Nevada and Northeastern California Greater Sage-Grouse

Draft Resource Management Plan Amendment and Environmental Impact Statement

US Department of the Interior,
Bureau of Land Management
May 2018

BLM

The Bureau of Land Management'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.

Cover Photo: Steve Ting

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Nevada State Office
1340 Financial Boulevard
Reno, Nevada 89502-7147
http://www.blm.gov/nv

Dear Reader:

The *Nevada and Northeastern California Draft Resource Management Plan Amendment (RMPA) and Draft Environmental Impact Statement (EIS)* is available for your review and comment. The Bureau of Land Management (BLM) prepared this document in consultation with cooperating agencies and in accordance with the National Environmental Policy Act of 1969, as amended, the Federal Land Policy and Management Act of 1976, as amended, implementing regulations, the BLM's Land Use Planning Handbook (H-1601-1), and other applicable law and policy.

The planning area is the BLM Nevada District Offices of Battle Mountain, Carson City, Elko, Ely, and Winnemucca and the BLM California Field Offices of Applegate (Alturas and Surprise) and Eagle Lake. The planning area encompasses approximately 45, 424, 700 surface acres administered by the BLM.

As directed by BLM Planning Regulations, the Management Alignment Alternative has been identified in the Draft EIS as the preferred alternative. Identification of the preferred alternative does not indicate any commitments on the part of the BLM with regard to a final decision. In developing the Proposed RMPA/Final EIS, which is the next phase of the planning process, the decision maker may select various management actions from each of the alternatives analyzed in the Draft RMPA/Draft EIS for the purpose of creating a management strategy that best meets the needs of the resources and values in this area under the BLM multiple use and sustained yield mandate.

The BLM encourages the public to review and provide comments on the Draft RMPA/Draft EIS. The Draft RMPA/Draft EIS is available on the project website at: https://goo.gl/kcsF4w. Hard copies are also available for public review at the BLM Nevada and California State Offices. Public comments will be accepted for 90 calendar 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.

Written comments may be submitted as follows (submittal of electronic comments is encouraged):

1. Written comments may be submitted electronically at:
    a. Website: https://goo.gl/kcsF4w

2. Written comments may also be mailed directly, or delivered to, the BLM at:

Bureau of Land Management Nevada State Office
Attn: Matthew Magaletti
1340 Financial BLVD
Reno, NV 89502

To facilitate analysis of comments and information submitted, we encourage you to submit comments in an electronic format. Before including your address, phone number, e-mail 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 ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.
Public meetings will be held at various locations around the planning area to provide the public with opportunities to submit comments and seek additional information. The locations, dates, and times of these meetings will be announce at least 15 days prior to the first meeting via a press release and on the project website:
https://goo.gl/kcsF4w

Thank you for your continued interest in the Greater Sage-Grouse RMPA. We appreciate the information and suggestions you contribute to the process.

Sincerely,

John F. Ruhs
Nevada State Director
Bureau of Land Mangement

Jerome E. Perez
California State Director
Bureau of Land Management

Nevada and Northeastern California Greater Sage-Grouse Draft Resource Management Plan Amendment and Draft Environmental Impact Statement

Responsible Agency: United States Department of the Interior
Bureau of Land Management

Abstract: This draft resource management plan (RMP) amendment and draft environmental impact statement (EIS) has been prepared by the United States Department of the Interior (DOI), Bureau of Land Management (BLM) with input from cooperating agencies. The purpose of this RMP amendment (RMPA) is to enhance cooperation with the States by modifying the approach to Greater Sage-Grouse management in existing RMPs to better align with individual state plans and/or conservation measures and DOI and BLM policy. This document is considering amendments to eight BLM RMPs in Nevada and three RMPs in California. The EIS describes and analyzes two alternatives for managing Greater Sage-Grouse habitat on approximately 45.4 million acres of BLM-administered surface estate. The No-Action Alternative is a continuation of current management; use of public lands and resources would continue to be managed under the current BLM RMPs, as amended in 2015. The Management Alignment Alternative was derived through coordination with the States and cooperating agencies to align with the State conservation plans and to support conservation outcomes for Greater Sage-Grouse. This is the agency's preferred alternative, though this does not constitute a final decision and there is no requirement that the preferred alternative identified in the draft EIS be selected as the agency's decision in the Record of Decision. Major planning issues addressed include Sagebrush Focal Area designations, habitat boundary designations, density and disturbance caps, habitat objectives, energy and minerals, and lands and realty.

Review Period: Comments on the Nevada and Northeastern California Greater Sage-Grouse Draft Resource Management Plan Amendment and Draft Environmental Impact Statement will be accepted for 90 calendar days following publication of the United States Environmental Protection Agency's Notice of Availability in the *Federal Register*.

For further information, contact:

Matt Magaletti, Project Manager
Telephone: (775) 861-6472
Bureau of Land Management, Nevada State Office
1340 Financial Blvd.
Reno, NV 89502

Jeremiah Karuzas
Telephone: (916) 978-4644
Bureau of Land Management, California State Office
2800 Cottage Way
Sacramento, CA 95825

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TABLE OF CONTENTS

Chapter Page

TABLES

Page

FIGURES

Page

APPENDICES

ACRONYMS AND ABBREVIATIONS

	Full Phrase
ADH	all designated habitat
ARMPA	approved resource management plan amendment
BLM	Bureau of Land Management
BMP	best management practice
BSU	biologically significant unit
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulation
CSU	controlled surface use
DOI	US Department of the Interior
EIS	environmental impact statement
FIAT	Fire and Invasives Assessment Tool
FLMPA	Federal Land Management and Policy Act
Forest Service	US Department of Agriculture, Forest Service
GHMA	General Habitat Management Area
HMA	habitat management area
HQT	Habitat Quantification Tool
IM	Instruction Memorandum
LUPA	Land Use Plan Amendment
MZ	management zone
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act
NSO	no surface occupancy
OHMA	Other Habitat Management Area
PAC	Priority Area for Conservation
PHMA	Priority Habitat Management Area
RDF	required design feature
RMP	resource management plan
RMPA	resource management plan amendment
ROD	record of decision
ROW	right-of-way
SETT	Sagebrush Ecosystem Technical Team
SFA	sagebrush focal area

SO	Secretarial Order
TL	timing limitation
USGS	US Geological Survey
USFWS	US Fish and Wildlife Service
WO	Washington Office

Executive Summary

ES.1 INTRODUCTION

Greater Sage-Grouse is a state-managed species that is dependent on sagebrush steppe ecosystems. These ecosystems are managed in partnership across the range of the Greater Sage-Grouse by federal, state, and local authorities. Efforts to conserve the species and its habitat date back to the 1950s. Over the past two decades, state wildlife agencies, federal agencies, and many others in the range of the species have been collaborating to conserve Greater Sage-Grouse and its habitats. The United States Department of the Interior (DOI) and the Bureau of Land Management (BLM) have broad responsibilities to manage federal lands and resources for the public benefit. Nearly half of Greater Sage-Grouse habitat is managed by the BLM.

In September 2015, the US Fish and Wildlife Service (USFWS) determined that the Greater Sage-Grouse did not warrant listing under the Endangered Species Act of 1973. In its "not warranted" determination, the USFWS based its decision in part on regulatory certainty from the conservation commitments and management actions in the BLM and US Forest Service (Forest Service) Greater Sage-Grouse land use plan amendments (LUPAs) and revisions, as well as on other private, state, and federal conservation efforts. Since 2015 the BLM, in discussion with partners, recognized that several refinements and policy updates would help strengthen conservation efforts, while providing increased economic opportunity to local communities.

The BLM continues to build upon its commitment to on-the-ground management to promote conservation through close collaboration with State governments, local communities, private landowners, and other stakeholders. **Table ES-1** shows the acres of on-the-ground treatment activity between 2015 and 2017 and planned for 2018, based upon annual budgets allocated by Congress. BLM's accomplishments reflect contributions from programs other than Greater Sage-Grouse, including fuels, riparian, and range management.

Table ES-1
Acres of On-The-Ground Treatment Activity for Fiscal Years 2015 to 2017 and Planned for 2018

Fiscal Year	Conifer Removal	Fuelbreaks	Invasive Species Removal	Habitat Protection	Habitat Restoration	Total
2015	98,876	15,000	63,612	41,003	75,952	294,443
2016	165,963	14,614	66,621	42,305	95,748	385,251
2017	185,032	65,455	124,582	10,428	93,474	479,000
2018[1]	118,384	65,442	68,512	9,240	54,509	316,087

[1]Planned

The BLM is now engaged in a planning effort to further enhance its continued cooperation with western states by ensuring greater consistency between individual state plans and the BLM's multiple-use mission. This executive summary highlights the major components of this planning document and outlines the potential impacts from the proposed management changes. The BLM's efforts seek to improve

management alignment in ways that will increase management flexibility, maintain access to public resources, and promote conservation outcomes.

ES.2 Purpose of and Need for Action

The BLM's purpose and need for this planning action helps define the scope of proposed alternative actions and issues the agency must analyze. In the Federal Land Policy and Management Act (FLPMA), Congress provided the BLM with discretion and authority to manage public lands for multiple use and sustained yield, and declared it the policy of the United States to coordinate the land use planning process with other federal and state plans. Further, FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in managing fish and wildlife. As the sovereign with the lead role in managing game species, including Greater Sage-Grouse, states play a critical role in conserving and restoring the Greater Sage-Grouse and its habitat. The purpose of this resource management plan amendment/environmental impact statement (RMPA/EIS) is to enhance cooperation with the states by modifying the approach to Greater Sage-Grouse management in existing RMPs to better align with individual state plans and conservation measures and with DOI and BLM policy.

ES.3 Issues and Related Resource Topics Identified Through Scoping

When deciding which issues to address related to the purpose and need, BLM considers points of disagreement, debate, or dispute regarding an anticipated outcome from a proposed action. Issues are based on anticipated environmental impacts; as such, they can help shape the proposal and alternatives.

The BLM used internal, agency, and public scoping to identify issues to consider in the environmental analysis. A summary of the scoping process is presented in Potential Amendments to Land Use Plans Regarding Greater Sage-Grouse Conservation Scoping Report (https://goo.gl/FopNgW).

The sections below lay out how issues raised during scoping, as well as related resource topics, are considered in this RMPA/EIS. Generally, they fall into the following categories:

- Issues and related resource topics retained for further consideration in this RMPA/EIS—These were issues raised during scoping for which alternatives were developed to address the issues.
- Clarification of decisions in the 2015 ARMPA—These are decisions or frameworks in the 2015 ARMPA that require clarification as to their application or implementation. No new analysis is required, as the intentions behind the decisions were analyzed in the 2015 Final EIS.
- Issues and resource topics not carried forward for additional consideration or analysis—These are issues brought up during scoping that are not carried forward in this RMPA/EIS. While some of these issues are considered in this RMPA/EIS, they do not require additional analysis because they were analyzed in the 2015 Final EIS. Others are not carried forward in this RMPA/EIS because they do not further the purpose of aligning with the state's conservation plan or management strategies. Similar to issues, there are resource topics that are not retained for further analysis in this RMPA/EIS. This is because either they are not affected by the changes proposed in **Chapter 2** or because the effect was analyzed in the 2015 Final EIS.

ES.3.1 Issues and Related Resource Topics Retained for Further Consideration in this RMPA/EIS

The issues identified in **Table ES-2**, below, were previously analyzed in the 2015 Final EIS; however, based on the proposed changes, the resource topics and potential impacts that may require additional analysis are as follows: Greater Sage-Grouse, vegetation (including weeds and special status vegetation), land use and realty, renewable energy, minerals and energy, socioeconomics, livestock grazing, and comprehensive travel management; therefore, these resource topics are carried forward for analysis.

Table ES-2 identifies the corresponding resource topics to which the issues relate. The level of detail in the description of each resource topic and the impacts from implementing any of the alternatives also are described in **Chapters 3** and **4**.

Table ES-2
Issues and Related Resource Topics

Issues	Resource Topics Related to the Issues
Modifying Habitat Management Area Designations • Need for adjusting habitat management areas (HMAs) so that they reflect the best available science and are consistent with habitat management areas identified by the State of Nevada and recommended by California Department of Fish and Wildlife (CDFW). This would provide consistency in management across jurisdictions and to third parties operating on public and state or private lands in Nevada and Northeastern California. • Integration of flexibility into the plans to be able to adjust habitat management area designations (and their associated allocations) without the need for a plan amendment, based on the best available science. • Maintaining all habitat areas as identified in the ARMPA, including sagebrush focal areas (SFAs), which should be provided with the most protections.	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Removing Sagebrush Focal Area Designations • Ensure it is clear the SFA mineral withdrawal has been cancelled and the justified reasoning for this cancellation. Is SFA designation relevant in absence of a mineral withdrawal? • Is this habitat designation needed to adequately maintain conservation of Greater Sage-Grouse habitat?	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Adaptive Management • Ensure federal, state, and local partners are part of the causal factor analysis process • Lack of flexibility with implementing and removing hard trigger adaptive management responses • Better alignment with DOI guidance on implementation of the adaptive management process • Incorporate best available science, including local data and information, into the adaptive management strategy	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Allocation Exception Process • Clarify and make consistent the various exception allocation processes • Verify use of landscape-scale mapping of priority habitat area (PHMA), general habitat management area (GHMA), and other habitat management	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy

Table ES-2
Issues and Related Resource Topics

Issues	Resource Topics Related to the Issues
areas (OHMA) in regards to the application of allocations and stipulations • Address restrictions on actions related to public health and safety, existing infrastructure, and administrative functions that serve a public purpose • Address inconsistencies with existing federal legislation and the 2015 Record of Decision (ROD)/ARMPA that include land tenure adjustments, including, but not limited to, disposals, exchanges, transfers, and Recreation and Public Purpose actions	• Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Mitigation • Alignment with the State of Nevada's mitigation strategy to the greatest extent possible • Ensure consistency in tracking and reporting changes to habitat quality and quantity	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Seasonal Timing Restrictions • Alignment with State of Nevada's conservation plan and management strategies with the State of California, to the greatest extent possible • Consider exceptions and/or modifications to seasonal timing restrictions to allow for beneficial or neutral projects to occur in a timely manner • Seasonal timing restrictions need to be adjusted to allow for public health and safety concerns to be addressed without delay	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Modifying Habitat Objectives • Consideration of site potential based on ecological site descriptions and their associated state and transition models • Consistency with State of Nevada's desired habitat conditions • Incorporation of recent science supporting modifications	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management

ES.3.2 Clarification of Planning Decisions in the 2015 ARMPA

The following issues identified in existing planning decisions in **Table ES-3** were raised during scoping. These issues require clarification to language in the 2015 ROD/ARMPA but do not require new analysis. The clarifying language for these planning decisions is displayed in this planning document to communicate how these issues are being addressed through plan maintenance, policy, or implementation.

Table ES-3
Clarification Issues

Clarification Issue	Clarifications Addressed through Plan Maintenance, Policy, or Implementation
Modifying Lek Buffers • Clarification regarding the application of lek buffer-distances	*Plan Maintenance* - Management Decisions SSS 2(D) and SSS 3(C) from the ARMPA have been clarified to resolve conflicting statements regarding how the BLM will "apply" lek buffers contained in the USGS Report *Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239). Management Decisions SSS 2(D) and SSS 3(C) have been revised to read as follows: *In undertaking BLM management actions [in PHMA and GHMA], and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will utilize the lek buffer-distances identified in the USGS' Open File Report 2014-1239 to establish the evaluation area around leks that will be used to analyze impacts during project-specific NEPA, in accordance with Appendix B.* Appendix B has also been revised to reflect this clarified decision language.
Changing Requirements for Required Design Features • Clarify the application of required design features and opportunities to deviate from them	*Plan Maintenance* - Appendix C includes a required design features (RDFs) worksheet that BLM Nevada and Northeastern California will complete for all proposed activities authorized in PHMA, GHMA, and OHMA. This worksheet clearly defines the rationale for dismissing certain RDFs when they are not appropriate for specific proposed activities.
Fire and Invasives • Provide the necessary prioritization of all three aspects of fire management: pre-suppression, suppression, and rehabilitation and find ways to expedite on-the-ground treatments to address this present and widespread threat in the Nevada and Northeastern California Sub-region	*Policy* - If the Great-Basin-Wide Programmatic Environmental Impact Statements (PEISs) to Reduce the Threat of Wildfire and Support Rangeland Productivity are completed, BLM Nevada and California will issue statewide policies that will instruct BLM field and district offices to incorporate by reference the analysis contained in the PEISs for on-the-ground environmental analysis, in an effort to expedite on-the-ground activities that will address the present and widespread threat of fire and invasives in the Nevada and Northeastern California sub-region.
Increase Opportunities for Outcome-Based Grazing • Identify and complete a number of authorizations to support the development of rigorous and defensible outcome-based grazing	*Implementation* - BLM Nevada and California will continue to pursue outcome-based grazing initiatives that will exhibit a new management paradigm that BLM managers and livestock operators can use to establish management practices that can achieve specific management objectives that respond to changing, on-the-ground conditions such as wildfires, high moisture years, or drought. This will better ensure healthy rangelands, high-quality wildlife habitat, and economically sustainable ranching operations.

Table ES-3
Clarification Issues

Clarification Issue	Clarifications Addressed through Plan Maintenance, Policy, or Implementation
Land Health Assessments and Habitat Objectives • Management Decisions LG 5 (and references of these decisions in Management Decisions LG 6 and LG 10) within the existing ARMPA are inconsistent with 43 CFR 4160.1	*Plan Maintenance* - Management Decision LG 5 (page 2-25 through 2-26, ARMPA), as written, is not consistent with existing BLM grazing regulations (43 CFR 4160.1) or recent policies (WO Instruction Memorandum 2018-023), as it provides direction to implement interim management strategies until appropriate modifications are incorporated through the permit renewal process (if results from a land health assessment indicate that Greater Sage-Grouse habitat objectives are not met and grazing is a causal factor). This management decision, however, does not identify that these interim management strategies need to be within the existing terms and conditions of a grazing permit in order to implement them immediately. Under 43 CFR 4160.1 (existing BLM grazing regulations), the BLM must issue a proposed/final decision on any affected applicant, permittee or lessee, and interested public when modifying a grazing permit. If the interim management strategies are within the existing terms and conditions of a grazing permit, they can be implemented immediately; however, if the selected interim management strategies are outside of the existing terms and conditions, the BLM will need to comply with NEPA and the decision processes provided in 43 CFR 4160. For this reason, Management Decision LG 5 will be removed, as well as references to Management Decision LG 5 in Management Decisions LG 6 and LG 10.

ES.3.3 Issues and Resource Topics Not Carried Forward for Additional Analysis (Scoping Issues Outside the Scope and Scoping Issues Previously Analyzed)

The following issues were raised during scoping and are not carried forward for a variety of reasons. For example, population-based management is not carried forward for detailed analysis because the BLM does not manage species populations; that authority falls under the jurisdiction of the States of Nevada and California.

