternative 3 or 4 impacts.	The route network under Alternative 2 would have the lowest mileage of motorized 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. Grazing impacts to wildlife are the same as impacts for vegetation; they would be lower under Alternative 2 than the other alternatives.	The route network under Alternative 3 would have the highest mileage of motorized 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. Grazing impacts to wildlife are the same as impacts for vegetation; Alternative 3 impacts would be lower than under No Action and higher than under Alternative 2.	The mileage of routes in close proximity to special status wildlife areas in Alternative 4 is slightly higher than in Alternative 1. Grazing impacts to wildlife are the same as impacts for vegetation; Alternative 4 impacts would be lower than under No Action and higher than under Alternative 2.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Socioeconomics	The mileage of routes available to support recreation and authorized users in Alternative 1 is slightly higher than in Alternative 2. 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 or 4, but would be lower than under Alternative 2.	The route network under Alternative 2 would have the lowest mileage of motorized 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. Impacts under Alternative 2 are higher than under the other Alternatives because it would result in an additional loss to individual lessees and the local tax base.	The route network under Alternative 3 would have the largest mileage of motorized routes available to support recreation and authorized users of BLM lands. The increase in the mileage of motorized routes would be a beneficial impact to recreation-focused businesses and other authorized users, as compared to the No Action Alternative. Impacts are the same as No Action.	The mileage of routes available to support recreation and authorized users in Alternative 4 is slightly higher than in Alternative 1. Impacts are the same as No Action.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Recreation	The mileage of routes available to support recreation in Alternative 1 is slightly higher than in Alternative 2. There are no substantial grazing impacts under any of the alternatives.	The route network under Alternative 2 would have the lowest mileage of motorized 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 motorized routes available to support recreation. The increase in the mileage of motorized 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 routes available to support recreation in Alternative 4 is slightly higher than in Alternative 1.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Livestock Grazing	The mileage of routes available to support authorized users in Alternative 1 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 West Mojave Planning Area. Grazing would be evaluated on a case-by-case basis on inactive allotments when new applications are received.	The route network under Alternative 2 would have the lowest mileage of motorized 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 and CHUs.	The route network under Alternative 3 would have the largest mileage of motorized routes available to support the operations of grazing permittees and lessees. By increasing the mileage of motorized 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 West Mojave Planning Area. Grazing would be evaluated on a case-by-case basis on inactive allotments when new applications are received.	The mileage of routes available to support grazing in Alternative 4 is slightly higher than in Alternative 1. Livestock grazing would continue on 19 active allotments under the terms and conditions contained in the Final Grazing Decisions for active allotments in the West Mojave Planning Area. Grazing would be evaluated on a case-by-case basis on inactive allotments when new applications are received.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Energy Production, Utility Corridors, and Other Land Uses	The mileage of the existing authorized or permitted routes are the same in all alternatives. There are no substantial grazing impacts under any of the alternatives.	The route network under Alternative 2 would have the lowest mileage of motorized 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 motorized 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 motorized 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 routes available to support authorized users in Alternative 4 is slightly higher than in Alternative 1.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Cultural Resources	The mileage of routes in close proximity to known cultural resources in Alternative 1 is slightly higher than in Alternative 2. Grazing impacts would be the same as Alternatives 3 and 4 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 and CHUs.	The route network under Alternative 2 would have the lowest mileage of motorized 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. 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 and CHUs would be eliminated.	The route network under Alternative 3 would have the highest mileage of motorized 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. Grazing impacts are the same as the No Action Alternative.	The mileage of routes in close proximity to known cultural resources in Alternative 4 is slightly higher than in Alternative 1. Grazing impacts are the same as the No Action Alternative.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Visual Resources	The mileage of motorized routes in the most sensitive VRM classes (Class I and II) is slightly higher than in Alternative 2, slightly lower than Alternative 4, but much lower than Alternative 3. There are no substantial grazing impacts under any of the alternatives.	The mileage of motorized routes in the most sensitive VRM classes (Class I and II) is lowest in Alternative 2. Although remaining motorized routes would continue to have an adverse impact on the visual character of the desert, closure of routes 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 No Action Alternative.	The mileage of motorized 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 closed routes, and would therefore have an adverse impact on visual resources, as compared to the No Action Alternative.	The mileage of motorized routes in the most sensitive VRM classes (Class I and II) is slightly higher than in Alternatives 1 and 2, but much lower than Alternative 3.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Special Designations	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs is slightly higher than in Alternative 2, slightly lower than Alternative 4, but much lower than Alternative 3. Grazing impacts would be higher than under Alternative 2, even with measures adopted in the 2006 WEMO Plan, because more specially designated areas would potentially be available for livestock grazing. Grazing impacts would not substantially vary between other Alternatives in the short-term, and would be higher under No Action than under the other alternatives, which eliminate the potential for future grazing in additional special areas.	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs 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 under this alternative than other Alternatives because DT ACECs would immediately become unavailable for livestock grazing or damage.	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs 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 are more than Alternative 2 and the same as No Action in the short term, but lower over the longer term.	The mileage of motorized routes in ACECs, CDNCL, DT ACECs, national monuments, wilderness, WSAs, and LWCs is slightly higher than in Alternatives 1 and 2, but much lower than Alternative 3. Grazing impacts are the same as Alternative 3.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Noise	The mileage of routes near sensitive receptors and residences is only slightly more than in Alternative 2, and much less than in Alternative 3. There are no substantial grazing impacts or differences among the alternatives.	The route network under Alternative 2 would have the lowest mileage of motorized 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 motorized 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 routes near sensitive receptors and residences is only approximately the same as in Alternative 1.
Travel and Transportation Management	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 would maintain the current level of connections and access, and would therefore have no impact on travel and transportation management. There are no substantial grazing impacts to the alternatives. 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 access these areas. As a result, this alternative would have a slight adverse, direct impact to travel and transportation management. There are no substantial grazing impacts to the TTM alternatives. 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 motorized routes, 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. There are no substantial grazing impacts to the TTM alternatives.	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 specific comments regarding access to specific locations and users. As a result, Alternative 4 would be the most beneficial to travel and transportation management. There are no substantial grazing impacts to the TTM alternatives.