Other issues were analyzed in the 2015 Final EIS, and no significant new information related to these issues has emerged since that time. Therefore, the following issues do not require additional analysis in this RMPA/EIS:

- Effects of NSO stipulations on Greater Sage-Grouse habitat on non-BLM-administered
- Mitigation for oil and gas development
- Prioritization of fluid mineral leases outside of PHMA and GHMA
- Numerical noise limitations within PHMA
- Contribution of disturbance caps toward Greater Sage-Grouse conservation objectives
- Wildfire response to vegetation treatments

- Habitat assessment framework
- Mitigation standard

Other issues were evaluated as part of the 2015 Final EIS. For the same reasons they were dismissed in the 2015 Final EIS, they are not carried forward for detailed analysis in this RMPA/EIS:

- Hunting Greater Sage-Grouse
- Predator control
- Aircraft overflights in PHMA/GHMA

The resource topics below are dismissed from detailed analysis because they have no potentially significant impacts from actions proposed in this RMPA/EIS:

- Geology
- Indian trust resources
- Noise
- Air quality and visibility
- Special designations (e.g., areas of critical environmental concern, research natural areas, wilderness, wilderness study areas, wild and scenic rivers, and national scenic and historic trails)
- Environmental justice
- Wildland fire and fire management
- Wild horses and burros
- Recreation
- Visual resources
- Water resources
- Cultural and heritage resources
- Lands with wilderness characteristics

ES.4 ALTERNATIVES CONSIDERED

Alternatives development and analysis is the heart of an EIS. The alternatives considered in this document address all the issues brought forward by the public and considered by BLM. The comparative analysis between alternatives establishes a framework for decision makers to understand important trade-offs and identify the most effective way to meet the purpose and need and BLM's multiple use mission. The alternatives analysis can support the BLM in adapting its management when information and circumstances change.

ES.4.1 No-Action Alternative

Under the No-Action Alternative, the BLM would not amend the current RMPs amended by the Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment. Greater Sage-Grouse habitat would continue to be managed under current management direction. Goals and objectives for BLM-administered lands and federal mineral estate would not change. Allowable uses and restrictions would also remain the same, as they pertain to such activities as mineral

leasing and development, recreation, lands and realty, and livestock grazing. This alternative also includes the designation of SFAs, which is analyzed in **Chapter 4**.

ES.4.2 Management Alignment Alternative (Preferred Alternative)

This alternative makes modifications to the No-Action Alternative to better align BLM management direction with the State of Nevada's Conservation Plan and conservation strategies with the CDFW to reach a "combination of balanced and diverse resource uses," as required by FLPMA. This alternative was also developed in a collaborative process with cooperating agencies to support conservation outcomes for Greater Sage-Grouse.

The BLM continues to build upon the 2015 planning effort as envisioned in SO 3353 by collaborating with states and stakeholders to improve compatibility between federal management plans and other plans and programs at the state level, while ensuring consistency with the BLM's multiple use mission and protection of Greater Sage-Grouse habitat. This enhanced cooperation between the BLM and the states would lead to improved management and coordination with states across the range of Greater Sage-Grouse. These modifications include updating and making adjustments to habitat management areas and including language that would allow the BLM to update them through plan maintenance, when appropriate, based on the most updated best available science; removing SFA designations; incorporating new science into the adaptive management strategy and replacing predetermined hard trigger responses with a clear causal factor analysis process to determine the appropriate management responses and to address the decline in Greater Sage-Grouse populations and/or habitat; revising and simplifying an allocation exception process to allow for the consideration of projects within designated habitat management areas (provided they meet prescribed criteria); clarifying the BLM's commitment to use the State of Nevada's Habitat Quantification Tool to quantify human disturbance calculations for mitigation; and identifying that seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the Nevada Division of Wildlife (NDOW) and CDFW. At the request of the States, the Management Alignment Alternative in this Draft RMPA/EIS includes the net conservation gain standard for compensatory mitigation that the BLM incorporated into its plans in 2015. DOI and the BLM, however, have modified their mitigation policies since the 2015 plans were finalized. The public did not have the opportunity to comment specifically on a net conservation gain approach to compensatory mitigation during the 2015 land use planning process. In addition, DOI and the BLM are evaluating whether the implementation of a compensatory mitigation standard on public lands is appropriate and consistent with applicable legal authorities. We request public comment about how the BLM should consider and implement mitigation with respect to the Greater Sage-Grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans.

Consistent with the Notice of Cancellation of the BLM's application to withdraw SFAs from locatable mineral entry (82 *Federal Register* 195, October 11, 2017, p. 47248), this alternative would also remove the recommendation for withdrawal. The effects of such action are included in **Chapter 4**.

ES.5 Summary of Environmental Consequences

This section includes a summary comparison of environmental consequences from implementing the No-Action Alternative and the Management Alignment Alternative. A detailed description of environmental consequences is included in **Chapter 4**.

Table ES-4
Comparison of Environmental Consequences

No-Action Alternative	Management Alignment Alternative
Greater Sage-Grouse	
Under the No-Action Alternative, the designation of 2,767,552 acres as SFAs and recommendation for withdrawal would have beneficial impacts on Greater Sage-Grouse by reducing mining activities that may cause disturbance to Greater Sage-Grouse and its habitat. The nature and type of effects on Greater Sage-Grouse and its habitat is described in Section 4.4.10 of the Final EIS (BLM 2015) and the 2016 SFA Withdrawal EIS, Section 4.5.	The Management Alignment Alternative would ensure that current and future renditions of habitat management area boundaries reflect Greater Sage-Grouse habitat on the ground and guide management actions appropriately. As the boundaries are updated, the allocations associated with each Habitat Management Area (**Table 2-1** in Chapter 2) would be adjusted to match the newest Habitat Management Area boundaries (Coates et al. 2016). This would help to conserve the species by ensuring allocations and any of their associated restrictions are applied in the appropriate areas, while allowing infrastructure and economic development to occur in areas that would not impact the species. Updating the allocation exception process would not have impacts on Greater Sage-Grouse and its habitat. Adaptive management hard and soft triggers updates would ensure that the BLM is utilizing the best available science (such Coates et al. 2017 for population triggers) to adjust management. Impacts on Greater Sage-Grouse and its habitat would be beneficial. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative. Improving coordination among state and federal partners, along with using consistent metrics for tracking changes in habitat quality and quantity over time, is anticipated to benefit the species through enhanced knowledge of baseline conditions and restoration/reclamation/mitigation effectiveness. Beneficial impacts were identified for addressing seasonal timing restrictions and modifying indicators and their values in the Habitat Objectives table in the 2015 Final EIS). Modifying or removing seasonal timing restrictions allows beneficial Greater Sage-Grouse projects (i.e., juniper and/or pinyon removal) to be implemented in an expedited manner and modifying the habitat objectives would improve the efficiency of Greater Sage-Grouse habitat management by using the best available science to inform Greater Sage-Grouse habitat requirements. SFAs would not be designated under this alternative and therefore would not be recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying Greater Sage-Grouse Habitat Management Area designation (e.g., PHMA). Impacts on Greater Sage-Grouse would be consistent with those described in the 2015 Final EIS (BLM 2015).

Table ES-4
Comparison of Environmental Consequences

No-Action Alternative	Management Alignment Alternative
Vegetation and Soils	
Under the No-Action Alternative, 2,767,552 acres of Greater Sage-Grouse HMA would be designated as SFAs and recommended for withdrawal. This alternative would reduce disturbance to Greater Sage-Grouse and its habitat from associated mining activities and would have beneficial impacts on vegetation and soils; of the effects of SFAs on vegetation and soils are described in Section 4.5.10 of the 2015 Final EIS.	The Management Alignment Alternative would not substantially alter vegetation and soil resources because they would continue to be managed as underlying Greater Sage-Grouse HMAs (i.e., PHMA, GHMA, and OHMA). The difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.5 of the 2015 Final EIS (BLM 2015).
Land Use and Realty	
Under the No-Action Alternative, the designation of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872. Because this would not alter the underlying allocations for land use and realty associated with Greater Sage-Grouse HMA, the nature and type of effects on land use and realty described in Section 4.13.10 of the Final EIS (BLM 2015) would be the same as under this alternative.	Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where land use and realty allocations are applied. Given the relatively minor shift in PHMA (-0.5%) and GHMA (+0.5%), these changes would not result in discernible differences from the No-Action Alternative. The decrease in OHMA (-17%) would have negligible impacts on land use and realty because no allocation decisions are tied to OHMA; therefore, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.13 of the 2015 Final EIS (BLM 2015).
Renewable Energy Resources	
Under the No-Action Alternative, 2,767,552 acres of Greater Sage-Grouse HMA would be designated as SFAs and recommended for withdrawal. Because this would not alter the underlying allocations for renewable energy resources associated with Greater Sage-Grouse HMA, the nature and type of effects on renewable energy resources described in Section 4.14.10 of the Final EIS (BLM 2015) would be the same as under this alternative.	Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where renewable energy allocations are applied. Given the relatively minor shift in PHMA (-0.5%) and GHMA (+0.5%), these changes would not result in discernible differences from the No-Action Alternative. The decrease in OHMA (-17%) would make additional areas available for solar development, but this is not expected to result in increased development proposals, based on the reasonably foreseeable development scenarios discussed in the 2015 Final EIS.
Minerals and Energy	
Under the No Action Alternative, 2,767,552 acres of Greater Sage-Grouse HMA would be designated as SFAs and recommended for withdrawal. The withdrawal would reduce the availability of geology and mineral resources in Nevada only. New mines would be reduced by 33 percent and the number of exploration projects would be reduced by 41 percent (BLM 2016). The reduction in mining activity would also result in socioeconomic impacts, which are discussed in Section 4.10.1. The nature and type of effects on minerals and energy as described in Section 4.15.10 of the Final EIS (BLM 2015) would be the same.	Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where minerals and energy allocations are applied. Given the relatively minor shift in PHMA (-0.5%) and GHMA (+0.5%), these changes would not result in discernible differences from the No-Action Alternative. The decrease in OHMA (-17%) would be negligible because no allocation decisions are tied to OHMA; therefore, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.15 of the 2015 Final EIS (BLM 2015).

Table ES-4
Comparison of Environmental Consequences

No-Action Alternative	Management Alignment Alternative
Socioeconomics	
Under the No-Action Alternative the mining industry could be adversely affected from having fewer potential locations to develop and explore. The economic impacts in Nevada would differ considerably, depending on whether the one new mine that was developed was a large gold/silver mine or a smaller barite mine. Withdrawal would support approximately 414 to 739 fewer jobs in Nevada, and between $25.8 and $56.5 million less in annual labor income (BLM 2016). SFA designation would also reduce the number of exploration projects from 78 to 32 in Nevada. Exploration would be expected to fall by approximately 41 percent (approximately $3.8 million) (BLM 2016).	Adopting the changes proposed in the Management Alignment Alternative and not recommending SFAs for withdrawal could lead to a corresponding increase in populations and employment for the counties that would see new mine development. Within the analysis area, the projected economic impacts from operation of future mines would result in 801 jobs, a labor income of $62 million, and approximately $12 million in state/local tax revenue. With the exception of not including SFAs, the difference between the nature and type of impacts described would be negligible, given the similarity of the proposed management actions. These impacts are discussed in Section 4.21 of the 2015 Final EIS (BLM 2015) and Section 4.3.6 of the 2016 SFA DEIS (BLM 2016).
Livestock Grazing	
Under the No-Action Alternative, the designation of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872. Because this would not alter the underlying allocations for livestock grazing associated with Greater Sage-Grouse HMA, the nature and type of effects on livestock grazing described in Section 4.10.10 of the Final EIS (BLM 2015) would be the same as under this alternative.	Despite minor differences between the actions described in the Management Alignment Alternative and those analyzed in the 2015 Final EIS, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.10 of the 2015 Final EIS (BLM 2015).
Comprehensive Travel Management	
Under the No-Action Alternative, the designation of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872. Because this would not alter the underlying allocations for travel and transportation management associated with Greater Sage-Grouse Habitat Management Areas, the nature and type of effects on travel and transportation management described in Section 4.12.10 of the Final EIS (BLM 2015) would be the same as under this alternative.	Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where travel and transportation allocations are applied. Given the relatively minor shift in PHMA (-0.5%) and GHMA (+0.5%), these changes would not result in discernible differences from the No Action Alternative. The decrease in OHMA (-17%), would have negligible impacts on comprehensive travel management because no allocation decisions are tied to OHMA; therefore, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.12 of the 2015 Final EIS (BLM 2015).

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Chapter 1. Purpose and Need for Action

1.1 Introduction

Greater Sage-Grouse (*Centrocercus urophasianus*) is a state-managed species dependent on sagebrush steppe ecosystems that are managed in partnership across its range by federal, state, local, and private authorities. State agencies responsible for fish and wildlife management possess broad powers for the protection and management of fish, wildlife, and plants within their borders, except where preempted by federal law. Similarly, DOI has broad responsibilities to manage federal lands and resources for the public's benefit. The BLM and US Forest Service (Forest Service) manage approximately half of the Greater Sage-Grouse habitat range-wide across 11 states; approximately 20.5 million acres of this is within the Nevada and Northeastern California Sub-regional planning area.

State and local agencies are at the forefront of efforts to maintain healthy fish and wildlife populations and to conserve at-risk species. State-led efforts to conserve Greater Sage-Grouse and its habitat date back to the 1950s. For the past two decades, state wildlife agencies, local agencies, federal agencies, and many others in the range of the species have been collaborating to conserve Greater Sage-Grouse and its habitats.

In response to a 2010 determination by the USFWS that the listing of the Greater Sage-Grouse under the Endangered Species Act was "warranted, but precluded by higher priority listing actions," the BLM in coordination with the DOI and the US Department of Agriculture developed a management strategy that included targeted Greater Sage-Grouse management actions. In 2015, the agencies adopted amendments and revisions to 98 BLM and Forest Service land use plans across 10 western states. These LUPs addressed, in part, threats to the Greater Sage-Grouse and its habitat. The amended LUPs govern the management of 67 million acres of Greater Sage-Grouse habitat on federal lands.

In September 2015, the USFWS determined that the Greater Sage-Grouse did not warrant listing under the Endangered Species Act of 1973. The USFWS attributed its 2010 "warranted, but precluded" determination primarily to "inadequate regulatory mechanisms." In concluding "not warranted" in 2015, the USFWS based its decision in part on regulatory certainty from the conservation commitments and management actions in the federal land use plan amendments (LUPAs) and revisions, as well as on other private, state, and federal conservation efforts.

The BLM is currently implementing the 2015 Greater Sage-Grouse plans. The plans recommended that SFAs be proposed for withdrawal; however, this proposed withdrawal was cancelled on October 11, 2017. The BLM determined the proposal to withdraw 10 million acres was unreasonable in light of the data that showed that mining affected less than 0.1 percent of Greater Sage-Grouse-occupied range.

On March 29, 2017, the Secretary of the Interior (Secretary) issued SO 3349 ordering agencies to reexamine practices "to better balance conservation strategies and policies with the equally legitimate need of creating jobs for hard-working American families." On June 7, 2017, the Secretary issued SO 3353 with a purpose of enhancing cooperation among 11 western states and the BLM in managing and conserving Greater Sage-Grouse. Secretarial Order 3353 directed an Interior Review Team, consisting of the BLM, USFWS, and US Geological Survey (USGS), to coordinate with the Sage-Grouse Task Force

and review the 2015 Greater Sage-Grouse plans and associated policies to identify provisions that may require modification to make the plans more consistent with the individual state plans and better balance the BLM's multiple-use mission as directed by SO 3349 "American Energy Independence." On August 4, 2017, the Interior Review Team submitted its "Report in Response to Secretarial Order 3353." This report made recommendations for modifying the Sage-Grouse plans and associated policies to better align with the individual state plans. On August 4, 2017, the Secretary issued a memo to the Deputy Secretary directing the BLM to implement the recommendations found in the report.

Consistent with the report, the BLM published a Notice of Intent titled "Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environment Impact Statements or Environmental Assessments" in the *Federal Register* on October 11, 2017. During this public scoping period, the BLM sought public comments on a list of specific issues on whether all, some, or none of the 2015 Greater Sage-Grouse plans should be amended, what additional issues should be considered, and if plans should be completed at the state level rather than at the national level. In addition, the BLM recognizes that Greater Sage-Grouse is a state-managed species dependent on sagebrush steppe habitats managed in partnership between federal, state, and local authorities and that input from state governors would be given significant weight when considering what management changes should be made and in ensuring consistency with the BLM's multiple-use mission during a land-use plan amendment process.

On March 31, 2017, the United States District Court for the District of Nevada held that the BLM violated the National Environmental Policy Act (NEPA) by failing to prepare a supplemental EIS for the designation of SFA in the Nevada and Northeastern California Greater Sage-Grouse Resource Management Plan Amendment in Nevada. This RMPA/EIS responds to the Court's order by evaluating the SFA designation and providing the public with an opportunity to review and comment on that evaluation. The BLM will also provide the public with an opportunity to review and comment on the designation of habitat management areas (i.e., priority, general, and other), which provide a landscape-level reference of relative Greater Sage-Grouse habitat as determined by landscape characteristics and the likelihood of Greater Sage-Grouse occurrence (Coates et al. 2016). .

This RMPA/EIS is tiered to the 2015 Nevada and Northeastern California Greater Sage-Grouse Proposed RMP Amendment and Final EIS in accordance with the Council on Environmental Quality (CEQ) regulations, 40 CFR 1502.2, and incorporates by reference all the descriptions of the affected environment and impacts analyzed in the 2015 Proposed RMPA and Final EIS and subsequent Approved Nevada and Northeastern California Greater Sage-Grouse Land Use Plan Amendment and Record of Decision. This RMPA/EIS also incorporates by reference the 2016 Draft Sagebrush Focal Area Withdrawal EIS. This RMPA/EIS has been prepared to analyze the impacts associated with aligning the 2015 Nevada and Northeastern California Greater Sage-Grouse RMP/EIS with the State of Nevada and State of California's Greater Sage-Grouse management strategies.

Incorporation by reference and tiering provide opportunities to reduce paperwork and redundant analysis in the NEPA process. When incorporating by reference, the author refers to other available documents that cover similar issues, effects, and/or resources considered in the NEPA analysis that is being prepared. Incorporation by reference allows brief summarizations of relevant portions of other documents rather than repeating them.

1.2 PURPOSE OF AND NEED FOR ACTION

In FLPMA, Congress provided the BLM with discretion and authority to manage public lands for multiple use and sustained yield, and declared it the policy of the United States to coordinate the land use planning process with other federal and state plans. Further, FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in managing fish and wildlife. As the sovereign with the lead role in managing game species, including Greater Sage-Grouse, states play a critical role in conserving and restoring the Greater Sage-Grouse and its habitat.

The purpose of this RMPA/EIS is to enhance cooperation with the states by modifying the approach to Greater Sage-Grouse management in existing land use plans to better align with individual state plans and conservation measures and with DOI and BLM policy.