Table 4.16-1. Impact Comparison

Resource	No Action Alternative	Alternative 2	Alternative 3	Alternative 4
Paleontological Resources	The mileage of 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 and 4 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 and CHUs.	The route network under Alternative 2 would have the lowest mileage of motorized 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 the lowest magnitude of direct, 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 and CHUs would be eliminated.	The route network under Alternative 3 would have the highest mileage of motorized 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.	The mileage of routes in areas with High/Very High potential for paleontological resources in Alternative 4 is slightly higher than in Alternative 1. Grazing impacts are the same as the No Action Alternative.

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 Irretrievable Commitment of Resources
- Growth-Inducing Effects of the Proposed Action
- Public Participation

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 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 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. 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

Designation of conservation areas and closure of routes within those areas would commit recreation opportunity resources to ecosystem conservation for the duration of the term of the West Mojave Plan and may result in long-term impacts to cultural resources as a result of changing use patterns on the route network. These impacts are not considered irreversible or irretrievable because changes may be made via plan amendment or through adaptive management.

Resource impacts associated with motorized vehicle 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. 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, are expected to be irreversible long beyond the timeframe of the WEMO Plan and DRECP.

The impacts of motor vehicle use on cultural resources also can be irreversible and irretrievable as well. 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, including avoidance, where appropriate.

5.3 Growth-Inducing Effects

Population growth in the West Mojave is projected to range between 1.59% and 2.21% 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 to areas also helps drive growth. However, the off-highway 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.

5.4 Public Participation

Prior to the start of the scoping period, the BLM mailed 51 Cooperating Agency invitation letters to federal, state, and local agencies identified as having special expertise or jurisdiction by law applicable to the WEMO Project. The letters notified potential Cooperating Agencies of the WEMO Project, provided an overview of the WMRNP, invited participation as a Cooperating Agency, and provided contact information to submit questions.

The BLM also mailed 16 Tribal consultation letters to potentially affected Tribes formally initiating government-to-government consultation regarding the WEMO Project. The Tribal consultation letters provided an overview of the WEMO Project; requested consultation and invited input; and provided contact information to submit any questions, concerns, or comments on the WEMO Project.

The DAC is a citizen-based Resource Advisory Council that provides recommendations on the management of public lands in the BLM's California Desert District. The DAC operates under a Charter established under Section 309 and Section 601 (g)(1) of the FLPMA, as amended (43 U.S. Code 1739); and all other provisions of the law. In December 2011, in response to the WEMO Project, the DAC established the WEMO Route Network Project Subgroup (WRNPS), which provides input regarding route-specific and network issues pertinent to the WEMO planning area for BLM to consider. The WRNPS is composed of members representing industry, recreation, conservation and the public at large and holds regularly scheduled meetings that are open to the public. The WRNPS has met more than a dozen times, held additional public outreach sessions, and prepared two reports for the District Manager identifying issues and providing recommendations and rationales for area-wide strategies and route-specific designations in the planning area.

The planning process was initiated by a Notice of Intent (NOI) to prepare a Supplemental Environmental Impact Statement and Proposed Plan Amendment to the 2006 WEMO Plan that was published in the Federal Register on September 13, 2011, and clarified on May 2, 2013. The NOI served as notification of the intent to prepare an EIS as required in 40 CFR 1501.7, as well as of potential amendments to the CDCA Plan, and requested comments on relevant issues, National Historic Preservation Act (NHPA) (16 U.S.C. 470(f) concerns, and initial planning criteria for the plan amendment.

The NOI indicated that the Proposed Plan Amendment and SEIS would consider the following:

- Amending the Motorized-Vehicle Access (MVA) Element of the CDCA Plan to modify the language regarding the process for designating routes in the West Mojave Planning Area;
- Reconsider other MVA Element land-use-planning level guidance and minimization strategies for the West Mojave Planning Area;

- Revisit the route designation process for the West Mojave Planning Area;
- Clarify the West Mojave Planning Area baseline for route designation and analysis;
- Establish a route network in the Planning Area consistent with current guidance and new information;
- Adopt travel management areas (TMAs) to facilitate implementation of the West Mojave route network;
- Provide or modify network-wide and TMA-specific activity-plan level minimization, mitigation, and other implementation strategies for the West Mojave Planning Area; and
- Respond to specific issues related to the US District Court WEMO Remand Remedy Order issued in 2011.

Following the NOI, BLM held two overview public scoping meetings on September 27 and 29, 2011, in Ridgecrest and Barstow, California. Appendix A presents a summary of the scoping process, and the comments that were received during the process. As part of the scoping process, the BLM hosted scoping meetings and public workshops for the public and other interested parties to learn about and submit comments on the WMRNP. The BLM advertised the scoping meetings using a variety of outreach materials including the Project website and news releases. The outreach materials provided an overview of the proposed project; provided meeting locations, dates, and times; explained the purpose of the scoping meetings; identified methods for making comments; and provided contact information for questions regarding the WEMO Project. All materials provided an e-mail address for submitting comments (cawemopa@blm.gov) and a link to the Project website (http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html) which contained a comment form and additional project background information.