1.3 PLANNING AREA AND CURRENT MANAGEMENT

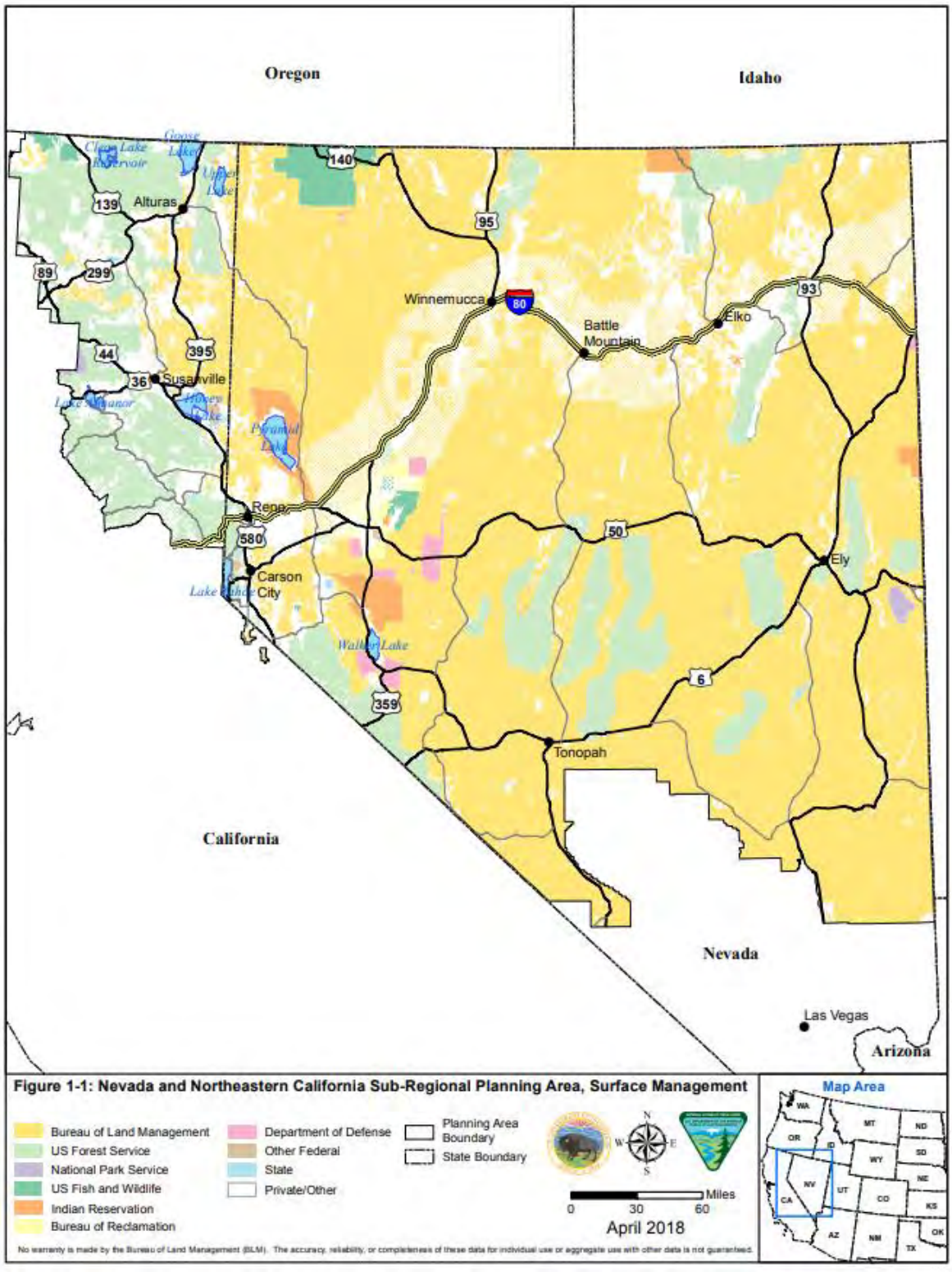
The planning area boundary includes all lands regardless of jurisdiction in Nevada and northeastern California (see **Figure 1-1**). **Table 1-1**, Land Management in the Planning Area, outlines the number of surface acres that are administered by specific federal agencies, states, and local governments and lands that are privately owned in the planning area. It includes other BLM-administered lands that are not allocated as habitat management areas and do not contain habitat for Greater Sage-Grouse. The planning area includes the BLM Nevada District Offices of Battle Mountain, Carson City, Elko, Ely, and Winnemucca and the BLM California Field Offices of Applegate (Alturas and Surprise) and Eagle Lake. The 2015 ARMPA did not establish any additional management for lands that are not identified as Greater Sage-Grouse habitat, which will continue to be managed according to the existing, underlying land use plan for the areas. BLM-administered lands in habitat management areas (priority, general, and other) within the planning area are where management direction described in this document will be applied (the decision areas; see **Figures 2-1a** and **2-1b** [**Appendix A**]). **Figures 1-2a** and **1-2b** (**Appendix A**) display where habitat management areas reside across the planning area for all lands regardless of jurisdiction.

Table 1-1
Land Management in the Planning Area

Surface Land Management	Total Surface Land Management Acres
BLM	45,424,700
Forest Service	9,787,300
Private	12,111,700
Indian reservation	942,600
USFWS	806,700
Department of Energy	2,600
State	232,500
National Park Service	115,000
Bureau of Reclamation	431,000
Local government	17,800
Department of Defense	402,400
Total acres	**70,274,300**

Source: BLM GIS 2015

Figure 1-1
Planning Area



PHMA are areas that meet some stage of the Greater Sage-Grouse life-cycle requirements, based on best available science. These broad habitat maps are necessary at the resource management plan-scale of planning in order to include a variety of important seasonal habitats and movement corridors that are spread across geographically diverse and naturally fragmented landscapes. Greater Sage-Grouse use multiple areas to meet seasonal habitat needs throughout the year and the resulting mosaic of habitats (e.g., winter, breeding, nesting, early brood-rearing, late brood-rearing, transitional, and movement corridor habitats) can encompass large areas. Broad habitat maps increase the likelihood that all seasonal habitats (including transition and movement corridors) are included. While areas of non-habitat, in and of themselves, may not provide direct habitat value for Greater Sage-Grouse (e.g., canyons, water bodies, and human disturbances), these areas may be crossed by birds when moving between seasonal habitats. Therefore, these habitat management areas are not strictly about managing habitat but are about providing those large landscapes that are necessary to meet the life-stage requirements for Greater Sage-Grouse. These areas will include areas that do not meet the habitat requirements described in the Seasonal Habitat Objectives table in the 2015 Final EIS. These areas meet Greater Sage-Grouse habitat needs by maintaining large, contiguous expanses of relatively intact sagebrush vegetation community.

1.4 PLANNING CRITERIA

Planning criteria establish constraints, guidelines, and standards for the planning process and help the BLM define the scope of the planning effort and estimate the extent of data collection and analysis. The following criteria are based on standards prescribed by applicable laws and regulations; agency guidance; results of consultation and coordination with the public and other federal, state, and local agencies; analysis pertinent to the planning area; and professional judgment.

The BLM has identified these planning criteria:

- The BLM will comply with all laws, regulations, policies, and guidance related to public lands management and implementing FLPMA and NEPA on BLM-administered lands.
- Greater Sage-Grouse is a state-managed species dependent on sagebrush steppe habitats managed in partnership by federal, state, and local authorities, including private landowners. Appropriate state agencies' Greater Sage-Grouse data and expertise will be used to the fullest extent practicable by the BLM in making management determinations on BLM-administered lands.
- Lands addressed in the RMPA/EIS will be BLM-administered land in Greater Sage-Grouse habitats, including surface and split-estate lands with federal subsurface mineral rights. Any decisions in the RMPA/EIS will apply only to BLM-administered lands.
- This RMPA/EIS will comply with Secretarial Orders, including 3353 (Greater Sage-Grouse Conservation and Cooperation with Western States), which strives for compatibility with state conservation plans.
- This RMPA/EIS will incorporate, as appropriate, information in a USGS report that identified and annotated Greater Sage-Grouse science published since January 2015 (Carter et al. 2018) and a report that synthesized and outlined the potential management implications of this new science (Hanser et al. 2018), and other science not referenced in Hanser et al. 2018.
- This RMPA/EIS's adaptive management actions will be consistent with the Department of the Interior's Adaptive Management Technical Guide (DOI 2009).

- This RMPA/EIS will comply with BLM Manual 6840, Special Status Species Management.
- This RMPA/EIS will recognize valid existing rights.
- All activities and uses within Greater Sage-Grouse habitats will be managed to achieve Greater Sage-Grouse objectives and land health standards.
- Where more restrictive land use allocations or decisions are in effect for other resources (e.g., wilderness study areas, areas of critical environmental concern, cultural resources, and riparian areas) under existing RMPs, those more restrictive land use allocations or decisions will not be amended by this RMPA/EIS.
- This RMPA/EIS will respond to the March 31, 2017, United States District Court for the District of Nevada court order.

1.5 Issues and Related Resource Topics Identified Through Scoping

When deciding which issues to address related to the purpose and need, BLM considers points of disagreement, debate, or dispute regarding an anticipated outcome from a proposed action. Issues are based on anticipated environmental effects; as such, issues can help shape the proposal and alternatives.

The BLM used internal, agency, and public scoping to identify issues to consider in the environmental analysis. A summary of the scoping process is presented in a report titled "Potential Amendments to Land Use Plans Regarding Greater Sage-Grouse Conservation Scoping Report" (https://goo.gl/FopNgW).

When determining whether to retain an issue for more detailed analysis in this RMPA/EIS, the interdisciplinary team considered, among other things, the following:

- The environmental impacts associated with the issue, and the threats to species and habitat associated with the issue, are central to or of critical importance to development of a Greater Sage-Grouse management plan.
- A detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives.
- The environmental impacts associated with the issue are a significant point of contention among the public or other agencies.
- There are potentially significant impacts on resources associated with the issue.

Ultimately, it is important for decision-makers and the public to understand the impacts that each of the alternatives would have on specific resources; therefore, the BLM uses resource topics as a heading to indicate which resources would be affected by a potential management change. Importantly, resource topics will help organize the discussions of the affected environment (**Chapter 3**) and environmental consequences (**Chapter 4**).

The sections below lay out how issues raised during scoping, as well as related resource topics, are considered in this RMPA/EIS. Generally, they fall into the following categories:

- Issues and related resource topics retained for further consideration in this RMPA/EIS. These were issues raised during scoping that are retained in this RMPA/EIS and for which alternatives were developed to address the issues. In some cases, the resolution in the alternatives were previously analyzed in the 2015 Final EIS. In other cases, additional analysis is needed in this

RMPA/EIS. Because the issues are analyzed under resource topics in 2015, the resource topics corresponding with those retained for further analysis are also considered in this RMPA/EIS. Just like issues, resource topics may have been analyzed in the 2015 Final EIS for those decisions being included in this RMPA/EIS.

- Clarification of decisions in the 2015 ARMPA. These are decisions or frameworks in the 2015 ARMPA that require clarification as to their application or implementation. No new analysis is required, as the intentions behind the decisions were analyzed in the 2015 Final EIS.
- Issues and resource topics not carried forward for additional consideration or analysis. These are issues brought up during scoping that are not carried forward in this RMPA/EIS. While some of these issues are considered in this RMPA/EIS, they do not require additional analysis because they were analyzed in the 2015 Final EIS. Others are not carried forward in this RMPA/EIS because they do not further the purpose of aligning with the state's conservation plan or management strategies. Similar to issues, there are resource topics that are not retained for further analysis in this RMPA/EIS. This is because either they are not affected by the changes proposed in **Chapter 2** or because the effect was analyzed in the 2015 Final EIS.

1.5.1 Issues and Related Resource Topics Retained for Further Consideration in this RMPA/EIS

Table 1-2 summarizes those issues identified through scoping and that have been retained for consideration and additional discussion in **Chapters 3** and **4**.

Based on the issues identified in **Table 1-2** that have not been previously analyzed, the resource topics that have the potential to be impacted are: Greater Sage-Grouse, vegetation (including weeds and special status vegetation), land use and realty, renewable energy, minerals and energy, socioeconomics, livestock grazing, and comprehensive travel management. These resource topics, therefore, are carried forward for detailed analysis.

Table 1-2 identifies the corresponding resource topics to which the issues relate. The level of detail in the description of each resource topic and the effects from implementing any of the alternatives also are described in **Chapters 3** and **4**.

Table 1-2
Issues and Related Resource Topics

Issues	Resource Topics Related to the Issues
Modifying Habitat Management Area Designations • Need for adjusting HMAs so that they reflect the best available science and are consistent with habitat management areas identified by the State of Nevada and recommended by CDFW. This would provide consistency in management across jurisdictions and to third parties operating on public and state or private lands in Nevada and Northeastern California. • Integration of flexibility into the plans to be able to adjust habitat management area designations (and their associated land use plan allocations) without the need for a plan amendment, based on the best available science. • Maintaining all habitat areas as identified in the ARMPA, including SFAs, which should be provided with the most protections.	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management

Table 1-2
Issues and Related Resource Topics

Issues	Resource Topics Related to the Issues
Removing Sagebrush Focal Area Designations • Ensure it is clear the SFA mineral withdrawal has been cancelled and the justified reasoning for this cancellation. Is SFA designation relevant in absence of a mineral withdrawal? • Is this habitat designation needed to adequately maintain conservation of Greater Sage-Grouse habitat?	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Adaptive Management • Ensure federal, state, and local partners are part of the causal factor analysis process • Lack of flexibility with implementing and removing hard trigger adaptive management responses • Better alignment with DOI guidance on implementation of the adaptive management process • Incorporate best available science including local data and information into the adaptive management strategy	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Allocation Exception Process • Clarify and make consistent the various exception allocation processes • Verify use of landscape-scale mapping of priority habitat area (PHMA), general habitat management area (GHMA), and other habitat management areas (OHMA) in regards to the application of land use plan allocations and stipulations • Address restrictions on actions related to public health and safety, existing infrastructure, and administrative functions that serve a public purpose • Address inconsistencies with existing federal legislation and the 2015 ROD/ARMPA that include land tenure adjustments, including, but not limited to, disposals, exchanges, transfers, and Recreation and Public Purpose actions	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Mitigation • Alignment with the State of Nevada's mitigation strategy to the greatest extent possible • Ensure consistency in tracking and reporting changes to habitat quality and quantity	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management
Seasonal Timing Restrictions • Alignment with State of Nevada's conservation plan and management strategies with the State of California, to the greatest extent possible • Consider exceptions and/or modifications to seasonal timing restrictions to allow for beneficial or neutral projects to occur in a timely manner • Seasonal timing restrictions need to be adjusted to allow for public health and safety concerns to be addressed without delay.	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management

Table 1-2
Issues and Related Resource Topics

Issues	Resource Topics Related to the Issues
Modifying Habitat Objectives • Consideration of site potential based on ecological site descriptions and their associated state and transition models • Consistency with State of Nevada's desired habitat conditions • Incorporation of recent science supporting modifications	• Greater Sage-Grouse • Vegetation • Land Use and Realty • Renewable Energy • Minerals and Energy • Socioeconomics • Livestock Grazing • Comprehensive Travel Management

1.5.2 Clarification of Planning Decisions in the 2015 ARMPA

The following issues identified in existing planning decisions in **Table 1-3** were raised during scoping. These issues require clarification to language in the ARMPA but do not require new analysis. The clarifying language for these planning decisions is displayed in this planning document to communicate how these issues are being addressed through plan maintenance, policy, or implementation.

Table 1-3
Clarification Issues

Clarification Issue	Clarifications Addressed through Plan Maintenance, Policy, or Implementation
Modifying Lek Buffers • Clarification regarding the application of lek buffer-distances.	*Plan Maintenance* - Management Decisions SSS 2(D) and SSS 3(C) from the ARMPA have been clarified to resolve conflicting statements regarding how the BLM will "apply" lek buffers contained in the USGS Report *Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239). Management Decisions SSS 2(D) and SSS 3(C) have been revised to read as follows: *In undertaking BLM management actions [in PHMA and GHMA], and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will utilize the lek buffer-distances identified in the USGS' Open File Report 2014-1239 to establish the evaluation area around leks that will be used to analyze impacts during project-specific NEPA, in accordance with Appendix B.* Appendix B has also been revised to reflect this clarified decision language.
Changing Requirements for Required Design Features • Clarify the application of required design features and opportunities to deviate from them.	*Plan Maintenance* - Appendix C includes a required design features (RDFs)worksheet that BLM Nevada and Northeastern California will complete for all proposed activities authorized in PHMA, GHMA, and OHMA. This worksheet clearly defines the rationale for dismissing certain RDFs when they are not appropriate for specific proposed activities.

Table 1-3
Clarification Issues

Clarification Issue	Clarifications Addressed through Plan Maintenance, Policy, or Implementation
Fire and Invasives • Provide the necessary prioritization of all three aspects of fire management: pre-suppression, suppression, and rehabilitation and find ways to expedite on-the-ground treatments to address this present and widespread threat in the Nevada and Northeastern California Sub-region.	*Policy* - If the Great-Basin-Wide Programmatic Environmental Impact Statements (PEISs) to Reduce the Threat of Wildfire and Support Rangeland Productivity are completed, BLM Nevada and California will issue statewide policies that will instruct BLM field and district offices to incorporate by reference the analysis contained in the PEISs for on-the-ground environmental analysis, in an effort to expedite on-the-ground activities that will address the present and widespread threat of fire and invasives in the Nevada and Northeastern California sub-region.
Increase Opportunities for Outcome-Based Grazing • Identify and complete a number of authorizations to support the development of rigorous and defensible outcome-based grazing.	*Implementation* - BLM Nevada and California will continue to pursue outcome-based grazing initiatives that will exhibit a new management paradigm that BLM managers and livestock operators can use to establish management practices that can achieve specific management objectives that respond to changing, on-the-ground conditions such as wildfires, high moisture years, or drought. This will better ensure healthy rangelands, high-quality wildlife habitat, and economically sustainable ranching operations.
Land Health Assessments and Habitat Objectives • Management Decisions LG 5 (and references of these decisions in Management Decisions LG 6 and LG 10) within the existing ARMPA are inconsistent with 43 CFR 4160.1.	*Plan Maintenance* - Management Decision LG 5 (page 2-25 through 2-26, ARMPA), as written, is not consistent with existing BLM grazing regulations (43 CFR 4160.1) or recent policies (WO Instruction Memorandum 2018-023), as it provides direction to implement interim management strategies until appropriate modifications are incorporated through the permit renewal process (if results from a land health assessment indicate that Greater Sage-Grouse habitat objectives are not met and grazing is a causal factor). This management decision, however, does not identify that these interim management strategies need to be within the existing terms and conditions of a grazing permit in order to implement them immediately. Under 43 CFR 4160.1 (existing BLM grazing regulations), the BLM must issue a proposed/final decision on any affected applicant, permittee or lessee, and interested public when modifying a grazing permit. If the interim management strategies are within the existing terms and conditions of a grazing permit, they can be implemented immediately; however, if the selected interim management strategies are outside of the existing terms and conditions, the BLM will need to comply with NEPA and the decision processes provided in 43 CFR 4160. For this reason, Management Decision LG 5 will be removed, as well as references to Management Decision LG 5 in Management Decisions LG 6 and LG 10.

1.5.3 Issues and Resource Topics Not Carried Forward for Additional Analysis (Scoping Issues Outside the Scope and Scoping Issues Previously Analyzed)

Issues and Related Resource Topics Not Carried Forward for Additional Analysis

The following issues were raised during scoping and are not carried forward for a variety of reasons. For example, population-based management is not carried forward for detailed analysis because the BLM does not manage species populations; that authority falls under the jurisdiction of the States of Nevada and California.

Because the following issues were raised during scoping and were already analyzed in the 2015 Final EIS, and no significant new information has emerged, they do not require additional analysis in this RMPA/EIS. These issues were analyzed under most resource topics in the 2015 Final EIS, and these types of impacts on these resources are described in the range of alternatives in the 2015 Final EIS. The impacts of implementing the alternatives in this RMPA/EIS are within the range of alternatives previously analyzed.

- Effects of NSO stipulations on Greater Sage-Grouse habitat on non-BLM-administered
- Mitigation for oil and gas development
- Prioritization of fluid mineral leases outside of PHMA and GHMA
- Numerical noise limitations within PHMA
- Contribution of disturbance caps toward Greater Sage-Grouse conservation objectives
- Wildfire response to vegetation treatments
- Habitat assessment framework
- Mitigation standard

Other issues were evaluated as part of the 2015 Final EIS. For the same reasons they were dismissed in the 2015 Final EIS, they are not carried forward for detailed analysis in this RMPA/EIS:

- Hunting Greater Sage-Grouse
- Predator control
- Aircraft overflights in PHMA/GHMA

Resource Topics Not Carried Forward for Additional Analysis

The resource topics below are dismissed from detailed analysis. While these resource topics may have impacts related to Greater Sage-Grouse conservation that were analyzed in the 2015 Final EIS, they are dismissed from detailed analysis because they have no potentially significant impacts from actions proposed in this RMPA/EIS:

- Geology
- Indian trust resources
- Noise
- Air quality and visibility
- Special designations (e.g., areas of critical environmental concern, research natural areas, wilderness, wilderness study areas, wild and scenic rivers, and national scenic and historic trails)

- Environmental justice
- Wildland fire and fire management
- Wild horses and burros
- Recreation
- Visual resources
- Water resources
- Cultural and heritage resources
- Lands with wilderness characteristics

1.6 Relationship to Other Policies, Plans, and Programs

The BLM recognizes the importance of state and local plans. The BLM will work to be consistent with or complementary to the management actions in these plans when possible to the extent consistent with the laws governing the administration of the public lands.

1.6.1 State Plans

State plans considered during this planning effort are the following:

- Nevada's 2016-2021 Statewide Comprehensive Outdoor Recreation Plan—Assessment and Policy Plan (Nevada Department of Conservation and Natural Resources 2003)
- Nevada Comprehensive Preservation Plan (Nevada State Historic Preservation Office 2012–2020)
- Sustainable Preservation: California's Statewide Historic Preservation Plan, 2013–2017 (California State Parks 2013)
- Nevada Department of Wildlife-Wildlife Action Plan (2013)
- Greater Sage-Grouse Conservation Plan for Nevada and Eastern California (NDOW 2004)
- Nevada Sage-Grouse Conservation Strategy (State of Nevada 2001, 2004, 2012)
- Nevada Sage-Grouse Conservation Plan (State of Nevada 2014, as amended)
- Nevada's Coordinated Invasive Weed Strategy (Nevada Weed Action Committee 2000)
- Nevada Division of State Lands, Lands Identified for Public Acquisition (Nevada Department of Conservation & Natural Resources 1999)
- State of Nevada Drought Plan (Nevada Department of Conservation and Natural Resources 2012)
- Nevada Division of State Lands, Nevada Statewide Policy Plan for Public Lands (Nevada Department of Conservation & Natural Resources 1985)

1.6.2 Local Plans

Local land use plans considered during this planning effort are the following:

- Carson City Comprehensive Master Plan, Nevada (Carson City 2006)
- Churchill County Master Plan, Nevada (Churchill County 2015)
- Churchill County Water Resource Plan, Nevada (Churchill County 2007)
- City of Caliente Master Plan, Nevada (City of Caliente 2011)

- Douglas County Comprehensive Master Plan, Nevada (Douglas County 2012)
- Douglas County Open Space Plan, Nevada (Douglas County 2007)
- Elko County, Nevada Greater Sage-Grouse Management and Conservation Strategy Plan (September 2012)
- Elko County General Open Space Plan, Nevada (Elko County 2003)
- Elko County Public Lands Policy Plan, Nevada (Elko County 2008)
- Elko County Water Resource Management Plan, Nevada (Elko County 2007)
- Esmeralda County Master Plan, Nevada (Esmeralda County 2011)
- Esmeralda County Public Lands Policy Plan, Nevada (Esmeralda County 2013)
- Eureka County Master Plan, Nevada (Eureka County 2010)
- Humboldt County Master Plan, Nevada (Humboldt County 2002)
- Humboldt County Master Plan Open Space Element Amendment, Nevada (Humboldt County 2003)
- Lander County Master Plan, Nevada (Lander County 2010)
- Lander County Policy Plan for Federally Administered Lands, Nevada (Lander County 2005)
- Lander County Water Resources Plan, Nevada (Lander County 2011)
- Lassen County Fire Safe Plan, California (Lassen County 2012)
- Lassen County General Plan, California (Lassen County 1999)
- Lincoln County Master Plan, Nevada (Lincoln County 2007)
- Lincoln County Open Space and Community Lands Plan, Nevada (Lincoln County 2011)
- Lincoln County Public Lands Policy Plan, Nevada (Lincoln County 2015)
- Lyon County Comprehensive Master Plan, Nevada (Lyon County 2010)
- Modoc County General Plan, California (Modoc County 1988)
- Nye County Comprehensive Master Plan, Nevada (Nye County 2011)
- Pershing County Master Plan, Nevada (Pershing County 2002)
- Pershing County Natural Resources Management Plan: Natural Resources and Federal or State Land Use, Nevada (Pershing County 2010)
- Shasta County General Plan, California (Shasta County 2004)
- Siskiyou County General Plan, California (Siskiyou County 2010)
- Storey County Master Plan, Nevada (Storey County 1994)
- Title 7 of the Nye County Code (Comprehensive Land Use and Management Plan for Federal and State Lands within Nye County), Nevada (Nye County 2009)
- Tri-Party Framework for Interactions to Address Public Lands Issues in Nye County, Nevada (includes Nye County, the BLM, and Forest Service), Nevada (Nye County1996)
- Truckee Meadows Regional Plan (Washoe County Only), Nevada (TMRPA 2007)
- Washoe County Comprehensive Plan, Nevada (Washoe County 2005a)
- Washoe County Open Space & Natural Resource Management Plan, Nevada (Washoe County 2008)
- Washoe County Water Resources Management Plan, Nevada (Washoe County 2005b)

- Washoe County Master Plan with Elements and Area Plans, Nevada (Washoe County, 2010, as amended)
- Washoe County Regional Open Space & Natural Resource Management Plan, Nevada (Washoe County, 2008)
- White Pine County Public Lands Policy Plan, Nevada (White Pine County 2007)
- White Pine County Water Resources Plan, Nevada (White Pine County 2006)

Chapter 2. Alternatives

2.1 Introduction

This chapter describes the alternatives evaluated as a part of this RMPA/EIS. This RMPA/EIS analyzes in detail the No-Action Alternative and the Management Alignment Alternative, which was developed to meet the purpose and need presented in **Chapter 1**. In addition to the alternatives considered in detail, this chapter describes an alternative considered but eliminated from detailed analysis.

Components of Alternatives

Goals are broad statements of desired outcomes and are not quantifiable or measurable. Objectives are specific measurable desired conditions or outcomes intended to meet goals. Goals and objectives can vary across alternatives, resulting in different allowable uses and management actions for some resources and resource uses.

Management actions and allowable uses are designed to achieve goals and objectives. Management actions are measures that guide day-to-day and future activities. Allowable uses delineate uses that are permitted, restricted, or prohibited, and may include stipulations or restrictions. Allowable uses also identify lands where specific uses are excluded to protect resource values, or where certain lands are open or closed in response to legislative, regulatory, or policy requirements. Implementation decisions are site-specific actions and are typically not addressed in RMPs.

2.2 Alternatives Considered but Not Analyzed in Detail

2.2.1 Varying Constraints on Land Uses and Development Activities

During scoping, some commenters asked the BLM to consider additional constraints on land uses and ground-disturbing development activities to protect Greater Sage-Grouse habitat. These constraints are beyond those in the current management plan.[1] Other commenters, in contrast, asked the BLM to consider eliminating or reducing constraints on land uses, or incorporating other flexibilities into the BLM's implementation of RMPs, in addition to those issues that are already evaluated in the Management Alignment Alternative. The BLM considered every scoping comment and, where appropriate, incorporated these issues into the Management Alignment Alternative, following coordination with the States. Because the purpose and need for the BLM's action, building off of the 2015 ROD/ARMPA, is to enhance cooperation with the States by seeking to better align the BLM's RMPs with individual state plans and/or conservation measures, the BLM gave great weight to the States' identification of issues that warrant consideration in this planning effort.

This planning process does not revisit every issue that the BLM evaluated in 2015. Instead, the BLM now addresses refinements to the 2015 ROD/ARMPA decisions, consistent with the BLM's purpose and need for action. Accordingly, this RMPA/EIS has its foundation in the comprehensive 2015 Final EIS and

[1]For example, this 2018 planning process, built upon the 2015 planning process, will continue to ensure that the BLM complies with its special status species policy, including the commitment to "implement measures to conserve [special status] species and their habitats…and promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA." (BLM Manual 6840, Special Status Species Management)

ROD/ARMPA and incorporates those documents by reference—including the entire range of alternatives evaluated through the 2015 planning process:

- Alternative A would have retained the management goals, objectives, and direction specified in the BLM RMPs and the Forest Service land and resource management plans effective prior to the 2015 ROD/ARMPA.
- Alternative B was based on the conservation measures developed by the National Technical Team planning effort in Washington Office Instruction Memorandum (IM) 2012-044. As directed in the IM, the conservation measures developed by the National Technical Team must be considered and analyzed, as appropriate, through the land use planning process and NEPA by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. Most management actions included in Alternative B would have been applied to PHMA.
- Alternative C was based on a citizen groups' recommended alternative. This alternative emphasized improvement and protection of habitat for Greater Sage-Grouse and was applied to all occupied Greater Sage-Grouse habitat. Alternative C would have limited commodity development in areas of occupied GRSG habitat and would have closed or designated portions of the planning area to some land uses.
- Alternative D, which was identified as the Preferred Alternative, balanced opportunities to use and develop the planning area and protects Greater Sage-Grouse habitat based on scoping comments and input from cooperating agencies involved in the alternatives development process. Protective measures would have been applied to Greater Sage-Grouse habitat.
- Alternative E was the alternative provided by the State or Governor's offices for inclusion and analysis in the EISs. It incorporated guidance from specific state conservation strategies and emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.
- Alternative F was also based on a citizen group-recommended alternative. This alternative emphasized improvement and protection of habitat for Greater Sage-Grouse and defined different restrictions for PHMA and GHMA. Alternative F would have limited commodity development in areas of occupied Greater Sage-Grouse habitat and would have closed or designated portions of the planning area to some land uses.
- The Proposed LUPA incorporated guidance from specific State Conservation strategies, as well as additional management based on the National Technical Team recommendations. This alternative emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.

The BLM considered the entire range of alternatives from the 2015 Final EIS to identify issues meriting reconsideration, given the BLM's goal of enhancing alignment with state plans. In this manner, the BLM will continue to appropriately manage Greater Sage-Grouse and its habitat through this planning effort in tandem with the 2015 ROD/ARMPA.

Further, additional constraints on land uses or development without a documented need would not meet the purpose of SO 3353. The BLM did not discover new information that would indicate that it should increase the level of conservation, management, and protection to achieve its land use plan objective. As part of the consideration of whether to amend the 2015 Greater Sage-Grouse RMPs, the BLM requested the USGS to develop an annotated bibliography of Greater Sage-Grouse science

published since January 2015 (Carter et al. 2018; see **Section 3.1**). In addition, SO 3353 directs the BLM to promote habitat conservation, while contributing to economic growth and energy independence. As analyzed in the 2015 Nevada and Northeastern California Proposed Land Use Plan Amendment and Final EIS, all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands.

2.3 DESCRIPTION OF ALTERNATIVES

2.3.1 No-Action Alternative

Under the No-Action Alternative, the BLM would not amend the current RMPs amended by the Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment. Greater Sage-Grouse habitat would continue to be managed under current management direction. Goals and objectives for BLM-administered lands and federal mineral estate would not change. Allowable uses and restrictions would also remain the same, as they pertain to such activities as mineral leasing and development, recreation, lands and realty, and livestock grazing. This alternative also includes the designation of SFAs, which is analyzed in **Chapter 4**.

2.3.2 Management Alignment Alternative

This alternative makes modifications to the No-Action Alternative to better align BLM management direction with the State of Nevada's Conservation Plan and conservation strategies with the CDFW to reach a "combination of balanced and diverse resource uses," as required by FLPMA. This alternative was also developed in a collaborative process with cooperating agencies to support conservation outcomes for Greater Sage-Grouse.

The BLM continues to build upon the 2015 planning effort as envisioned in SO 3353 by collaborating with states and stakeholders to improve compatibility between federal management plans and other plans and programs at the state level, while ensuring consistency with the BLM's multiple use mission and protection of Greater Sage-Grouse habitat. This enhanced cooperation between the BLM and the States would lead to improved management and coordination with states across the range of Greater Sage-Grouse. These modifications include updating and making adjustments to habitat management area boundaries and including language that would allow the BLM to update, through plan maintenance, when appropriate, based on the most updated best available science; removing SFA designations; incorporating new science into the adaptive management strategy and replacing predetermined hard trigger responses with a clear causal factor analysis process to determine the appropriate management responses and to address the decline in Greater Sage-Grouse populations and/or habitat; revising and simplifying an allocation exception process to allow for the consideration of projects within designated habitat management areas (provided they meet prescribed criteria); clarifying the BLM's commitment to use the State of Nevada's Habitat Quantification Tool to quantify human disturbance calculations for mitigation; and identifying that seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with NDOW and CDFW. At the request of the States, the Management Alignment Alternative in this Draft RMPA/EIS includes the net conservation gain standard for compensatory mitigation that the BLM incorporated into its plans in 2015. DOI and the BLM, however, have modified their mitigation policies since the 2015 plans were finalized. The public did not have the opportunity to comment specifically on a net conservation gain approach to compensatory mitigation during the 2015 land use planning process. In addition, DOI and the BLM are evaluating whether the implementation of a compensatory mitigation standard on public lands is appropriate and consistent with applicable legal

authorities. We request public comment about how the BLM should consider and implement mitigation with respect to the Greater Sage-Grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans.

Consistent with the Notice of Cancellation of the BLM's application to withdraw SFAs from locatable mineral entry (82 *Federal Register* 195, October 11, 2017, p. 47248), this alternative would also remove the recommendation for withdrawal. The effects of such action are included in **Chapter 4**.

2.4 Comparative Summary of Alternatives

Table 2-1 below provides a comparison between acres designated as PHMA, GHMA, and OHMA (managed by the BLM) between the No-Action Alternative and Management Alignment Alternative. The change in acres between these two alternatives is based on the BLM's consideration in the Management Alignment Alternative of new PHMA, GHMA, and OHMA boundaries, from the composite management categories contained within the USGS's Spatially Explicit Modeling of Annual and Seasonal Habitat for Greater Sage-Grouse (*Centrocercus urophasianus*) in Nevada and Northeastern California—an updated decision-support tool for management (Coates et al. 2016) and as adopted and modified by the State of Nevada on December 11, 2015.

Between the two alternatives, no allocation decisions, with the exception of the recommendation for withdrawal in SFAs, would change. Acres of PHMA, GHMA, and OHMA vary between alternatives.

Table 2-1
Comparative Summary of Alternatives

		No-Action Alternative	Management Alignment Alternative (Preferred Alternative)*
Comparative Summary of Habitat Management Areas (Acres)			
PHMA (see Figures 2-1a and 2-1b [**Appendix A**])		9,309,800 acres (2,797,400 portion of PHMA that is designated as SFA)	9,265,800 acres
GHMA (see Figures 2-1a and 2-1b)		5,720,700 acres	5,748,000 acres
OHMA (see Figures 2-1a and 2-1b)		5,876,500 acres	4,868,900 acres
Comparative Summary of Allocations			
Land Tenure (see Figures 2-12a and 2-12b)	Retain	PHMA, GHMA, OHMA	PHMA, GHMA, OHMA
	Dispose	OHMA	OHMA
Solar (see Figures 2-9a and 2-9b)	Open	—	—
	Avoidance	—	—
	Exclusion	PHMA, GHMA, OHMA	PHMA, GHMA, OHMA
Wind (see Figures 2-8a and 2-8b)	Open	OHMA	OHMA
	Avoidance	GHMA	GHMA
	Exclusion	PHMA	PHMA
Minor ROWs (see Figures 2-11a and 2-11b)	Open	OHMA, GHMA	OHMA, GHMA
	Avoidance	PHMA	PHMA
	Exclusion	—	—
Major ROWs (see Figures 2-10a and 2-10b)	Open	OHMA	OHMA
	Avoidance	PHMA, GHMA	PHMA, GHMA
	Exclusion	—	—
Fluid Minerals (Oil, Gas, and Geothermal) (see Figures 2-4a and 2-4b)	Open with Standard Stipulations	OHMA	OHMA
	Open with Minor Stipulations	GHMA	GHMA
	Open with Major Stipulations	PHMA	PHMA
Locatable Minerals (see Figures 2-5a and 2-5b)	Open	PHMA, GHMA, OHMA	PHMA, GHMA, OHMA
	Recommended for Withdrawal	Portion of PHMA that is SFA is Recommend for Withdrawal	—
Salable Minerals (see Figures 2-6a and 2-6b)	Open	GHMA, OHMA	GHMA, OHMA
	Closed	PHMA	PHMA
Non-Energy Leasable Minerals (see Figures 2-7a and 2-7b)	Open	GHMA, OHMA	GHMA, OHMA
	Closed	PHMA	PHMA
Comprehensive Travel Management (see Figures 2-13a and 2-13b)	Open	OHMA	OHMA
	Limited	PHMA, GHMA	PHMA, GHMA
	Closed	—	—
Livestock Grazing (see Figure 2-3a and 2-3b)	Available	PHMA, GHMA, OHMA	PHMA, GHMA, OHMA
	Not Available	—	—

*Under the Management Alignment Alternative, site specific projects would not need to conform to these allocation decisions if they meet one of the criteria outlined under the "Allocation Exception Process" management direction.