The BLM held 10 public scoping meetings to initiate the BLM's process for reconsidering motorized vehicle route designations in the WEMO Project planning area. The BLM held two overview open house public meetings September 27 and 29, 2011, in Ridgecrest and Barstow, California, and based on scoping comments and feedback from those meetings, followed with eight public travel designation workshops, also held in Ridgecrest and Barstow, in January and February 2012. A total of 299 people, not including BLM staff, attended the scoping meetings and workshops. Prior to the meetings, the BLM posted current maps and additional project information to the Project website for public review. Table 2 of the Scoping Report (Appendix A) provides the locations, dates, times, and number of attendees at each scoping meeting. On May 2, 2013 BLM published a clarified NOI to indicate the planning-level vs non-planning level decisions, and to clarify that the plan amendment would be an EIS-level amendment. Three additional public workshops were held in January, 2014, in Barstow, Bishop, and Ridgecrest, which targeted tribal communities.

The Notice of Availability of the WMRNP Draft SEIS was published in the Federal Register on March 6, 2015 (FR Vol. 80, No. 44, Pgs. 12194 to 12195). The initial public review period began on March 6, 2015, and continued for 90 days until June 4, 2015. During that period, BLM held public meetings in Ridgecrest on March 31, 2015, in Victorville, on April 2, 2015, in Lone Pine, on April 7, 2015, and on April 15, 2015, in Yucca Valley. BLM received 458 public comment letters within this comment period.

Based on comments requesting an extension of the public comment period, and the ability to review the Draft SEIS within the context of the DRECP, an additional public comment period was re-opened beginning on September 25, 2015. This additional comment period was open for 120 days, until January 25, 2016. During this period, two additional public meetings were held in Victorville on December 15, 2015, and in Ridgecrest on December 17, 2015. During this comment period, BLM received an additional 286 public comment letters.

Following each of those public comment periods, BLM sorted and reviewed the public comments. Where appropriate, changes were made in the route designation alternatives, analysis, and/or text of the SEIS. Comments that were not route-specific were organized into categories, and responses were developed to each group of comments. The response–to-comment document is provided in Appendix I of this Draft SEIS. There were approximately 11,900 route-specific comments in which a commenter requested a change to the designation of a route. Where these comments identified a specific route, requested a change in its designation, and provided rationale for the proposed change, they were reviewed by resource staff, and changes to designations were made in the Alternative 4 route network, where appropriate.

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. In a letter dated April 15, 2015, BLM initiated formal consultation on the WMRNP. The 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.

The BLM California currently utilizes *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* (Supplement) 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.

6.2 List of Preparers

Though individuals have primary responsibility for preparing sections of the Proposed Programmatic Agreement and the EIS (Table 6.2-1), the document is an interdisciplinary team effort. In addition, internal review of the document occurs throughout preparation. Specialists at the BLM's Field Office, State Office, and Washington Office reviewed the analysis and supplied information, as well as provided document preparation oversight. Contributions by individual preparers may be subject to revision by other BLM specialists and by management during internal review.

Table 6.2-1. List of Preparers

Name	Primary Responsibility
BLM – Barstow Field Office	
Edy Seehafer	Project Manager
Matt Toedtli	Project Manager
Jeff Childers	Resources Branch Chief
Anthony Chavez	Soil/Water/Air/Range
Jim Shearer	Cultural Resources
Birgit Hoover	Lands & Realty
Chris Otahal	Biological Resources
Shelly Jackson	Field Documentation (GIS)
BLM – Ridgecrest Field Office	
Craig Beck	Assistant Project Manager, Recreation
Glenn Harris	Soil/Water/Air
Jeff Gicklhorn	Range/Biological Resources
Ashley Blythe	Cultural Resources
Carrie Woods	Biological Resources
Marty Dickes	Wilderness/Recreation
BLM – California Desert District Office	
Larry LePre	Biological Resources
Peg Margosian	Support Staff (GIS)
BLM – California State Office	
James Weigand	Environmental Justice, Soils, Geology, Air Quality, and Global Climate Change
Jack Hamby	Range Management
Elizabeth Meyer-Shields	Planning
AECOM Environment	
Robert Dover	Project Manager, Water Resources
Erika Grace	Project Coordinator
Annie Ferguson	Recreation, Travel, Visual
Melanie Martin	Planning
Brent Read	GIS Analysis
Steve Ensley	GIS Analysis
Bridget Ronayne	Access Database Development
Jim Harvey	Access Database Development
Patti Lorenz	Biological Resources
Sean Wazlaw	Air, Traffic, and Noise
Steve Graber	Socioeconomics and Environmental Justice
Rebecca Apple	Cultural Resources
Tanya Wayhoff	Cultural Resources
Regina Greer	Formatting, Production

CHAPTER SEVEN
ACRONYMS AND GLOSSARY

7.1 List of Acronyms

Acronyms used throughout this document have been compiled and are provided in alphabetical order below in Table 7.1-1.

Table 7.1-1. List of Acronyms

Acronym	Definition
4WD	four-wheel-drive
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
ATV	all-terrain vehicle
AUM	animal unit months
AVAQMD	Antelope Valley Portion of LA County Air Quality Management District
ACEC	Area of Critical Environmental Concern
APE	Area of Potential Effects
BMP	Best Management Practices
BA	Biological Assessment
BO	Biological Opinion
BLM	Bureau of Land Management
CBDT	California Backcountry Discovery Trail
CDAWG	California Desert Air Working Group
CDCA	California Desert Conservation Area
CDNCL	California Desert National Conservation Land
CDPA	California Desert Protection Act
CDFW	California Department of Fish and Wildlife
CHP	California Highway Patrol
CHU	Designated Critical Habitat Unit
CNDDB	California Natural Diversity Database
CRHR	California Register of Historical Resources
CO_2	carbon dioxide
CO	carbon monoxide
CDC	Centers for Disease Control and Prevention
cm	centimeter
CFC	chlorofluorocarbon
CWA	Clean Water Act
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CTTM	Comprehensive Travel and Transportation Management
CAPA	Coordinated/ Collaborative Access Planning Area