2.5 COMPARISON OF ALTERNATIVES

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
Issue: Modifying Habitat Management Area Designations • Need for adjusting habitat management areas so that they reflect the best available science and are consistent with habitat management areas identified by the State of Nevada and recommended by CDFW. This would provide consistency in management across jurisdictions and to third parties operating on public and state or private lands in Nevada and Northeastern California. • Integration of flexibility into the plans to be able to adjust habitat management area designations (and their associated allocations) without the need for a plan amendment, based on the best available science. • Maintaining all habitat areas as identified in the ARMPA, including SFAs, which should be provided with the most protections.			
Conform to management areas identified by the States	Appendix A (Maps)	PHMA, GHMA, and OHMA boundaries are based on the 2015 Approved Resource Management Plan Amendment HMA maps (See Appendix A: Maps). These boundaries were derived from USGS' *Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California* (Coates et al. 2014) • Manage 9,309,800 acres as PHMA ○ Including 2,797,400 acres of PHMA as SFA • Manage 5,720,700 acres as GHMA • Manage 5,876,500 acres as OHMA	PHMA, GHMA, and OHMA boundaries are based on composite management categories contained within USGS's *Spatially Explicit Modeling of Annual and Seasonal Habitat for Greater Sage-Grouse (*Centrocercus urophasianus*)* in Nevada and Northeastern California—an updated decision-support tool for management (Coates et al. 2016), as adopted and modified by the State of Nevada on December 11, 2015 (see Appendix A: Maps). • Manage 9,265,800 acres as PHMA • Manage 5,748,000 acres as GHMA • Manage 4,868,900 acres as OHMA BLM recognizes that landscape level mapping may not accurately reflect on-the-ground conditions. Therefore, the habitat management area designations (**Figure 2-1b**) do not constitute a land use plan decision but rather a landscape level reference of relative habitat suitability. When a proposed project is thought to be in an area that is unsuitable for Greater Sage-Grouse within PHMA, GHMA, and/or OHMA, habitat assessments of the project site and its surrounding areas would be conducted by a qualified biologist with Greater Sage-Grouse experience using BLM-approved methods based on Stiver et al. 2015

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
			and compliant with current BLM Policy, to identify suitable, marginal, or unsuitable Greater Sage-Grouse habitats at multiple scales. This habitat assessment process would then inform criteria (i) under *Issue: Allocation Exception Process, Management Alignment Alternative*. The BLM would track all on-the-ground assessments and would share this information with USGS and the States of Nevada and California to consider when they begin refining the habitat management maps in the future.
Habitat management area designations flexibility	MD SSS 17	As site-specific Greater Sage-Grouse data (habitat assessments, lek counts, telemetry, etc.) is collected, the information will be included into future modeling efforts using the "Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California" (Coates et al. 2014) to reflect the most up-to-date spatial representation of Greater Sage-Grouse habitat categories. Through plan maintenance or plan amendment/revision, as appropriate, and in consultation with the Nevada Department of Wildlife and USFWS, based on the best scientific information, the updated modeling efforts may be adopted and appropriate allocation decisions and management actions will be applied to PHMA, GHMA, and OHMA. Future modeling efforts to incorporate site-specific Greater Sage-Grouse data will utilize the same modeling methods (as described under Methods and Results in Coates et al. 2014) used to develop the current Nevada and Northeastern California Subregions' Greater Sage-Grouse habitat management categories. The addition of site-specific Greater Sage-Grouse data will allow for the refinement of the spatial representation of the Greater Sage-Grouse habitat management categories.	Consistent with the State of Nevada's Greater Sage-Grouse Conservation Plan (2014, as amended) and CDFW's management recommendations, the habitat management mapping process would be reviewed and refined every 3 to 5 years, or when new data are incorporated in the model. New or improved spatial data (e.g., additional Greater Sage-Grouse telemetry data, updated or improved vegetation community data) would be incorporated during the refinement process. The review and refinement process would be scientifically based and would include review and input from the Sagebrush Ecosystem Technical Team (SETT), NDOW, BLM, USFS, and USFWS. For refinements in California, this process would also include CDFW. Other stakeholders would be encouraged to participate in the process by submitting relevant information to the listed agencies. The USGS habitat suitability modeling processes (Coates et al. 2016) would be the basis for future refinements. As these habitat management categories are adjusted and approved by the States of Nevada and California, adjustments to PHMA, GHMA, and/or OHMA boundaries (along with the existing allocation decisions and management actions tied to these areas) would be made by the BLM through plan maintenance.

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
Issue: Removing Sagebrush Focal Area Designations • Ensure it is clear the SFA mineral withdrawal has been cancelled and the justified reasoning for this cancellation. Is SFA designation relevant in absence of a mineral withdrawal? • Is this habitat designation needed to adequately maintain conservation of Greater Sage-Grouse habitat?			
SFA	MD SSS 5 Objective Veg 1 MD Fire 2 Objective Fire 2-4 MD Fire 11-12 MD LG 2 MD LG 3 MD LG 4 MD LG 11 MD WHB 3 through 7 MD MR 3 MD MR 4a MD MR 16 MD LR 24 MD MIT 2	Designate 2,797,400 acres as SFA. SFA will be managed as PHMAs, with the following additional management: • Recommended for withdrawal from the General Mining Act of 1872, subject to valid existing rights • Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing • Prioritized for vegetation management and conservation actions in these areas, including, but not limited to land health assessments, wild horse and burro management actions, review of livestock grazing permits/leases, and habitat restoration.	No similar action (no areas would be managed as SFA). Lands previously identified as SFA would be managed according to their underlying habitat management area designation (PHMA, GHMA, or OHMA, as identified under this alternative).
Issue: Adaptive Management • Ensure federal, state, and local partners are part of the causal factor analysis process. • Lack of flexibility with implementing and removing hard trigger adaptive management responses. • Better alignment with Department of Interior guidance on implementation of the Adaptive Management Process. • Incorporate best available science including local data and information into the adaptive management strategy.			
Adaptive Management	MD SSS 18 MD SSS 19 MD SSS 20 MD SSS 21 MD SSS 24 Appendix J	A biologically significant unit (see Appendix A; Figure 2-2) that has hit a soft trigger due to vegetation disturbance will be a priority for restoration treatments consistent with Fire and Invasives Assessment Tool (FIAT) (Appendix J). If a soft trigger is reached, the BLM will identify the causal factor and apply additional project-level adaptive	The revised soft and hard population triggers (signals) and new BSU and lek cluster boundaries were derived from USGS's *Hierarchical Population Monitoring of Greater Sage-Grouse (*Centrocercus urophasianus*) in Nevada and California— Identifying Populations for Management at the Appropriate Spatial Scale: U.S. Geological Survey Open-File*

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
		management and/or mitigation measures contained in the authorization (and for future similar authorizations), to alleviate the specific or presumptive causes in the decline of Greater Sage-Grouse populations or its habitats and include the following: The adjustment in management would be based on the causal factor and would affect only the area being impacted in the lek cluster or other appropriate scale (e.g., BSU) • Greater Sage-Grouse populations and habitat would continue to be monitored annually. • If the causal factor were not readily discernable, then an interdisciplinary team, including the BLM, Forest Service (as applicable), and state wildlife agency representatives, would identify the appropriate mitigation or adjusted management actions in a timely manner Once a hard trigger has been reached, all responses in Table J-1 and Table J-2 in Appendix J will be implemented. This includes where soft triggers have been reached for both population and habitat. When a hard trigger is hit in a Priority Area for Conservation (PAC) that has multiple BSUs, including those that cross state lines, the WAFWA Management Zone Greater Sage-Grouse Conservation Team will convene to determine the cause, will put project level responses in place, as appropriate, and will discuss further appropriate actions to be applied. The team will also investigate the status of the hard triggers in other BSUs in the PAC and will invoke the appropriate plan response. Adopting any further actions at the plan level may require initiating a plan amendment process.	*Report 2017–1089*. These triggers (signals), BSU boundaries, and lek cluster boundaries can be found in Appendix D. The State of Nevada is currently in the process of incorporating the adaptive management strategy within the State of Nevada's Conservation Plan. BLM would consider alignment with the State's strategy when it is completed. Implement the Adaptive Management Strategy (Appendix D). Soft and hard trigger responses would be removed when the criteria for recovery have been met (see Appendix D - Longevity of Responses). Removal of the soft and hard trigger responses returns management direction in the affected lek cluster and/or BSU to the management directions that are in force within those lek clusters and/or BSUs that have not tripped a trigger.

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
		The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.	
Issue: Mitigation • Alignment with the State of Nevada's mitigation strategy to the greatest extent possible. • To ensure consistency in tracking and reporting changes to habitat quality and quantity.			
Mitigation	MD MIT 1 MD MIT 2 Appendix F Appendix N	In PHMA, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) will result in an overall net conservation gain to Greater Sage-Grouse (see **Appendix F**). In GHMAs, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) in GHMAs will result in an overall net conservation gain to Greater Sage-Grouse (see Appendix F, Regional Mitigation Strategy). In Nevada only, the BLM will consult with the SETT for application of the "avoid, minimize, and compensate" mitigation strategy and the Conservation Credit System developed by the Nevada Department of Conservation and	Same as the No-Action Alternative, except Appendix F, Mitigation Strategy, would be updated to include the following clarifying language and concepts: When authorizing third-party actions, the BLM would apply the mitigation hierarchy as described in the CEQ regulations at 40 CFR 1508.20 and in the State of Nevada's Greater Sage-Grouse Conservation Plan, Section 3.1.2 (2014), which is to "avoid, minimize, and compensate," for impacts on Greater Sage-Grouse and its habitat. BLM would consult with the SETT and other state agencies when implementing the avoid, minimize, and mitigate process. The State of Nevada adopted a mitigation standard of net benefit (net conservation gain). Consistent with the State approach, this standard would be retained in the Management Alignment Alternative. In Nevada only, when authorizing third-party actions that would result in direct, indirect, or cumulative impacts on Greater Sage-Grouse or their habitat, the BLM would require those impacts to be quantified using the State of Nevada's Habitat Quantification Tool (HQT) to ensure consistency in tracking/reporting changes to habitat quality and quantity. When adverse impacts on Greater Sage-Grouse and its habitat remain after avoidance and minimization, mitigation would be considered subject to the federal regulations governing the authorization and valid existing rights.

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
		Natural Resources (2014a, 2014b) or other applicable mitigation system such as outlined in Appendix I. This will be to ensure that a net conservation gain of Greater Sage-Grouse habitat is achieved in mitigating human disturbances in PHMAs and GHMAs (see Appendix F) on all agency-authorized activities. The specifics of the coordination will be identified in an Memorandum of Understanding between the agencies. Subject to valid existing rights and applicable law, authorize locatable mineral development activity, by approving plans of operation and apply mitigation and best management practices that minimize the loss of PHMAs and GHMAs or that enhance Greater Sage-Grouse habitat by applying the "avoid, minimize and compensatory mitigation" process through an applicable mitigation system, such as the Nevada Conservation Credit System and the Barrick Nevada Sage-Grouse Bank Enabling Agreement (March 2015). In Nevada, coordinate with the SETT on the application of a compensatory mitigation program, such as the Nevada Conservation Credit System (Appendix N) for mitigating activities that result in habitat loss and degradation of Greater Sage-Grouse habitat in Nevada, where the application of compensatory mitigation will occur on or the credit will be applied to disturbance on BLM-administered lands. Identify compensatory mitigation areas in PHMAs and GHMAs with the potential to achieve Greater Sage-Grouse habitat objectives (Habitat Objectives table in the 2015 Final EIS), in accordance with FIAT, the SFA prioritization, and the State of Nevada Strategic Action Plan.	When it is determined that an activity requires compensatory mitigation, or a proponent voluntarily offers to conduct compensatory mitigation, the BLM would coordinate with the SETT regarding use of the Conservation Credit System and/or evaluation of other proponent-developed mitigation options. Evaluation of mitigation options would be assessed using the HQT to ensure net benefit (net conservation gain) and that impacts calculated using the HQT would be mitigated with the equivalent number of functional acres regardless of mitigation method.

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
Issue: Allocation Exception Process • Clarify and make consistent the various exception allocation processes. • Verify use of landscape-scale mapping of PHMA, GHMA, and OHMA in regards to the application of allocations and stipulations. • Address restrictions on actions related to public health and safety, existing infrastructure, and administrative functions that serve a public purpose. • Address inconsistencies with existing federal legislation and Approved Resource Management Plans that include land tenure adjustments, including, but not limited to: disposals, exchanges, transfers and Recreation and Public Purpose actions.			
Allocation Exception Process	MD MR 4a MD MR 3 MD MR 21 MD RE 4 MD LR 21 MD REC 3 Appendix G	(Geothermal) For BLM land in the State of Nevada only, in the portions of the PHMAs outside of SFA, geothermal projects may be considered for authorization if all of the following conditions are met: • A team comprised of BLM, USFWS, and NDOW specialists advises the BLM State Director on appropriate mitigation measures for the project and its ancillary facilities, including lek buffer distances using the best available science; • Mitigation actions are consistent with this Plan's mitigation strategy such as the Nevada Conservation Credit System, and • The footprint of the project is consistent with the disturbance management protocols identified in this plan (see MD SSS 2 and Appendix E) (Salable Minerals) PHMAs are closed to new mineral material sales (see Appendix A; Figure 2-6). However, these areas remain open to free use permits and the expansion of existing active pits, if requirements in MD MR 20 can be met [Objective SSS 4 and apply MDs SSS 1 through SSS 4]. (Oil and Gas) In PHMAs outside of SFA, no waivers or modifications to an oil and gas lease no-surface-occupancy stipulation will be granted. In PHMAs, the Authorized Officer may grant an exception to an oil and gas lease no-surface-occupancy stipulation only where the proposed action: i. Will not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat; or,	In PHMA and GHMA, the State Director may grant an exception to the allocations and stipulations described in Section 2-5 if one of the following applies (in coordination with NDOW, SETT, and/or CDFW): i. The location of the proposed authorization is determined to be unsuitable (by a qualified biologist with Greater Sage-Grouse experience using methods based on Stiver et al 2015); lacks the ecological potential to become marginal or suitable habitat; and would not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse and its habitat. Management allocation decisions would not apply to those areas determined to be unsuitable because the area lacks the ecological potential to become marginal or suitable habitat; ii. Impacts from the proposed action could be offset through use of the mitigation hierarchy (avoid, minimize, mitigate) to achieve a net conservation gain and demonstrate that the individual and cumulative impacts of the project would not result in habitat fragmentation or other impacts that would cause Greater Sage-Grouse populations to decline. iii. The proposed action would be authorized to address public health and safety concerns, specifically as they relate to local, state, and

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
		ii. Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and will provide a clear conservation gain to Greater Sage-Grouse. Exceptions based on conservation gain (ii) may only be considered in (a) PHMAs of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) Areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid federal oil and gas lease existing as of the date of this RMP amendment. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts (see Appendix G). Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other Greater Sage-Grouse expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publicly available at least quarterly. (Wind Energy) Within PHMAs, wind facilities associated with existing industrial infrastructure (e.g., a mine site) to	national priorities. iv. Renewals or re-authorizations of existing infrastructure in previously disturbed sites or expansions of existing infrastructure that have *de minimis* impacts or do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse and its habitat. v. The proposed action would be determined a routine administrative function conducted by State or local governments, including prior existing uses, authorized uses, valid existing rights and existing infrastructure (i.e., rights-of-way for roads) that serve such a public purpose. vi. Exceptions to lands that are identified for retention in **Figure 2-12b** would be considered for disposal or exchange if they were identified for disposal through previous planning efforts, either as part of the due process of carrying out Congressional Acts (e.g., the respective Lincoln and White Pine County Conservation, Recreation, and Development Acts) and the agency can demonstrate that the disposal, including land exchanges, would have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse or can achieve a net conservation gain through the use of compensatory mitigation.

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
		provide on-site power generation could be considered for approval, subject to a net conservation gain. (Land Tenure) Lands classified as PHMAs and GHMAs for Greater Sage-Grouse will be retained in federal management, unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will provide a net conservation gain to Greater Sage-Grouse or (2) the agency can demonstrate that the disposal, including land exchanges, of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse (see Appendix A; Figure 2-12). (Recreation) In PHMA, do not construct new recreation facilities (e.g., campgrounds, trails, trailheads, staging areas) unless the development will have a net conservation gain to Greater Sage-Grouse and its habitat (such as concentrating recreation, diverting use away from critical areas, etc.), or unless the development is required for visitor health and safety or resource protection.	
Issue: Seasonal Timing Restrictions • Alignment with State of Nevada's conservation plan and management strategies with the State of California, to the greatest extent possible. • Consider exceptions and/or modifications to seasonal timing restrictions to allow for beneficial or neutral projects to occur in a timely manner. • Seasonal timing restrictions need to be adjusted to allow for public health and safety concerns to be addressed without delay.			
Seasonal Timing Restrictions	MD SSS 2E MD SSS 3D Appendix G	Seasonal restrictions will be applied during the periods specified below to manage discretionary surface-disturbing activities and uses on public lands (i.e., anthropogenic disturbances) that are disruptive to Greater Sage-Grouse, to prevent disturbances to Greater Sage-Grouse during seasonal life-cycle periods. 1. In breeding habitat within 4 miles of active and pending Greater Sage-Grouse leks from March 1 through June 30: a. Lek—March 1 to May 15	Same as the No-Action Alternative, except: The seasonal dates could be modified or waived (in coordination with NDOW and/or CDFW) based on site-specific information that indicates: i. A project proposal's NEPA document and/or project record, and correspondence from NDOW and/or CDFW, demonstrates that any modification (shortening/extending seasonal timeframes or waiving the seasonal timing restrictions all together) is justified on the basis

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
		b. Lek hourly restrictions—6 p.m. to 9 a.m. c. Nesting—April 1 to June 30 2. Brood-rearing habitat from May 15 to September 15 a. Early—May 15 to June 15 b. Late—June 15 to September 15 3. Winter habitat from November 1 to February 28 The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW and California Department of Fish and Wildlife (CDFW), in order to better protect Greater Sage-Grouse and its habitat. Footnote: The conditions would not be applicable to vegetation treatments being conducted to enhance Greater Sage-Grouse habitat, with exceptions for seasonal restrictions and noise.	that it serves to better protect or enhance Greater Sage-Grouse and its habitat than if the strict application of seasonal timing restrictions are implemented. Under this scenario modifications can occur if: a) A proposed authorization would have beneficial or neutral impacts on Greater Sage-Grouse. b) There are documented local variations (e.g., higher/lower elevations) and/or annual climatic fluctuations (e.g., early/late spring, long/heavy winter) that indicate the seasonal life cycle periods are different than presented, or that Greater Sage-Grouse are not using the area during a given seasonal life cycle period. ii. Modifications are needed to address an immediate public health and safety concern in a timely manner (e.g., maintaining a road impacted by flooding).
ISSUE: Modifying Habitat Objectives • Consideration of site potential based on Ecological Site Descriptions and their associated State and Transition Models. • Consistency with State of Nevada's Desired Habitat Conditions • Incorporation of recent science supporting modifications.			
Modifying Habitat Objectives	No similar action.	No similar action.	The Habitat Objectives table in the 2015 Final EIS would be revised to incorporate best available science in coordination with representatives from the SETT, USFWS, NDOW, CDFW, USFS, USGS, and BLM. The team would review and incorporate the best available science and would recommend adjustments based on regionally and locally derived data. As these habitat objectives are updated, adjustments would be made by the BLM through plan maintenance.

Table 2-2
Comparison of Alternatives

Topic	2015 ARMPA Decision Number	No-Action Alternative	Management Alignment Alternative
			The Habitat Objectives table in the 2015 Final EIS would be implemented following this guidance: The Habitat Objectives table in the 2015 Final EIS are desired habitat conditions that are broad goals based on habitat selection that may not be achievable in all areas. Objectives should be based on sources such as ecological site descriptions, associated state-and-transition models

2.6 PREFERRED ALTERNATIVE

BLM regulations require the agency to identify a preferred alternative in the Draft RMPA/EIS (43 CFR 1610.4-7). The preferred alternative represents those goals, objectives, and actions determined to be most effective at resolving planning issues and balancing resource use at this stage of the process. While collaboration is critical in developing and evaluating alternatives, the final designation of a preferred alternative remains the responsibility of the lead agency, which is the BLM for this project. The agency has identified the Management Alignment Alternative as the preferred alternative.

It is important to note that the identification of a preferred alternative does not constitute a final decision, and there is no requirement that the preferred alternative identified in this Draft RMPA/EIS be selected as the agency's decision in the ROD. Various parts of separate alternatives that are analyzed in this Draft RMPA/EIS can be "mixed and matched" to develop a proposed plan. With respect to compensatory mitigation in particular, at the request of the States, the Management Alignment Alternative in this Draft RMPA/EIS includes the net conservation gain standard for compensatory mitigation that the BLM incorporated into its plans in 2015. DOI and the BLM, however, have modified their mitigation policies since the 2015 plans were finalized. The public did not have the opportunity to comment specifically on a net conservation gain approach to compensatory mitigation during the 2015 land use planning process. In addition, DOI and the BLM are evaluating whether the implementation of a compensatory mitigation standard on public lands is appropriate and consistent with applicable legal authorities. We request public comment about how the BLM should consider and implement mitigation with respect to the Greater Sage-Grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans.

2.7 PLAN EVALUATION, MONITORING, AND ADAPTIVE MANAGEMENT

Plan evaluation is the process by which the plan and monitoring data are reviewed to determine if management objectives are being met and progress is being made toward meeting management goals and if management direction is sound. RMP evaluations determine if decisions are being implemented, if mitigation measures are satisfactory, if there are significant changes in the related plans of other entities, if there are new data of significance to the plan, and if decisions should be amended or revised.

Monitoring data gathered over time are examined and used to draw conclusions on whether management actions are meeting stated objectives, and if not, why not. Conclusions are then used to make recommendations on whether to continue current management or to identify what changes need to be made in management practices to meet objectives. The BLM would use RMP evaluations to determine if the decisions in the RMPA, supported by the accompanying NEPA analysis, are still valid in light of new information and monitoring data.

Evaluations would follow the protocols established by the BLM Land Use Planning Handbook (H-1601-1), DOI Adaptive Management Guidance (including Williams et. al 2009, Adaptive Management: The U.S. Department of the Interior Guide and Adamcik et al. 2004, Writing Refuge Management Goals and Objectives: A Handbook. US Fish and Wildlife Service) and, other appropriate guidance in effect at the time the evaluation is initiated.

This RMPA/EIS also includes an adaptive management strategy that can be found in Appendix D.

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Chapter 3. Affected Environment

3.1 Introduction

The purpose of this chapter is to describe the existing biological, physical, and socioeconomic characteristics of the planning area, including human uses that could be affected by implementing the alternatives described in **Chapter 2**. The affected environment provides the context for assessing potential impacts described in **Chapter 4**. The resource topics included in this chapter reflect those in **Table 1-2** as corresponding to an issue carried forward for detailed analysis in the 2015 Final EIS.

The geographic extent of this environmental analysis is the same as that in the 2015 Final EIS. The BLM acknowledges that there have been changes to the landscape since 2015; however, due to the scale of this analysis covering 45,359,000 acres of BLM-administered lands, data collected consistently across the range indicate that the extent of these changes to the landscape are relatively minimal. For example, BLM monitoring data collected and analyzed annually at the biologically significant unit (BSU) scale, as outlined in the Greater Sage-Grouse Monitoring Framework (Appendix D of the 2015 ROD/ARMPA), indicates that there has been a minimal overall increase in estimated disturbance (less than 1 percent range-wide from 2015 through 2017 in PHMA) and an overall decrease in sagebrush availability (less than 1 percent range-wide from 2012 through 2015 in PHMA) within BSUs.

Estimates of habitat management areas burned for 2016 and 2017 indicate a sharp increase in potential habitat availability loss during 2017, compared with previous fire seasons (**Sections 3.1.1** and **3.4**, below).

Actions since the 2015 Final EIS were authorized consistent with that document. The BLM would continue to implement the decisions in the 2015 Final EIS, unless those decisions are amended.

Acreage figures and other numbers were approximated using geographic information systems (GIS) technology; they do not reflect exact measurements or precise calculations.

3.1.1 Greater Sage-Grouse Literature, 2015–2018

As part of the consideration of whether to amend some, all, or none of the 2015 Greater Sage-Grouse land use plans, the BLM requested the USGS to inform the effort through the development of an annotated bibliography of Greater Sage-Grouse science published since January 2015 (Carter et al. 2018)[1] and a report that synthesized and outlined the potential management implications of this new science (Hanser et al. 2018).[2]

Following the 2015 plans, the scientific community has continued to improve the knowledge available to inform implementation of management actions and an overall understanding of Greater Sage-Grouse populations, their habitat requirements, and their response to human activity. The report discussed the science related to six major topics identified by USGS and BLM (summarized below), as follows:

[1] Available online: https://doi.org/10.3133/ofr20181008
[2] Available online: https://doi.org/10.3133/ofr20181017

- Multiscale habitat suitability (habitat objectives) and mapping tools
- Discrete human activities
- Diffuse activities
- Fire and invasive species
- Restoration effectiveness
- Population estimation and genetics

Multiscale Habitat Suitability (Habitat Objectives) and Mapping Tools

Since the 1950s, biologists have worked to develop a set of site-scale vegetation measures to inform habitat management, including the collection and analysis of Greater Sage-Grouse habitat use, nest success, and population trends relative to vegetation condition (Patterson 1952; Sveum et al. 1998a, 1998b; Connelly et al. 2000b; Holloran et al. 2005; Hagen et al. 2007; Kolada et al. 2009; Kaczor et al. 2011).

The existing state of knowledge for Greater Sage-Grouse habitat use at the site scale has been described and synthesized (Connelly et al. 2000, 2011; Hagen et al. 2007; Stiver et al. 2015). This information was included in the Habitat Objectives table in the 2015 Final EIS (BLM 2015). The science developed since 2015 largely corroborates the knowledge prior to 2015 regarding Greater Sage-Grouse habitat selection.

Improvements at the site scale facilitate a better understanding that indicates the potential need for a reevaluation of the existing habitat objective indicators and associated values (Hanser et al. 2018, p. 2). The BLM has completed a plan maintenance action whereby the agency has clarified its ability to modify the habitat objective indicator values based upon the best available local science.

Some of the science that was developed since 2015 that may require reevaluation and incorporation in the Habitat Objectives for Greater Sage-Grouse is the following:

The importance of mesic habitats for Greater Sage-Grouse brood-rearing identified in western Nevada, eastern California, and southeastern Oregon (Donnelly et al. 2016).

- Big and other sagebrush were important for Greater Sage-Grouse, but the species of sagebrush shrub usually varied across life stages within Nevada and northeastern California (Coates et al. 2016c). Additionally, this study found selection for upland mesic sites during the brood-rearing season and general avoidance of landscapes dominated by nonnative annual grass across all seasons (Coates et al. 2016c).
- Nesting and late brood-rearing microhabitat selection and linkages to survival were quantified in xeric and mesic regions of the Great Basin (primarily Nevada; Coates et al. 2017a). All vegetation measurements were phenologically corrected (Gibson et al. 2016a), and the authors found strong selection and positive survival for high horizontal cover and total shrub cover during nesting and late brood-rearing across all sites. Results from this study also provide more targeted guidelines for Greater Sage-Grouse microhabitat in Nevada and California, compared with broader range-wide guidelines published previously (Connelly et al. 2000).

- Adult females in areas impacted by wildfire 10 years prior tended to use other shrubs for nesting cover, suggesting that other shrub species might need to be considered in evaluations of fire-affected environments (Lockyer et al, 2015; Coates et al. 2017a).
- Hens and broods avoided pinyon-juniper by at least 68 meters in Nevada and California (Coates et al. 2016a).
- A model concluded hens and broods avoided edges with trees (conifers or willows) in late brood-rearing habitats (Westover et al. 2016).

The BLM has completed a plan maintenance action, whereby the agency has clarified its ability to modify the habitat objective indicator values based upon local, site-specific information.

Mapping Tools

Advances in modeling and mapping techniques at the range-wide scale can help inform broad-scale habitat assessment, allocations, and targeting of land management resources to benefit Greater Sage-Grouse conservation. The 2015 Final EIS included the 2014 version of the "Spatially explicit modeling of Greater Sage-Grouse (*Centrocercus urophasianus*) habitat in Nevada and northeastern California—A decision-support tool for management" (USGS Open-File Report 2014-1163) to delineate Greater Sage-Grouse habitat management areas within the planning area.

In 2016, the USGS updated the 2014 decision support tool, as follows:

- Adding radio and GPS telemetry locations from Greater Sage-Grouse monitored at multiple sites during 2014 to the original location dataset beginning in 1998
- Integrating high resolution maps of sagebrush and pinyon and/or juniper cover
- Modifying the spatial extent of the analyses to match newly available vegetation layers
- Accounting for differences in habitat availability between mesic sagebrush steppe communities in the northern part of the study area and drier Great Basin sagebrush in southerly regions
- Deriving updated land management categories and an updated index of Greater Sage-Grouse abundance and space-use
- Masking urban footprints and major roadways out of the final map products

Based on continued efforts to refine and improve Greater Sage-Grouse habitat mapping and incorporate the best available science, the BLM is considering adopting the updated 2016 spatially explicit model (USGS Open-File Report 2016-1080), which was adopted by the State of Nevada and recommended for adoption by the State of California. This was done to update delineations for Greater Sage-Grouse habitat management areas: PHMA, GHMA, and OHMA.

Discrete Anthropogenic Activities

The science developed since 2015 corroborates the knowledge prior to 2015 regarding the impact of discrete human activities on Greater Sage-Grouse. New science suggests that strategies to limit surface disturbance may be successful at limiting range-wide population declines, but they are not expected to reverse the declines, particularly where active oil and gas operations are present (Hanser et al. 2018, p. 2). This information may have relevance when considering the impact of changes to management actions designed to limit discrete disturbances.

Diffuse Activities

The science developed since 2015 does not appreciably change the knowledge prior to 2015 regarding diffuse activities (e.g., livestock grazing, predation, hunting, wild horses and burros, fences, recreation); however, some study authors questioned current assumptions, provided refinements, or corroborated existing understanding. This information was considered when determining the scoping issues addressed in **Chapter 1**, **Section 1.5**.

Studies have shown that the effects of livestock grazing will vary with grazing intensity and season. Predation can be limiting to Greater Sage-Grouse populations in areas with overabundant predator numbers or degraded habitats. Application of predator control has potential short-term benefits in small, declining populations; however, reducing human subsidies may be necessary to generate long-term changes in raven numbers. This is because raven control has produced only short-term declines in local raven populations.

Refinements to the current hunting seasons used by state wildlife agencies may minimize potential effects on Greater Sage-Grouse populations, but none of the studies implicated current application of hunting seasons and timings as a plausible cause for Greater Sage-Grouse declines. Finally, no new insights into the effects of wild horses and burros, fence collision, or recreational activity on Greater Sage-Grouse have been developed (Hanser et al. 2018, p. 2).

Fire and Invasive Species

Science since 2015 indicates that wildfire will continue to threaten Greater Sage-Grouse through loss of available habitat, reductions in multiple vital rates, and declining population trends, especially in the western part of its range. The concepts of resilience after wildfire and resistance to invasion by nonnative annual grasses have been mapped across the sagebrush ecosystem using links to soil temperature and moisture regimes. These concepts inform restoration and management strategies and help prioritize application of Greater Sage-Grouse management resources (Hanser et al. 2018, p. 2).

Restoration Effectiveness

Since 2015, tools have been developed to help managers strategically place and design restoration treatments where they will have the greatest benefit for Greater Sage-Grouse. Conifer removal benefited Greater Sage-Grouse through increased female survival and nest and brood success.

Treatment methods and site potential can affect post-treatment vegetation characteristics. Sagebrush manipulation treatments seem to benefit Greater Sage-Grouse populations and brood-rearing habitat availability, but benefits may be limited to areas with high sagebrush cover at higher elevations and in mountain big sagebrush (*Artemisia tridentata vaseyana*) communities. Studies indicate that Greater Sage-Grouse populations did not benefit from, or were negatively affected by, prescribed fire and mechanical sagebrush removal treatments (Hanser et. al. 2018, p. 3). Restoration activities occur mainly at the implementation level, and the BLM maintains the flexibility to incorporate new tools in the agency's project planning for restoration actions.

Population Estimation and Genetics

The accuracy of estimating Greater Sage-Grouse populations has increased because of improved sampling procedures used to complete count surveys at leks and the development of correction factors for potential bias in lek count data. In addition, techniques to map Greater Sage-Grouse genetic

structure at multiple spatial scales has also improved. This genetic data is used in statistical models to increase understanding of how landscape features and configuration affect gene flow. This understanding emphasizes the importance of maintaining connectivity between populations to ensure genetic diversity and distribution (Hanser et al. 2018, p. 3). New information continues to affirm the BLM's understanding that Greater Sage-Grouse is a species that selects for large, intact landscapes and habitat patches.

3.2 RESOURCES AFFECTED

Per **Chapter 1** (see **Section 1.5**), the following resources may have potentially significant effects based on the actions considered in **Chapter 2**. **Table 3-1**, below, provides the location of baseline information in the 2015 Final EIS, and, where applicable, additional information contained in the Sagebrush Focal Area Withdrawal EIS (BLM 2016).

Table 3-1
Affected Environment Incorporated by Reference

Resource Topic	Location of Baseline Information
Greater Sage-Grouse and its Habitat	Chapter 3, Section 3.2 (Greater Sage-Grouse and Greater Sage-Grouse Habitat), pages 3-3 to 3-41 (BLM 2015) Chapter 3, Section 3.7 (Wildlife and Special Status Animals, including Greater Sage-Grouse), pages 3-139 to 3-180 (BLM 2016)
Vegetation (Including Invasive and Exotic Species and Noxious Weeds)	Chapter 3, Section 3.3 (Vegetation (Including Invasive and Exotic Species and Noxious Weeds)), page 3-41 to 3-57 (BLM 2015) Chapter 3, Section 3.6 (Vegetation, Including Special Status Plants), page 3-128 to 3-138 (BLM 2016)
Livestock Grazing	Chapter 3, Section 3.8, page 3-93 to 3-101 Livestock Grazing (BLM 2015)
Land Use and Realty	Chapter 3, Section 3.11 (Land Use and Realty), page 3-110 to 3-121 (BLM 2015)
Renewable Energy	Chapter 3, Section 3.12 (Renewable Energy Resources), page 3-121 to 3-124 (BLM 2015)
Mineral Resources	Chapter 3, Section 3.13 (Mineral Resources), page 3-124 to 3-143 (BLM 2015) Chapter 3, Section 3.4 (Geology and Mineral Resources), page 3-2 to 3-8 (BLM 2016)
Socioeconomics	Chapter 3, Section 3.23 (Socioeconomics and Environmental Justice), page 3-193 to 3-231 (BLM 2015) Chapter 3, Section 3.5 (Social and Economic Conditions), page 3-9 to 3-127 (BLM 2016)
Comprehensive Travel Management	Chapter 3, section 3.10 (Comprehensive Travel and Transportation Management), page 3-104 to 3-110 (BLM 2015)

3.2.1 Resources Not Carried Forward for Analysis

The following resources and resource uses analyzed in the 2015 Final EIS were reviewed to determine if they could have potentially significant effects based on the actions considered in **Chapter 2**. Aligning BLM management with the State of Nevada's Conservation Plan and with the State of California's conservation strategies in regard to habitat management area mapping, adaptive management, mitigation, and seasonal timing restrictions would not substantially alter management direction or result in different outcomes. Because of this, no additional analysis was completed for the resources shown in **Table 3-2**, below; therefore, no new information on affected environment is provided.

Table 3-2
Resources and Resource Uses Not Carried Forward for Analysis

Riparian Areas and Wetlands	Recreation
Fish, Wildlife, and Special Status Species	Visual Resources
Wild Horses and Burros	Special Designations
Water Resources	Soils
Lands with Wilderness Characteristics	Air Quality
Climate Change	

3.3 GREATER SAGE-GROUSE AND ITS HABITAT

The existing condition of Greater Sage-Grouse in the planning area is described in the 2015 Final EIS in Section 3.2; therefore, except as otherwise expressly indicated by new or updated information contained in this section, the affected environment for Greater Sage-Grouse described in the 2015 Final EIS is hereby incorporated by reference.

Since 2015, the BLM and Forest Service have been implementing the Greater Sage-Grouse conservation measures outlined in the 2015 Final EIS. In addition to working with partners, such as NDOW, CDFW, and USGS, to monitor the status of Greater Sage-Grouse populations in the planning area, the BLM has also been tracking human disturbance, wildland fire, and reclamation/restoration efforts in Greater Sage-Grouse habitat management areas.

3.3.1 Greater Sage-Grouse Population Status

Management Zones

The Nevada and Northeastern California sub-regional planning area includes Greater Sage-Grouse habitat and populations in three management zones (MZs), as delineated by Western Association of Fish and Wildlife Agencies (WAFWA). The boundaries of these MZs were delineated based on their ecological and biological attributes, rather than on arbitrary political boundaries (Stiver et al. 2006). Vegetation found in each management zone is similar, and Greater Sage-Grouse and its habitat in these areas are likely to respond similarly to environmental factors and management actions.

MZs in the Nevada and Northeastern California sub-region are as follows:

- MZ III—Southern Great Basin (includes Utah, Nevada, and California)
- MZ IV—Snake River Plain (includes Idaho, Utah, Nevada, and Oregon)
- MZ V—Northern Great Basin (includes Oregon, California, and Nevada)

These MZs and their aggregate populations and subpopulations in the Nevada and Northeastern California sub-region are described in Table 3-5 and Figure 3-3 of the 2015 Nevada and Northeastern California Land Use Plan Amendments and Final EIS (BLM 2015).

As of 2017, there were 717 leks classified as active and 341 leks classified as inactive, as shown in **Table 3-3**, below.

Table 3-3
Leks in Population/Subpopulations

Population/ Subpopulation	Active	Inactive	Total
Management Zone III			
Central Nevada	185	83	269
Northwestern Interior Nevada	0	8	8
Quinn Canyon Range Nevada	N/A	N/A	N/A
Southeastern Nevada	132	22	154
Management Zone IV			
North-central Nevada	60	40	100
Northeastern Nevada	195	82	277
Management Zone V			
Klamath-Oregon/California	1	0	1
Lake Area Oregon-NE California/NW Nevada	99	84	183
South-central Oregon/North-central Nevada	39	22	61
Warm Springs Valley Nevada	6	0	6

Sources: NDOW, CDFW and WAFWA 2017

In a recent publication by USGS (Coates et al. 2017), data from monitored GSRG lek sites across Nevada and Northeastern California from 2000 to 2016 were used to estimate annual rates of change in Greater Sage-Grouse populations. As of 2016, populations across Nevada and Northeastern California have declined at an average rate of 3.86 percent annually over the last 17 years. This estimated rate of population decline corresponds to other estimates documented for Greater Sage-Grouse in the Great Basin (Garton et al. 2011; Coates et al. 2016).

Overall results indicate that localized fluctuations in lek attendance have occurred, but overall numbers of active and inactive leks have been relatively stable. Of all the MZs within the sub-region, MZ III had the most number of leks in decline.

3.4 WILDLAND FIRE AND HABITAT TREATMENT

The wildland fire threat was discussed in the 2015 Final EIS (Section 3.2.3). From 2015 to 2017 there have been additional large-scale wildfires within the decision area (**Table 3-4**, below). These wildfires burned approximately 1.3 million acres of Greater Sage-Grouse PHMA, GHMA, and OHMA. During that same time, approximately 175,546 acres in Greater Sage-Grouse habitat management areas have been treated to improve habitat for the species (see **Table 3-5** and **Table 3-6**).

Since the 2015 plan, more habitat in Greater Sage-Grouse habitat management areas has been lost to wildfire than has been gained through treatment; however, the BLM intends to implement more habitat improvements, per decisions in the 2015 Final EIS. Projects such as the Great Basin Ecosystem Strategy will further enhance the tools and priorities for implementing these activities. Under these projects, two programmatic EISs are being prepared for fuel breaks, fuels reduction, and rangeland restoration. See Wildland Fires, Section 3.7, from 2015 Final EIS for acres burned by decade.