Table 7.1-1. List of Acronyms

Acronym	Definition
CEQ	Council on Environmental Quality
the Court	United States District Court for the Northern District of California
CH_4	methane
DFA	Development Focus Area
DoD	Department of Defense
DOE	Department of Energy
DRECP	California Desert Renewable Energy Conservation Plan
DTNA	Desert Tortoise Natural Area
DT ACEC	Desert Tortoise Area of Critical Environmental Concern
DWMA	Desert Wildlife Management Area
DEIS	Draft Environmental Impact Statement
EKAPCD	East Kern Air Pollution Control District
ESA	Endangered Species Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERMA	Extensive Recreation Management Area
FAMS	Facility Asset Management System
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FLPMA	Federal Land Policy and Management Act
GIS	Geographic Information Systems
GPS	global positioning system
GBUAPCD	Great Basin Unified Air Pollution Control District
GBVAB	Great Basin Valley Air Basin
GHG	Greenhouse Gas
GTLF	Ground Transportation Linear Features
HCFC	hydrochlorofluorocarbon
HFC	hydrofluorocarbon
HSG	Hydrologic Soils Group
IM	Instruction Memorandums
I-15	Interstate-15
I-40	Interstate-40
JD	jurisdictional delineation
kV	kilovolt
L_{dn}	day-night average noise
L_{eq}	equivalent continuous sound level
LUP	Land Use Planning
MCAGCC	Marine Corps Air Ground Combat Center
MW	megawatt
MOU	Memorandum of Understanding
MPH	miles per hour

Table 7.1-1. List of Acronyms

Acronym	Definition
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MFTL	Mojave Fringed-toed lizard
MGS	Mohave ground squirrel
MVA	Motorized vehicle access
MUC	Multiple Use Class
NAIP	National Agriculture Imagery Program
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHD	National Hydrography Dataset
NLCS	National Landscape Conservation System
NPS	National Park Service
NRHP	National Register of Historic Places
NAWS CL	Naval Air Weapons Station China Lake
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
N_2O	nitrous oxide
NGO	non-governmental organizations
NA	Not Applicable
NECO	Northern and Eastern Colorado
NEMO	Northern and Eastern Mojave
NOI	Notice of Intent
OHV	off-highway vehicle
O_3	Ozone
PDSI	Palmer Drought Severity Index
PA	Plan Amendment
PM	particulate matter
$PM_{2.5}$	fine particulate matter
PM_{10}	respirable particulate matter
PFC	perfluorocarbons
PSD	prevention of significant deterioration
PEIS	Programmatic Environmental Impact Statement
PFC	proper functioning condition
P.L.	Public Law
RHT	Rademacher Hills Trail
ROD	Record of Decision
ROV	recreational off-highway vehicle
RWQCB	Regional Water Quality Control Board
RCRA	Resource Conservation and Recovery Act
RMP	Resource Management Plan
ROW	right-of-way grant

Table 7.1-1. List of Acronyms

Acronym	Definition
SBNF	San Bernardino National Forest
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SDWA	Safe Drinking Water Act
SEIS	Supplemental Environmental Impact Statement
SRMA	Special Recreation Management Area
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO2	sulfur dioxide
SO4	sulfate
SRP	Special Recreation Permit
SUV	sport utility vehicle
SWRCB	State Water Resources Control Board
TMA	Travel Management Area
TTM	Travel and Transportation Management
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USFS	United States Forest Service
UPA	Unusual Plant Assemblages
VRI	Visual Resource Inventory
VRM	Visual Resource Management
VOC	volatile organic compounds
WEG	Wind Erodibility Group
WEMO	West Mojave
WEMO Plan	2006 West Mojave Plan Amendment
WMRNP	West Mojave Route Network Project
WSA	Wilderness Study Area

7.2 Glossary

This section provides the definitions of terms used or referred to in this document that cannot be found in a standard dictionary. These terms augment or expand the scope of terms in the 2006 WEMO Plan to address the analysis in this Supplemental EIS.

Adaptive Management: Adaptive management is an integrated method for addressing uncertainty in natural resource management. It also refers to a structured process for learning by doing. Therefore, we are defining adaptive management broadly as a method for examining alternative strategies for meeting measurable goals and objectives, and then, if necessary, adjusting future management actions according to what is learned. An adaptive management strategy may (1) identify the uncertainty and the questions that need to be addressed to resolve

the uncertainty; (2) develop alternative strategies and determine which experimental strategies to implement; (3) integrate a monitoring program that is able to detect the necessary information for strategy evaluation; and (4) incorporate feedback loops that link implementation and monitoring to a decision-making process (which may be similar to a dispute- resolution process) that result in appropriate changes in management. (Adapted from the Final Addendum to the [USFWS] Handbook for Habitat Conservation Planning and Incidental Take Permitting Process.)

Area of Critical Environmental Concern: A BLM land use designation. Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards. The identification of a potential ACEC shall not, of itself, change or prevent change of the management or use of public lands. ACECs can be located within any BLM multiple use class, and include areas that are popular recreational destinations or that are used for scientific investigations.

Assets – Term utilized to describe roads, primitive roads, and trails that comprise the transportation system. Also the general term utilized to describe all BLM constructed "Assets" contained within the Facility Asset Management System (FAMS).

Asset Classification – Identification of the appropriate design and maintenance standards, which are no higher than necessary to accommodate the intended function(s) of routes. Asset classification may also be utilized to identify a desired future outcome to upgrade or downgrade a route, to reflect the route designation, to incorporate additional field information and changing maintenance needs, or to focus or reflect travel use patterns.

Administrative Use: Official use related to management of the public lands and resources by Federal, State, or local government personnel in the performance of their official duties.

Animal Unit Month (AUM): The amount of forage needed to sustain one cow, five sheep, or five goats for a month. A full AUMs fee is charged for each month of grazing by adult animals if the grazing animal (1) is weaned, (2) is 6 months old or older when entering public land, or (3) will become 12 months old during the period of use. For fee purposes, an AUM is the amount of forage used by five weaned or adult sheep or goats or one cow, bull, steer, heifer, horse, or mule. The term AUM is commonly used in three ways: (1) stocking rate as in X acres per AUM, (b) forage allocation as in X AUMs in allotment A, and (3) utilization as in X AUMs consumed from Unit B.

Authorized Use: BLM issues leases, permits, rights-of-ways, and maintenance agreements to authorize certain kinds of development, uses, and/or occupancy of the public lands. Leases and permits are issued for such activities as temporary or permanent commercial facilities (except on mining claims), harvesting native or introduced species, residential occupancy, recreation (e.g., camping, ski resorts), agriculture (crops, apiaries), construction equipment storage, livestock holding or feeding areas not related to a grazing permit, water pipelines and well pumps (for irrigation or other purposes), and advertising displays. Rights-of-way are issued for such things as roads, pipe lines, aqueducts, and power transmission lines.

Biological Opinion: The Federal Endangered Species Act (FESA) requires federal agencies to consult with the FWS to ensure that the actions they authorize, fund, or carry out will not jeopardize listed species (see below, Section 7 definition). Where the USFWS determines the

proposed action will jeopardize the species, it must issue a biological opinion offering reasonable and prudent alternatives identifying measures that, if adopted, could avoid jeopardy to the listed species.

California Desert Conservation Area (CDCA): A region encompassing BLM- administered public lands within the Mojave and Colorado deserts of southern California. Congress designated the California Desert as a Conservation Area in 1976. In making that designation (in the Federal Land Policy and Management Act), Congress made the following findings:

(1) The California desert contains historical, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources that are uniquely located adjacent to an area of large population;

(2) The California desert environment is a total ecosystem that is extremely fragile, easily scarred, and slowly healed;

(3) The California desert environment and its resources, including certain rare and endangered species of wildlife, plants and fishes, and numerous archaeological and historic sites, are seriously threatened by air pollution, inadequate Federal management authority, and pressures of increased use, particularly recreational use, which are certain to intensify because of the rapidly growing population of southern California [43 USC 1781(a)].

The purpose of the designation was "to provide for the immediate and future protection and administration of the public lands in the California desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." (43 USC 1781(b).)

California Desert Conservation Area Plan (CDCA Plan): In 1976, Congress found that:

(1) The use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles [43 USC 1781(a)].

Congress directed the Secretary of the Interior to "prepare and implement a comprehensive, long-range plan for management, use, development, and protection of the public lands within the California Desert Conservation Area" (43 USC 1781(d)). The CDCA Plan was completed by the BLM and signed by the Secretary of the Interior in 1980. The CDCA Plan, as amended since its original adoption, serves as the BLM's general land use plan for public lands in this region, including all public lands located within the western Mojave Desert.

Closed Area – As identified in 43 CFR 8342.1, an area closed to off-highway vehicle use. Public OHV use in these areas is prohibited. Use of off-highway vehicles in closed areas may be allowed for certain reasons; however, such use shall be made only with the approval of the authorized officer.

Closed Route – As identified in the CDCA Plan, a closed route is a route on which access is prohibited by motorized vehicles except: (1) fire, military, emergency or law enforcement vehicles when used for emergency purposes; (2) combat or combat support vehicles when used for national defense purposes; (3) vehicles whose use is expressly authorized by an agency head

under a permit, lease, or contract; and (4) vehicles used for official purposes by employees, agents, or designated representatives of the Federal Government or one of its contractors. Use must be consistent with the multiple use guidelines for that area. This term is being supplanted by "Translinear Disturbance," a term from the 2005 TTM guidance.

Comprehensive Transportation and Travel Management (CTTM) - The proactive interdisciplinary planning, on-the-ground management, and administration of travel networks (both motorized and non-motorized) to ensure public access, natural resources, and regulatory needs are considered. It consists of inventory, planning, designation, implementation, education, enforcement, monitoring, easement acquisition, mapping and signing, and other measures necessary to provide access to public lands for a wide variety of uses (including uses for recreational, traditional, casual, agricultural, commercial, educational, and other purposes).

Conserve: To allow natural habitat or species populations to remain in place.

Critical Habitat: FESA defines this as the specific areas within the geographical area occupied by a listed species on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and specific areas outside the geographical area occupied by a listed species upon a determination by FWS that such areas are essential for the conservation of the species.

Desert Tortoise Area of Critical Environmental Concern (DT ACEC): Administrative area within the recovery unit established under the 2006 WEMO Plan as DWMAs, and which are managed such that reserve-level protection is afforded to desert tortoise populations while maintaining and protecting other sensitive species and ecosystem functions; DT ACECs are essential to the long-term recovery, viability, and genetic diversity of the species and are implemented to provide for the long-term viability of tortoise populations and the ecosystems upon which they depend. (see Desert Wildlife Management Area).

Designated Roads and Trails: Specific roads and trails identified by the BLM (or other agencies) where some type of motorized vehicle use is appropriate and allowed either seasonally or year-long. (BLM Manual H-1601-1 Land Use Planning Handbook).

Desert Wildlife Management Area (DWMA): Former name of administrative areas now managed as DT ACECs. (see Desert Tortoise Area of Critical Environmental Concern).

Endangered Species: A species that is in danger of extinction throughout all, or a significant portion, of its range.