Table 3-4
Wildland Fire Statistics—Greater Sage-Grouse Habitat Acres Burned

State	2015	2016	2017
Nevada	12,233	215,073	967,324
California	16,176	5,145	88,551
Total	**28,409**	**220,218**	**1,055,875**

Source: Greater Sage-Grouse Habitat Data for Wildland Fire Management Decision Making and Reporting of Acres Burned; Information Bulletin No. FA IB-2017-009; Bureau of Land Management

Table 3-5
Acres of Greater Sage-Grouse Conservation Actions in Nevada

Year	Conifer Removal	Fuelbreaks	Invasive Species Removal	Habitat Protection	Habitat Restoration	Total
2015	12,883	3,809	7,311	351	17,957	42,311
2016	19,785	6,655	10,956	644	14,753	52,793
2017[1]	40,386	4,455	2,265	12,561	1,378	61,045
Total	**73,054**	**14,919**	**20,532**	**13,556**	**34,088**	**156,149**

Source: National Fuels Reporting Operations Reporting System (NFPORS)

Table 3-6
Acres of Greater Sage-Grouse Conservation Actions in California

Year	Conifer Removal	Fuelbreaks	Invasive Species Removal	Habitat Protection	Habitat Restoration	Total
2015	5,403	217	2,545	1,360	0	9,525
2016	2,735	0	1,643	1,653	0	6,031
2017[1]	5,769	0	1,802	2,260	0	9,831
Total	**13,907**	**217**	**5,990**	**5,273**	**0**	**25,387**

Source: NFPORS 2017

3.5 HUMAN DISTURBANCE

Human disturbance was discussed in the 2015 Final EIS (Section 3.2.4, Regional Context [Infrastructure]). The BLM tracked human disturbance in PHMA from 2015 to 2017, in accordance with the Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment Record of Decision, Management Decision, Special Status Species 2 (BLM 2015, pgs. 2-6 to 2-8).

Human disturbance has incrementally increased over the Nevada and Northeastern California sub-region, with the greatest percentage increase of 0.12 and an average across all of the BSUs of 0.01 percent. The level of human disturbance in the Butte/Buck/White Pine BSU decreased by 62 acres (0.01 percent) during this time.

3.6 SOCIOECONOMICS

Since 2015, socioeconomic conditions in Nevada have changed to some degree. Income from non-service industries has fallen slightly, while service industry jobs and income have increased at a steady rate.

Many industry sectors remained mostly steady from 2014 to 2016, the most recent year for which verified data are available. For example, earnings from the mining industry, including fossil fuels, grew by slightly more than 1 percent during that period. In contrast, earnings from government (which includes federal, military, state, and local government employment, as well as government enterprise) grew by 6.1 percent; earnings from the medical and social assistance industries grew by 11.5 percent, and earnings from the construction industry increased by more than 26 percent from 2014 to 2016. Construction has been in recovery, after falling by more than 63 percent from 2006 to 2013.

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Chapter 4. Environmental Consequences

4.1 Introduction

This chapter presents the anticipated direct and indirect impacts on the human and natural environment from implementing the alternatives in **Chapter 2**. The purpose of this chapter is to describe to the decision-maker and the public how the environment could change if either of the alternatives were implemented. It is meant to aid in the decision between continuing current management (No-Action Alternative), as directed in the 2015 Final EIS, or adopting the Management Alignment Alternative to incorporate the best available science, better balance multiple use, and improve compatibility between federal management plans and state conservation plans and strategies.

This chapter is organized by topic, based on the affected resources identified in **Chapters 1** and **3**. Only those issues listed in **Table 1-2** were carried forward for analysis.

Impact analysis is a cause-and-effect process. The detailed impact analyses and conclusions are based on the following:

- The BLM planning team's knowledge of resources and the project area
- Literature reviews
- Information provided by experts in the BLM, other agencies, cooperating agencies, interest groups, and concerned citizens

The baseline used for the impact analysis is the current condition or situation, as described in **Chapter 3**. Impacts on resources and resource uses are analyzed and discussed, commensurate with resource issues and concerns identified through the NEPA process. At times, impacts are described in qualitative terms or using ranges of potential impacts.

4.2 Analytical Assumptions

Several overarching assumptions have been made in order to facilitate the analysis of the potential impacts. These assumptions set guidelines and provide reasonably foreseeable projected levels of development that would occur in the planning area during the planning period. These assumptions should not be interpreted as constraining or redefining the management objectives and actions proposed for each alternative, as described in **Chapter 2**.

The following general assumptions apply to all resource categories; any specific resource assumptions are provided in the methods of analysis section for that resource:

- Sufficient funding and personnel would be available for implementing the final decision.
- Implementation-level actions necessary to execute the RMP-level decisions in this RMPA/EIS would be subject to further environmental review, including that under NEPA.
- Direct impacts of implementing the RMPA would primarily occur on public lands administered by the BLM in the planning area. Indirect impacts of implementing the RMPA could occur on either BLM-administered lands, or adjacent lands, regardless of ownership/administration. The discussion of impacts is based on best available data. Knowledge of the planning area, decision

area, and professional judgment, based on observation and analysis of conditions and responses in similar areas, are used for environmental impacts where data are limited.

- Restrictions (such as siting, design, and mitigation measures) would apply, where appropriate, to surface-disturbing activities associated with land use authorizations and permits issued on BLM-administered lands and federal mineral estate.
- GIS data have been used in developing acreage calculations and to generate the figures in **Appendix A**. Calculations depend on the quality and availability of data. Acreage figures and other numbers are approximate projections for comparison and analysis only; readers should not infer that they reflect exact measurements or precise calculations. In the absence of quantitative data, best professional judgment was used. Impacts were sometimes described using ranges of potential impacts, or they were described qualitatively, when appropriate.

4.3 General Method for Analyzing Impacts

Potential impacts are described in terms of type, context, duration, and intensity, which are generally defined below.

Type of impact—Impacts are characterized using the indicators described in the 2015 Final EIS (where applicable). The presentation of impacts for key planning issues is intended to provide the BLM decision-maker and reader with an understanding of the multiple use trade-offs associated with each alternative.

Context—This describes the area or site-specific, local, planning area-wide, or regional location where the impact would occur. Site-specific impacts would occur at the location of the action; local impacts would occur in the general vicinity of the action area; planning area-wide impacts would affect a greater portion of decision area lands in Nevada and northeast California; and regional impacts would extend beyond the planning area boundaries.

Duration—This describes the associated time period of an impact, either short term or long term. Unless otherwise noted, short term is defined as anticipated to begin and end within the first 5 years after the action is implemented; long term is defined as lasting beyond 5 years to the end of or beyond the life of this RMPA/EIS.

Intensity—Rather than categorize impacts with qualitative statements (e.g., major, moderate, or minor), this analysis discusses impacts using quantitative data wherever possible.

Direct and indirect impacts—Direct impacts are caused by an action or implementation of an alternative and occur at the same time and place; indirect impacts result from implementing an action or alternative but usually occur later in time or are removed in distance and are reasonably certain to occur.

For ease of reading, the impacts of the management actions for a particular alternative on a specific resource are generally compared with the status quo or baseline for that resource; however, in order to properly and meaningfully evaluate the impacts under each alternative, its expected impacts should be measured against those projected to occur under the No-Action Alternative. This alternative is the baseline for comparing the alternatives to one another. This is because it represents what is anticipated to occur should the RMPA not take place.

Irreversible and irretrievable commitment of resources is discussed in **Section 4.12**, below. Irreversible commitments of resources result from actions in which resources are considered permanently changed; irretrievable commitments of resources result from actions in which resources are considered permanently lost.

4.3.1 Impacts from No-Action Alternative

The impacts of the No-Action Alternative, or current management, of this RMPA/EIS were analyzed as the Proposed Plan in the 2015 Final EIS, and within the various alternatives analyzed in the Sagebrush Focal Areas Withdrawal Draft EIS (BLM 2016). The BLM has reviewed new information to verify that the analysis in the 2015 Final EIS remains sound; therefore, impacts from implementing the No-Action Alternative are substantially the same as those analyzed in the 2015 Final EIS.

Table 4-1, below, shows where information on the impacts of the No-Action Alternative can be found.

Table 4-1
Environmental Consequences for the No-Action Alternative Incorporated by Reference

Issue	Resource / Resource Use	Location of Impact Analysis from the 2015 Final EIS
Habitat Management Area Boundaries	Greater Sage-Grouse	The impacts on Greater Sage-Grouse and its habitat through the management of established habitat management areas are discussed in Section 4.4.10 of the 2015 Final EIS beginning on page 4-51.
	Vegetation	The impacts on Vegetation through the management of the established habitat management areas are discussed in Section 4.5.10 of the 2015 Final EIS beginning on page 4-91.
	Land Use and Realty	The impacts on Land Use and Realty through the management of the established habitat management areas are discussed in Section 4.13.10 of the 2015 Final EIS beginning on page 4-269.
	Renewable Energy	The impacts on Renewable Energy through the management of the established habitat management areas are discussed in Section 4.14.10 of the 2015 Final EIS beginning on page 4-284.
	Minerals and Energy	The impacts on Minerals and Energy through the management of the established habitat management areas are discussed in Section 4.15 of the 2015 Final EIS beginning on page 4-286.
	Socioeconomics	The impacts on Socioeconomics through the management of the established habitat management areas are discussed in Section 4.21 of the 2015 Final EIS beginning on page 4-402.
	Livestock Grazing	The impacts on Livestock Grazing through the management of the established habitat management areas are discussed in Section 4.10.10 of the 2015 Final EIS beginning on page 4-232.
	Comprehensive Travel Management	The impacts on Comprehensive Travel Management through the management of the established habitat management areas are discussed in Section 4.12.10 of the 2015 Final EIS beginning on page 4-252.
Sagebrush Focal Areas (SFA)	Greater Sage-Grouse	The impacts on Greater Sage-Grouse from withdrawing sagebrush focal areas from the Mining Law of 1872 are discussed in the 2016 SFA Withdrawal EIS, Section 4.5 of the 2015 Final EIS beginning on page 4-82.
	Vegetation	The impacts on Vegetation from withdrawing sagebrush focal areas from the Mining Law of 1872 are discussed in Section 4.5.10 of the 2015 Final EIS beginning on page 4-91 and the 2016 SFA Withdrawal EIS, Section 4.4 Vegetation, including Special Status Plants, beginning on page 4-68.

Table 4-1
Environmental Consequences for the No-Action Alternative Incorporated by Reference

Issue	Resource / Resource Use	Location of Impact Analysis from the 2015 Final EIS
	Land Use and Realty	The impacts of establishing sagebrush focal areas on Land Use and Realty are discussed in Section 4.13.10 of the 2015 Final EIS beginning on page 4-269.
	Renewable Energy	The impacts of establishing sagebrush focal areas on Renewable Energy are discussed in Section 4.14.10 of the 2015 Final EIS beginning on page 4-284.
	Minerals and Energy	The impacts of establishing sagebrush focal areas on Minerals and Energy are discussed in Section 4.15 of the 2015 Final EIS beginning on page 4-286 and the 2016 SFA Withdrawal EIS, Section 4.2 Geology and Mineral Resources, beginning on page 4-7.
	Socioeconomics	The impacts of establishing sagebrush focal areas on Socioeconomics are discussed in Section 4.21 of the 2015 Final EIS beginning on page 4-402 and the 2016 SFA Withdrawal EIS, Section 4.3 Social and Economic, beginning on page 4-20.
	Livestock Grazing	The impacts of establishing sagebrush focal areas on Livestock Grazing are discussed in Section 4.10.10 of the 2015 Final EIS beginning on page 4-232.
	Comprehensive Travel Management	The impacts of establishing sagebrush focal areas on Comprehensive Travel Management are discussed in Section 4.12.10 of the 2015 Final EIS beginning on page 4-252.
Adaptive Management	Greater Sage-Grouse	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Greater Sage-Grouse through the application of the established Adaptive Management Plan are discussed in Section 4.4.10 of the 2015 Final EIS beginning on page 4-51.
	Vegetation	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Vegetation through the application of the established Adaptive Management Plan are discussed in Section 4.5.10 of the 2015 Final EIS beginning on page 4-91.
	Land Use and Realty	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Land Use and Realty through the application of the established Adaptive Management Plan are discussed in Section 4.13.10 of the 2015 Final EIS beginning on page 4-269.
	Renewable Energy	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Renewable Energy through the application of the established Adaptive Management Plan are discussed in Section 4.14.10 of the 2015 Final EIS beginning on page 4-284.
	Minerals and Energy	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Minerals and Energy through the application of the established Adaptive Management Plan are discussed in Section 4.15 of the 2015 Final EIS beginning on page 4-286.
	Socioeconomics	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Socioeconomics through the application of the established Adaptive Management Plan are discussed in Section 4.21 of the 2015 Final EIS beginning on page 4-402.

Table 4-1
Environmental Consequences for the No-Action Alternative Incorporated by Reference

Issue	Resource / Resource Use	Location of Impact Analysis from the 2015 Final EIS
	Livestock Grazing	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Livestock Grazing through the application of the established Adaptive Management Plan are discussed in Section 4.10.10 of the 2015 Final EIS beginning on page 4-232.
	Comprehensive Travel Management	The adaptive management plan analyzed in 2015 can be found in Section 2.7.1 of the 2015 Final EIS. The impacts on Comprehensive Travel Management through the application of the established Adaptive Management Plan are discussed in Section 4.12.10 of the 2015 Final EIS beginning on page 4-252.
Allocation Exception Process	Greater Sage-Grouse	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Greater Sage-Grouse through the management of the established Allocation Exception Process are discussed in Section 4.4.10 of the 2015 Final EIS beginning on page 4-51.
	Vegetation	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Vegetation through the management of the established Allocation Exception Process are discussed in Section 4.5.10 of the 2015 Final EIS beginning on page 4-91.
	Land Use and Realty	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Land Use and Realty through the management of the established Allocation Exception Process are discussed in Section 4.13.10 of the 2015 Final EIS beginning on page 4-269.
	Renewable Energy	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Renewable Energy through the management of the established Allocation Exception Process are discussed in Section 4.14.10 of the 2015 Final EIS beginning on page 4-284.
	Minerals and Energy	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Minerals and Energy through the management of the established Allocation Exception Process are discussed in Section 4.15 of the 2015 Final EIS beginning on page 4-286.
	Socioeconomics	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Socioeconomics through the management of the established Allocation

Table 4-1
Environmental Consequences for the No-Action Alternative Incorporated by Reference

Issue	Resource / Resource Use	Location of Impact Analysis from the 2015 Final EIS
		Exception Process are discussed in Section 4.21 of the 2015 Final EIS beginning on page 4-402.
	Livestock Grazing	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Livestock Grazing through the management of the established Allocation Exception Process are discussed in Section 4.10.10 of the 2015 Final EIS beginning on page 4-232.
	Comprehensive Travel Management	A number of exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document under the heading Issue: Allocation Exception Process, under the No-Action Alternative. The impacts on Comprehensive Travel Management through the management of the established Allocation Exception Process are discussed in Section 4.12.10 of the 2015 Final EIS beginning on page 4-252.
Mitigation	Greater Sage-Grouse	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Greater Sage-Grouse through the management of the established mitigation are discussed in Section 4.4.10 of the 2015 Final EIS beginning on page 4-51. The Regional Mitigation Strategy is explained in Appendix I of the 2015 Final EIS.
	Vegetation	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Vegetation through the management of the established mitigation are discussed in Section 4.5.10 of the 2015 Final EIS beginning on page 4-91.
	Land Use and Realty	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Land Use and Realty through the management of the established mitigation are discussed in Section 4.13.10 of the 2015 Final EIS beginning on page 4-269.
	Renewable Energy	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Renewable Energy through the management of the established mitigation are discussed in Section 4.14.10 of the 2015 Final EIS beginning on page 4-284.
	Minerals and Energy	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Minerals and Energy through the management of the established mitigation are discussed in Section 4.15 of the 2015 Final EIS beginning on page 4-286.
	Socioeconomics	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Socioeconomics through the management of the established mitigation are discussed in Section 4.21 of the 2015 Final EIS beginning on page 4-402.
	Livestock Grazing	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Livestock Grazing through the

Table 4-1
Environmental Consequences for the No-Action Alternative Incorporated by Reference

Issue	Resource / Resource Use	Location of Impact Analysis from the 2015 Final EIS
		management of the established mitigation are discussed in Section 4.10.10 of the 2015 Final EIS beginning on page 4-232.
	Comprehensive Travel Management	The mitigation strategy that constitutes the action under this alternative is described in Section 2.7.3 of the 2015 Final EIS beginning on page 2-88. The impacts on Comprehensive Travel Management through the management of the established mitigation are discussed in section 4.12.10 of the 2015 Final EIS beginning on page 4-252.
Seasonal Timing Restrictions	Greater Sage-Grouse	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing restrictions begins on page 2-23. The impacts on Greater Sage-Grouse through the management of the established seasonal timing restrictions are discussed in Section 4.4.10 of the 2015 Final EIS beginning on page 4-51.
	Vegetation	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing restrictions begins on page 2-23. The impacts on Vegetation through the management of the established seasonal timing restrictions are discussed in Section 4.5.10 of the 2015 Final EIS beginning on page 4-91.
	Land Use and Realty	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing restrictions begins on page 2-23. The impacts on Land Use and Realty through the management of the established seasonal timing restrictions are discussed in Section 4.13.10 of the 2015 Final EIS beginning on page 4-269.
	Renewable Energy	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing restrictions begins on page 2-23. The impacts on Renewable Energy through the management of the established seasonal timing restrictions are discussed in Section 4.14.10 of the 2015 Final EIS beginning on page 4-284.
	Minerals and Energy	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing restrictions begins on page 2-23. The impacts on Minerals and Energy through the management of the established seasonal timing restrictions are discussed in Section 4.15 of the 2015 Final EIS beginning on page 4-286.
	Socioeconomics	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing

Table 4-1
Environmental Consequences for the No-Action Alternative Incorporated by Reference

Issue	Resource / Resource Use	Location of Impact Analysis from the 2015 Final EIS
		restrictions begins on page 2-23. The impacts on Socioeconomics through the management of the established seasonal timing restrictions are discussed in Section 4.21 of the 2015 Final EIS beginning on page 4-402.
	Livestock Grazing	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing restrictions begins on page 2-23. The impacts on Livestock Grazing through the management of the established seasonal timing restrictions are discussed in Section 4.10.10 of the 2015 Final EIS beginning on page 4-232.
	Comprehensive Travel Management	The seasonal timing restrictions are tied to specific seasonal habitat needs for Greater Sage-Grouse. The discussion related to these restrictions is found in Management Action SSS-2 of the 2015 Final EIS beginning on page 2-20. The discussion specific to seasonal timing restrictions begins on page 2-23. The impacts on Comprehensive Travel Management through the management of the established seasonal timing restrictions are discussed in Section 4.12.10 of the 2015 Final EIS beginning on page 4-252.
Habitat Objectives	Greater Sage-Grouse	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Greater Sage-Grouse through the management of the established Habitat Objectives are discussed in Section 4.4.10 of the 2015 Final EIS beginning on page 4-51.
	Vegetation	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Vegetation through the management of the established Habitat Objectives are discussed in Section 4.5.10 of the 2015 Final EIS beginning on page 4-91.
	Land Use and Realty	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Land Use and Realty through the management of the established Habitat Objectives are discussed in Section 4.13.10 of the 2015 Final EIS beginning on page 4-269.
	Renewable Energy	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Renewable Energy through the management of the established Habitat Objectives are discussed in Section 4.14.10 of the 2015 Final EIS beginning on page 4-284.
	Minerals and Energy	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Minerals and Energy through the management of the established Habitat Objectives are discussed in Section 4.15 of the 2015 Final EIS beginning on page 4-286.
	Socioeconomics	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Socioeconomics through the management of the established Habitat Objectives are discussed in Section 4.21 of the 2015 Final EIS beginning on page 4-402.