Goals and Objectives: Goals are the broad guiding principles for the transportation and travel management and grazing program strategies, as well as the biological conservation program of the 2006 WEMO Plan. They are the rationale behind the minimization and mitigation strategies that are developed for these programs. If the operating program is relatively complex, the goals are further divided into manageable, and, where appropriate, measurable objectives. Transportation and travel management objectives may apply planning area wide, by TMA, or to specific aspects of travel management. Grazing program objectives likewise may be program wide, by specific allotment, or to specific aspects of allotment management. Biological objectives are the different components needed to achieve the biological goal such as preserving sufficient habitat, managing the habitat to meet certain criteria, or ensuring the persistence of a specific minimum number of individuals. The biological goals and objectives may be either

habitat or species based. (Adapted from the Final Addendum to the USFWS Handbook for Habitat Conservation Planning and Incidental Take Permitting Process.)

Ground Disturbance Cap: Generally, a limitation on ground-disturbing activities in California Desert National Conservation Lands and ACECs. Expressed as a percentage of total BLM-managed California Desert National Conservation Lands and/or ACEC acreage, and cumulatively considers past, present, and future (proposed activity) ground disturbance. Baseline/existing (past plus present) ground disturbance would be determined using the most current imagery and knowledge at the time of an individual activity proposal. Specifically, the ground disturbance caps will be implemented as either a limitation or an objective triggering disturbance mitigation. The ground disturbance cap functions as an objective, triggering a specific disturbance mitigation requirement if the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is at or above its designated cap. The disturbance mitigation requirement remains in effect until the unit drops below its specified cap, at which time the disturbance cap becomes a limitation. Under the 2006 WEMO Plan, the threshold for tortoise DWMAs was 1% of the total surface area of those DWMAs, that is, about 15,000 acres. Under DRECP, unit-specific thresholds have been established in all ACECs, DT ACECs, and CDNCLs.

Ground Disturbance Mitigation: A discrete form of compensatory mitigation, unique to the ground disturbance cap implementation, and separate and distinct from other required mitigation in the DRECP LUPA. The disturbance mitigation requirement is triggered when the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is at or above its designated cap. The disturbance mitigation requirement remains in effect until the California Desert National Conservation Lands and/or ACEC drops below its designated cap.

Ground Transportation Linear Feature (GTLF): A geospatial database of transportation (from motorized to foot) linear features as they exist on the ground. Features include all linear features; not just what is in the BLM Transportation System.

Habitat: The location where a particular taxon of plant or animal lives and its surroundings, both living and non-living; the term includes the presence of a group of particular environmental conditions surrounding an organism including air, water, soil, mineral elements, moisture, temperature, and topography.

Land Disturbance: Clearing, excavating, grading or other manipulation of the terrain.

Land Disturbing Activity: Any activity that results in the clearing, excavating or other manipulation of the terrain.

Land Tenure Adjustment (LTA) Program: Numerous land exchanges have been taking place within the Western Mojave Land Tenure Adjustment Area, pursuant to a joint BLM and Air Force project initiated in the late 1980s. These exchanges, facilitated by Air Force funding, are intended to preclude land uses not compatible with the training/testing mission of Edwards AFB, to encourage private land development in appropriate locations, and to provide for more efficient management of public lands. The acquisition of land through LTA project exchanges does not, in and of itself, create a commitment for long-term management or prevent future development.

Lands with Wilderness Characteristics: Lands that have been inventoried and determined by the BLM to contain wilderness characteristics as defined in Section 2(c) of the Wilderness Act.

Limited Area – As identified in 43 CFR 8342.1, an area where vehicular access is limited to designated trails, and may be otherwise restricted at certain times, in certain areas, and/or to certain vehicular use.

Limited Route – Routes that are available for use, and the specific conditions or specific classes of users to which the route is available. These conditions may be of any type but can generally be accommodated within five categories: (1) to all users on designated trails, (2) to a specific subcategory of motorized users or specified numbers of vehicles, types of vehicles, time or season of vehicle use, (3) to permitted or licensed use or to administrative use only; (4) restricted to non-mechanized use, or (5) restricted to non-motorized use. All users are, at a minimum, restricted to the designated trail, except as identified for stopping, parking, and camping.

Linkage: Region connecting two or more conservation areas. Linkages may act as dispersal corridors for wide-ranging species, provide habitat for pollinators, or serve to maintain genetic continuity between major populations of a species. Some linkages, particularly large drainages, serve to connect several different habitats over an elevational gradient.

Maintain: On-the ground activities that support the use of the network, and to protect natural or cultural resources found near the route.

Maintenance Intensities – Transportation System Assets - BLM Route Maintenance Intensities provide guidance for appropriate "standards of care" to recognized routes within the BLM. Recognized routes by definition include Roads, Primitive Roads, and Trails carried as assets within the Bureau of Land Management Facility Asset Management System (FAMS).

Management Prescription: Discrete component of the West Mojave Plan's habitat conservation strategy. A prescription could include take-avoidance measures intended to minimize and mitigate the impacts of a new development, as well as a proactive management program to be undertaken by land management agency (for example, to control raven populations).

Mechanized Travel: Moving by means of mechanical devices that are not powered by a motor or engine, such as a bicycle or landsailer.

Minimize Take: Measures that will be implemented on-site to minimize impacts to the desert tortoise and other special-status species (e.g., fencing, biological monitors, reduced speed limit, education programs, etc.).

Mitigate Take: Measures that will be implemented off-site to compensate for impacts to a special-status species (e.g. compensatory land purchase).

Mohave Ground Squirrel Habitat Conservation Area: An area identified to apply special measures to protect habitat and conserve the MGS and other special-status species occurring in that area.

Monitoring: Monitoring provides information necessary to assess plan compliance and project impacts, and to verify progress toward meeting plan goals and objectives. Monitoring also provides data to evaluate the success of the 2006 WEMO Plan operating program and to make appropriate adjustments to the program. Monitoring is divided into two types. Compliance monitoring is verifying that the terms of the Plan are being carried out. Effects and effectiveness monitoring evaluates the effects of the action and determines whether the effectiveness of the Plan strategies are consistent with the assumptions and predictions made when the plan is developed and approved; in other words, whether the 2006 WEMO Plan is achieving the goals

and objectives as outlined in that plan and supplemented herein for travel management and grazing. (Adapted from the Final Addendum to the [USFWS] Handbook for Habitat Conservation Planning and Incidental Take Permitting Process).

Motor-Dependent Activities: Activities that require a motor vehicle to either accomplish the activity or reach the activity location.

Motorized Travel: Moving by means of vehicles that are propelled by motors or engines such as cars, trucks, OHVs, motorcycles, and motorhomes. Routes designated as motorized are available for all forms of motorized travel unless otherwise limited as indicated by a sub-designation. If a sub-designation is placed upon the route then that route is limited to that form of motorized travel only, such as a motorcycle only route. Routes designated as motorized are also available for non-motorized and non-mechanized travel.

Motorized Vehicle Access Network: A general term referring, collectively, to routes of travel (roads, ways, trails and washes) on BLM-administered public lands designated by that agency as either open for motor vehicle use, or open in a limited matter (e.g. subject to restrictions based upon vehicle numbers or type, time or season of use, permitted or licensed use, or subject to speed limits).

Multiple Use Class: A BLM land use planning designation. On the basis of uses and resource sensitivity, the BLM's CDCA Plan geographically designated nearly all public lands within the CDCA into four multiple-use classes (MUC). These MUCs were eliminated in the 2016 DRECP.

Non-mechanized Travel: Moving by foot, horseback, other animal-powered travel, and cross-country skiing; travel not aided by mechanical means. Routes designated as non-mechanized are available for all forms of non-mechanized travel unless otherwise limited as indicated by a sub-designation. If a sub-designation is placed upon the route then that route is limited to that form of travel only, such as a hiking only route.

Non-motorized Travel: Moving by foot, stock, or pack animal, or mechanized vehicle such as a bicycle or landsailer. Routes designated as non-motorized are available for all forms of non-motorized travel unless otherwise limited as indicated by a sub-designation. If a sub-designation is placed upon the route then that route is limited to that form of non-motorized travel only, such as a bicycle only route. Routes designated as non-motorized are also available for non-mechanized travel.

Off-Highway Vehicle (off-road vehicle) - Any motorized vehicle capable of, or designated for travel on or immediately over land, water or other natural terrain, excluding: (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used for national defense.

Open Area: An area where all types of OHV vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342, and subject to permission of private land owners, if applicable. The CDCA Plan has designated OHV Open Areas for (1) those lands specifically designated as open for vehicle travel, and (2) certain sand dunes and dry lakebeds. (from CDCA Plan as amended, 1999 reprint, page 76.)

Open Route: As identified in the CDCA Plan, an open route is a route on which access by motorized vehicles is allowed. Special uses with potential for resource damage or significant conflict with other use may require specific authorization. Open routes are no longer being designated. All routes are Limited to the designated trail and are therefore considered Limited Routes, consistent with the 2005 TTM guidance.

Primitive Road: A linear route managed for use by four-wheel drive or high clearance vehicles. These routes do not normally meet any BLM road design standards.

Primitive Trail - Roadlike feature on public land in wilderness study areas used by vehicles having four or more wheels, which receives no maintenance to guarantee regular and continuous use.

Protect: To take positive action to avoid harm to a covered species or to conserve its habitat in a natural and undisturbed condition.

Reclamation: Taking such reasonable measures as will prevent unnecessary or undue degradation of the Federal lands, including reshaping land disturbed by operations or activities to an appropriate contour and, where necessary, revegetating disturbed areas so as to provide a diverse vegetative cover and/or disguise previous activities/uses.

Recovery Plan: Plans developed by FWS that recommend a program to provide for the conservation and survival of listed species. These plans include site-specific management actions and recommendations to achieve the conservation and survival of the species; objective and measurable criteria for delisting; and time and cost estimates.

Recovery Unit: Distinct population segments of a listed species. The desert tortoise, for example, is listed as threatened by the Service within those portions of its range north and west of the Colorado River. This area is divided into six recovery units. The western Mojave Desert is one of those recovery units. Recovery is judged in the context of each of these units independently.

Rehabilitation: The site will be returned to a stable form, not necessarily to a condition that existed prior to surface disturbing operations. Land use alternatives may be considered in post operation or activity development plans. A second use may include a use not consistent with uses existing prior to disturbances, that do not substantially enhance the area of disturbance.

Restoration: Return the disturbed area as best able to a condition that existed prior to surface disturbing activities. Elements include revegetation or the ability to revegetate with species native to the area, and may include placement of vegetation in the same locations that existed prior to conduct of operations.

Road: A linear route declared a road by the owner, managed for use by low clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Route Designation: The route designation determines the allowable mode of transportation (motorized, non-motorized, non-mechanized) of the route.

Route Segment: A portion of a route used for planning and analytical purposes. A route segment could be anywhere from a small segment of a route (<0.1 miles of a route) to an entire route.

Section 7 (FESA): The subdivision of FESA that describes the responsibilities of Federal agencies in conserving threatened and endangered species. It requires that any action authorized,

funded, or carried out by the agency should not be likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of the species habitat. It includes a requirement that agencies consult with FWS if an action will likely affect a listed species that may be present in the area affected by the project. It requires FWS to issue a biological opinion stating how the action will affect the species or its critical habitat and, if jeopardy or adverse habitat modification is found, it suggests reasonable and prudent alternatives.

Special Areas: A land use designation applied by BLM to a variety of areas with unique features, plant communities, or other resources. Special Areas are a tool to highlight areas known to be important for special consideration in the environmental assessment process for any kind of project. Where appropriate, activity plans will establish site-specific management directives.

Special Status Species: These include species:

- Listed as threatened or endangered (state and federal)
- Proposed for listing;
- Candidates for listing by the state and/or federal government;
- California species of concern;
- Designated as sensitive by the BLM; and,
- Plants identified by the California Native Plant Society as rare, threatened, endangered, or of limited distribution in California.

Standards and Guidelines: A Standard is an expression of the level of physical and biological condition or degree of function required for healthy, sustainable rangelands. Guidelines for grazing management are the types of grazing management activities and practices determined to be appropriate to ensure that the standards can be met or significant progress can be made toward meeting standards.

Subdesignation: The subdesignation(s), if assigned, further defines the types of vehicles and/or users that may use each route. Subdesignations include ATV/UTV, administrative, authorized/permitted, biking, competitive, designated only, equestrian, hiking, motorcycle, seasonal, and street legal only.

Subregion (Vehicle Access): Thirty-six geographic subdivisions covering various portions of public lands within the West Mojave planning area and that provide complete coverage of the planning area. These subdivisions were established for purposes of organizing the development of a network of motorized vehicle access routes on public lands, and to facilitate implementation of the route network. They generally coincide with law enforcement patrol sectors.

Threatened Species: A species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened.

Trail: A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Transportation Linear Disturbances – Man-made linear features that are not part of the BLM's Transportation System. Linear disturbances may include engineered (planned) as well as unplanned single- and two-track linear features. Even if previously authorized, these features are considered unauthorized, and suitable for removal and rehabilitation.

Transportation Linear Features – The broadest category of physical disturbance (planned and unplanned) on BLM land. Transportation-related linear features include engineered roads and trails, as well as user-defined, non- engineered roads and trails created as a result of the public use of BLM land. May include roads and trails identified for closure or removal as well as those that make up the BLM's defined transportation system.

Transportation System – The roads, primitive roads, and trails designated as facility assets and maintained by the BLM.

Travel Management Areas - Polygons or delineated areas where a rational approach has been taken to classify areas open, closed or limited, and have identified and/or designated a network of roads, trails, ways, and other routes that provide for public access and travel across the planning area. All designated travel routes within travel management areas should have a clearly identified need and purpose as well as clearly defined activity types, modes of travel, and seasons or timeframes for allowable access or other limitations. (BLM Manual H-1601-1 Land Use Planning Handbook).

Utility Corridor: The CDCA Plan designated a regional network of nineteen utility planning corridors. Corridors are from two to five miles wide, and are several to hundreds of miles in length. They apply to electrical transmission towers and cables of 161-kV and above; pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for inter-basin transfers of water. Their purpose is to guide detailed planning and siting of utility projects requiring a right of way from the BLM. Location of a project within a corridor does not, without more, confer a right of way or fulfill environmental review requirements; however, projects subject to the corridor requirement are allowed outside of corridors only through an amendment to the CDCA Plan. BLM issues a permit that allows the construction of a new utility in these corridors only after FESA Section 7 consultation with FWS and Section 106 consultation with SHPO. Local distribution facilities may be located outside of designated corridors without a further land-use plan amendment. The CDCA Plan also identified several contingent corridors (routes having some potential for use in the future), which could be brought forward into the plan after successfully completing the Plan Amendment process. (CDCA Plan, pages 93-94.). At least one contingent corridor has already been activated in the WEMO Planning Area.

Voluntary Relinquishment: "the donation" of any valid existing grazing permit or lease within the CDCA. The term donation is interpreted by the BLM to mean "voluntary relinquishment" of the permit or lease to graze on a public land grazing allotment and the preferential position that the permittee or lessee enjoyed, in relation to other applicants, to receive that permit or lease.

WEMO ID: The unique planning number given by BLM to each specific route or route segment. WEMO IDs have been used internally to distinguish route segment features for planning and analytical purposes.

West Mojave Amendment Web Page:
http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html

West Mojave 2006 Plan Web Page: http://www.blm.gov/ca/st/en/fo/cdd/wemo.html

Wilderness Area: A unit of the National Wilderness Preservation System. Wilderness areas are designated by Congressional action. It is a natural preserve with outstanding opportunities for solitude and unconfined primitive experience. Wilderness is a place to enjoy where ecological, geological and other features of scientific, scenic, educational and historical value are protected and their character retained. BLM manages wilderness in accordance with the provisions of the Wilderness Act of 1964 and approved wilderness management plans. These plans generally contain actions that:

(1) Maintain an enduring system of high-quality wilderness;

(2) Perpetuate the wilderness resource;

(3) Provide, to the extent consistent with items 1 and 2, opportunities for public use, enjoyment, and understanding of wilderness, and the unique experiences dependent upon a wilderness setting;

(4) Maintain plants and animals indigenous to the area;

(5) Maintain stable watersheds within constraints of the Wilderness Act;

(6) Consider protection needs for populations of threatened or endangered species and their habitats in management of wilderness;

(7) Consider accessibility to all segments of the population (including the handicapped, elderly, and underprivileged) in the management of wilderness;

(8) Consider valid nonconforming resource uses and activities in the management of wilderness so as to have the least possible adverse effect and/or wherever possible a positive effect; and

(9) Provide access to inholdings of private lands and vehicle access required by many areas because of the lack of water and the harsh environment of the Desert. [CDCA Plan as amended, page 50.]

Wilderness Study Area (WSA): Wilderness Study Areas are public lands that Congress has directed remain unimpaired for Wilderness designation until such time as Congress decides whether or not they will become units of the National Wilderness Preservation System. BLM manages its WSAs pursuant to an interim management policy described in the CDCA Plan. Although Congress made a final designation decision with respect to most of the western Mojave Desert's WSAs in 1994, five WSAs remain, all on BLM lands: Avawatz Mountains, Cady Mountains, Great Falls Basin, Soda Mountains and South Avawatz Mountains.

CHAPTER EIGHT

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