Table 4-1
Environmental Consequences for the No-Action Alternative Incorporated by Reference

Issue	Resource / Resource Use	Location of Impact Analysis from the 2015 Final EIS
	Livestock Grazing	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Livestock Grazing through the management of the established Habitat Objectives are discussed in Section 4.10.10 of the 2015 Final EIS beginning on page 4-232.
	Comprehensive Travel Management	The habitat objectives are discussed in Section 2.6.2 under Objective SSS-1 and the Habitat Objectives table in the 2015 Final EIS beginning on page 2-17. The impacts on Comprehensive Travel Management through the management of the established Habitat Objectives are discussed in Section 4.12.10 of the 2015 Final EIS beginning on page 4-252.

4.3.2 Impacts from Management Alignment Alternative

Table 4-2, below, summarizes if and how decisions in the Management Alignment Alternative were considered in the 2015 Final EIS. Issues needing further analysis are analyzed under the resource/resource use headings in this chapter.

Table 4-2
Impacts from Management Alignment Alternative

Plan Alignment Issue	Considered in 2015 Final EIS
Modifying Habitat Management Area Boundaries	As part of the proposed action for Alternative E in the 2015 Final EIS, as defined in Action E-SSS-AM 9 found on page 2-197: "Greater Sage-Grouse management categories must be evaluated every 3-5 years, based on new or improved spatial data through a scientifically based, peer-reviewed process. Adjustments of the mapped management categories within the population management zone would be made without further analysis." The impacts on resources associated with Alternative E are contained in Chapter 4 of the 2015 Final EIS. Note: If the most current Greater Sage-Grouse habitat management area boundaries are adopted, the following changes would occur: PHMA 44,000-acre decrease GHMA 27,300-acre increase OHMA 1,007,600-acre decrease
Removing Sagebrush Focal Areas	Alternatives B through F in the 2015 Final EIS did not include SFAs as a management area. The impacts on resources associated with Alternatives B through F are contained in Chapter 4 of the 2015 Final EIS.
Adaptive Management	Adaptive Management was analyzed as part of the 2015 Final EIS; see Section 2.7.1 on page 2-75.
Allocation Exception Process	Exceptions were outlined in the 2015 Final EIS according to specific resource uses or conditions. These are summarized in Section 2.5 of this document (No-Action Alternative) under the heading Issue: Allocation Exception Process. Although specific exceptions, modifications, and waivers were only analyzed for certain land uses, the 2015 Final EIS analyzed a range of alternatives that took into account the various impacts from different types of management actions associated with these land use allocations.

Table 4-2
Impacts from Management Alignment Alternative

Plan Alignment Issue	Considered in 2015 Final EIS
	Note: The No-Action Alternative of the 2015 Final EIS allowed for the disposal of lands within Greater Sage-Grouse habitat management areas.
Mitigation	The mitigation standard (net conservation gain) was analyzed in Alternative E of the 2015 Final EIS, including the use of the Nevada Conservation Credit System. See Sections 4.4.8, page 4-42; Section 4.5.8, page 4-85; Section 4.6.8, page 4-126; Section 4.9.7, page 4-186; Section 4.13.8, page 4-265; and Section 4.15, page 4-286.
Seasonal Timing Restrictions	Applying limited seasonal timing restrictions was analyzed in Alternative C of the 2015 Final EIS. See Sections 4.4.6; 4.5.6; 4.6.6; 4.9.5; 4.10.6; 4.13.6; 4.14.6; and 4.18.6.
Modifying Habitat Objectives	The Habitat Objectives for Greater Sage-Grouse were analyzed in the 2015 Final EIS. See Section 2.6.2, page 2-17 for additional information and Sections 4.4.7; 4.4.8; 4.4.10; and 4.5.9 for the analysis of Habitat Objectives under the Proposed Plan and Alternatives A, B, D, E, and F of the 2015 Final EIS.

4.4 INCOMPLETE OR UNAVAILABLE INFORMATION

CEQ established implementing regulations for NEPA, requiring that a federal agency identify relevant information that may be incomplete or unavailable for evaluating reasonably foreseeable significant adverse impacts 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, unless the cost of obtaining such information is exorbitant. Knowledge and information is, and would 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 2015 Final EIS as well as this RMPA/EIS. The BLM made a considerable effort to acquire and convert resource data into digital format from the BLM and outside sources (e.g., NDOW, USGS, etc.).

Under the FLPMA, the inventory of public land resources is ongoing and continuously updated; however, certain information was unavailable for use in developing the RMPA. This was because inventories either had not been conducted or were incomplete.

Some of the major types of data that are incomplete or unavailable are the following:

- Comprehensive planning area-wide inventory of wildlife and special status species occurrence and condition
- GIS data used for disturbance calculations on private lands
- Site-specific surveys of cultural and paleontological resources

For these resources, estimates were made concerning their number, type, and significance, based on previous surveys and existing knowledge.

In addition, some impacts could not be quantified, given the proposed management actions. Where there was this gap, impacts were projected in qualitative terms or, in some instances, were described as unknown. Subsequent site-specific, project-level analyses would provide the opportunity to collect and examine site-specific inventory data to determine appropriate application of RMP-level guidance. In

addition, the BLM and other agencies in the planning area continue to update and refine information used to implement this plan.

4.5 IMPACTS ON GREATER SAGE-GROUSE AND GREATER SAGE-GROUSE HABITAT

4.5.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

Under this alternative, 2,767,552 acres of Greater Sage-Grouse habitat management areas would be designated as SFAs and would be recommended for withdrawal from the Mining Law of 1872 for 20 years, subject to valid existing rights. The potential for future mining operations that would affect Greater Sage-Grouse and its habitat would be reduced because additional protections from habitat disturbance and fragmentation associated with mining would be placed on some of the most important landscapes for Greater Sage-Grouse conservation (as identified by the USFWS; BLM 2016).

Based on the reasonably foreseeable development (RFD) scenario, estimates for the number and size of future mines and exploration projects in the planning area over the proposed 20-year withdrawal would not be substantially different (see **Table 4-3** below). The difference, therefore, between the nature and type of effects on Greater Sage-Grouse described in Section 4.4.10 of the Final EIS (BLM 2015) would be negligible. A mineral withdrawal within the SFA could have beneficial impacts on Greater Sage-Grouse by potentially reducing mining activities that may cause disturbance to Greater Sage-Grouse and its habitat within and adjacent to the withdrawal areas.

Table 4-3
Estimated Number of Mines and Exploration Projects

State	Inclusion of SFAs		No SFAs	
	Mines	Exploration	Mines	Exploration
Nevada	1	32	3	78
California	N/A	N/A	N/A	N/A

Source: BLM 2016

4.5.2 Impacts of Management Alignment Alternative

Adopting the changes proposed in the Management Alignment Alternative would be consistent with both Nevada and California's overall objective to provide for the long-term conservation of Greater Sage-Grouse by protecting the habitat upon which the species depends. Despite minor differences between the actions described in this alternative and those analyzed in the 2015 Final EIS, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.4 of the 2015 Final EIS (BLM 2015). Alignment with the states' conservation and management strategies will improve coordination and opportunities for enhanced management.

The Management Alignment Alternative proposes to update the habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. This would ensure that current and future renditions of habitat management area boundaries accurately reflect Greater Sage-Grouse habitat on the ground and guide management actions appropriately. As the boundaries are updated, the land use plan allocations associated with each habitat management area (see **Table 2-1**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). This

would help to conserve the species by ensuring allocations and any of their associated restrictions are applied in the appropriate areas, while allowing infrastructure and economic development to occur in areas that would not affect the species.

The allocation exception process would be updated and standardized, to allow for the consideration of projects within priority and general habitat management areas, provided they meet the prescribed criteria, as described in **Table 2-2**. Because these criteria ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety, no new impacts on Greater Sage-Grouse and its habitat are anticipated above those analyzed in the 2015 Final EIS.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. This update would ensure that the BLM is utilizing the best available data and decision support tools to guide management at the appropriate spatial scale,. Impacts on Greater Sage-Grouse and its habitat would be beneficial as a result of this update to adaptive management triggers, providing the ability to detect declining populations and/or habitat and change management on the ground.

The State of Nevada adopted a mitigation standard of net benefit (net conservation gain). Consistent with the State approach, this standard would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix F**. While this update would not change the mitigation standard, the improved coordination among state and federal partners, along with using consistent metrics for tracking changes in habitat quality and quantity over time, is anticipated to benefit the species through enhanced knowledge of baseline conditions and restoration/reclamation/mitigation effectiveness.

Beneficial impacts were identified for addressing seasonal timing restrictions and modifying indicators and their values in the Habitat Objectives table in the 2015 Final EIS, in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. The criteria established for modifying or removing seasonal timing restrictions ensure that these protections are still applied where applicable and allow for beneficial Greater Sage-Grouse projects (i.e., juniper and/or pinyon removal, riparian restoration projects, reseeding, etc.) to be implemented in an expedited manner. Modifying the Habitat Objectives would improve the efficiency of Greater Sage-Grouse habitat management by using the most current best available science to inform Greater Sage-Grouse habitat requirements.

SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying Greater Sage-Grouse habitat management area and associated allocations and management decisions (e.g., PHMA). Impacts on Greater Sage-Grouse would be consistent with those described in 2015 because SFAs presented no additional conservation and management restrictions above PHMA with the exception of the mineral withdrawal recommendation discussed above. Given the subsequent information obtained through the 2016 Sagebrush Focal Area Withdrawal EIS's associated Mineral Potential Report and Socioeconomic Impacts Analysis (BLM 2016), the October 4, 2017, *Notice of Cancellation of Withdrawal Application and Withdrawal Proposal* explained that "the BLM determined the proposal to withdraw 10 million acres was unreasonable in light of the data that showed that mining affected less than 0.1 percent of Greater Sage-Grouse-occupied range."

4.6 IMPACTS ON VEGETATION AND SOILS

4.6.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

Under this alternative, 2,767,552 acres of Greater Sage-Grouse habitat management areas would be designated as SFAs, and would be recommended for withdrawal from the Mining Law of 1872 for 20 years, subject to valid existing rights. Under this alternative, less mining activity would be authorized (see **Table 4-3**, above), thus reducing the overall potential for disturbance associated with mining activities.

The reduction in overall disturbance would provide a positive benefit to vegetation and soils; however, because localized disturbance from mining activities requires reclamation and is only one factor affecting the extent and condition of vegetation and soils, the designation of SFAs is unlikely to result in a substantially different outcome for vegetation and soils as those described in Section 4.5.10 of the 2015 Final EIS.

4.6.2 Impacts of Management Alignment Alternative

Adopting the changes proposed in the Management Alignment Alternative would not substantially alter vegetation and soil resources because they would continue to be managed according to their underlying habitat management area and associated allocations and management decisions (e.g., PHMA). Despite minor differences between the actions described in this alternative and those analyzed in the 2015 Final EIS, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.5 of the 2015 Final EIS (BLM 2015).

The Management Alignment Alternative proposes to update the habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. The allocations associated with each habitat management area (**Table 2-2**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). The allocation exception process would be updated and standardized, as described in **Table 2-2**, to allow for the consideration of projects within habitat management areas, provided they meet prescribed criteria.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix F**. Seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying habitat management area and associated allocations and management decisions (e.g., PHMA).

4.7 IMPACTS ON LAND USE AND REALTY

4.7.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

The designation of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872. Because this would not alter the underlying allocations for land use and realty associated with

Greater Sage-Grouse habitat management areas, the nature and type of effects on land use and realty described in Section 4.13.10 of the Final EIS (BLM 2015) would be the same as under this alternative.

4.7.2 Impacts of Management Alignment Alternative

Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where land use and realty allocations are applied. Given the relatively minor shift in PHMA (-0.5 percent) and GHMA (+0.5 percent), these changes would not result in discernible differences from the No-Action Alternative. The decrease in OHMA (-17 percent) would have negligible impacts on land use and realty, as no allocation decisions are tied to OHMA; therefore, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.13 of the 2015 Final EIS (BLM 2015).

The Management Alignment Alternative proposes to update the habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. The land use plan allocations associated with each habitat management area (**Table 2-2**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). The allocation exception process would be updated and standardized, as described in **Table 2-2**, to allow for the consideration of projects within habitat management areas, provided they meet the prescribed criteria.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix F**. Seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying habitat management area designation and associated allocations and management decisions (e.g., PHMA).

4.8 Impacts on Renewable Energy Resources

4.8.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

The designation of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872. Because this would not alter the underlying allocations for renewable energy resources associated with Greater Sage-Grouse habitat management areas, the nature and type of effects on renewable energy resources described in Section 4.14.10 of the Final EIS (BLM 2015) would be the same as under this alternative.

4.8.2 Impacts of Management Alignment Alternative

Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where renewable energy allocations are applied. Given the relatively minor shift in PHMA (-0.5 percent) and GHMA (+0.5 percent), these changes would not result in discernible differences from the No-Action Alternative. The decrease in OHMA (-17 percent) would make additional areas available for solar development, but this is not expected to result in increased

development proposals based on the reasonably foreseeable development scenarios discussed in the 2015 Final EIS.

Therefore, the difference between the nature and type of impacts described would not be discernable without specific, new applications or project proposals, regarding development in those areas. These impacts are discussed in Section 4.14 of the 2015 Final EIS (BLM 2015).

The Management Alignment Alternative proposes to update the habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. The land use plan allocations associated with each habitat management area (**Table 2-2**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). The allocation exception process would be updated and standardized, as described in **Table 2-2**, to allow for the consideration of projects within designated habitat management areas, provided they meet prescribed criteria.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix F**. Seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying habitat management area designation and associated allocations and management decisions (e.g., PHMA).

4.9 IMPACTS ON MINERALS AND ENERGY

4.9.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

The nature and type of effects on leasable minerals (geothermal and oil and gas), salable minerals, and solid (nonenergy) leasable minerals as described in Section 4.15.10 of the Final EIS (BLM 2015) would be the same. The inclusion of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872, which would not affect the land use allocations associated with leasable minerals.

The withdrawal of 2,767,552 acres of BLM-administered lands in Nevada from the Mining Law of 1872 for a period of 20 years would reduce the estimated number of future mines and exploration projects in the state (BLM 2016). Because this withdrawal would not apply to valid existing rights, the designation of SFAs is only expected to reduce the number of new mines from three down to one during the initial 20-year withdrawal. As identified in Table 4-7 of the Sagebrush Focal Areas Withdrawal Draft Environmental Impact Statement (BLM 2016), exploration projects would see a sharper decline with the inclusion of SFAs, dropping from an estimated 78 new projects down to 32 during the initial 20-year withdrawal.

When compared with the Management Alignment Alternative, which does not include SFAs, the withdrawal of 2,767, 552 acres to locatable minerals would reduce access and availability of geology and mineral resources in Nevada because the number of new mines would be reduced by 33 percent and the number of exploration projects would be reduced by 41 percent (BLM 2016). The reduction in

mining activity would also result in socioeconomic impacts, which are discussed below in **Section 4.10.1**.

4.9.2 Impacts of Management Alignment Alternative

Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where minerals and energy allocations are applied. Given the relatively minor shift in PHMA (-0.5 percent) and GHMA (+0.5 percent), these changes would not result in discernible differences from the No-Action Alternative. The decrease in OHMA (-17 percent) would be negligible, as no allocation decisions are tied to OHMA; therefore, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.15 of the 2015 Final EIS (BLM 2015).

The Management Alignment Alternative proposes to update the Greater Sage-Grouse habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. The land use plan allocations associated with each habitat management area (**Table 2-2**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). The allocation exception process would be updated and standardized, as described in **Table 2-2**, to allow for the consideration of projects within Greater Sage-Grouse habitat management areas, provided they meet prescribed criteria.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix F**.

Seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying habitat management area designation and associated allocations and management decisions (e.g., PHMA).

4.10 Impacts on Socioeconomics

4.10.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

The withdrawal of 2,767,552 acres of BLM-administered lands in Nevada from the Mining Law of 1872 for a period of 20 years would have additional socioeconomic impacts beyond those described in Section 4.21 and 4.22 of the Final EIS (BLM 2015). Based on the RFD scenario presented in the 2016 Sagebrush Focal Area DEIS, withdrawal would lead to broad economic impacts on the national and international mining industry (BLM 2016). While extensive areas of BLM-administered lands in Nevada would remain open to mining, the mining industry could be adversely affected from having less potential locations to explore and develop.

The economic impacts in Nevada would differ considerably depending on whether the one new mine that was developed was a large gold/silver mine or a smaller barite mine. The best estimate is that future mines would support $133 million in annual output, 267 to 388 jobs, and between $20.5 and $35.7

million in annual labor income. Relative to the Management Alignment Alternative, which does not include SFAs, withdrawal would support between 414 to 739 fewer jobs in Nevada (primarily Elko, Humboldt, and Washoe Counties), and between $25.8 and $56.5 million less in annual labor income (BLM 2016).

SFA designation would also reduce the number of exploration projects from 78 to 32 based on RFD scenarios for Nevada. As a result, exploration expenditures would be expected to fall by approximately 41 percent (approximately $3.8 million, as opposed to $9.1 million; BLM 2016). The reduction in future mining operations could have tangible social impacts in Elko and Humboldt Counties. In particular, the potential reduction in future employment opportunities in the mining sector could lead to an increase in future unemployment and/or potential future out migration of some of the workers in that sector. Intangible social impacts from the SFA designation could be larger than the tangible social impacts, particularly outside of Elko and Humboldt Counties.

4.10.2 Impacts of Management Alignment Alternative

Adopting the changes proposed in the Management Alignment Alternative, and not recommending SFAs for withdrawal, could lead to a corresponding increase in populations and employment for the counties that would see new mine development. Within the analysis area, the projected economic impacts from operation of future mines would result in 801 jobs, a labor income of $62 million, and approximately $12 million in state/local tax revenue. With the exception of not including SFAs, the difference between the nature and type of impacts described would be negligible given the similarity of the proposed management actions. These impacts are discussed in Section 4.21 of the 2015 Final EIS (BLM 2015) and 4.3.6 of the 2016 SFA DEIS (BLM 2016).

The Management Alignment Alternative proposes to update the habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. The land use plan allocations associated with each habitat management area (**Table 2-2**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). The allocation exception process would be updated and standardized, as described in **Table 2-2**, to allow for the consideration of projects within Greater Sage-Grouse habitat management areas, provided they meet prescribed criteria.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix D** (Adaptive Management).

Seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying habitat management area designation and associated allocations and management decisions (e.g., PHMA).

4.11 Impacts on Livestock Grazing

4.11.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

The designation of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872. Because this would not alter the underlying allocations for livestock grazing associated with Greater Sage-Grouse habitat management areas, the nature and type of effects on livestock grazing described in Section 4.10.10 of the Final EIS (BLM 2015) would be the same as under this alternative.

4.11.2 Impacts of Management Alignment Alternative

Despite minor differences between the actions described in the Management Alignment Alternative and those analyzed in the 2015 Final EIS, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.10 of the 2015 Final EIS (BLM 2015).

The Management Alignment Alternative proposes to update the habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. The land use plan allocations associated with each habitat management area (**Table 2-2**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). The allocation exception process would be updated and standardized, as described in **Table 2-2**, to allow for the consideration of projects within designated habitat management areas, provided they meet prescribed criteria.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix F**.

Seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying habitat management area designation and associated allocations and management decisions (e.g., PHMA).

4.12 Impacts on Comprehensive Travel Management

4.12.1 Impacts of the No-Action Alternative with the Inclusion of SFAs (No-Action Alternative)

The designation of SFAs would be specific to recommending lands for withdrawal from the Mining Law of 1872. Because this would not alter the underlying allocations for travel and transportation management associated with Greater Sage-Grouse habitat management areas, the nature and type of effects on travel and transportation management described in Section 4.12.10 of the Final EIS (BLM 2015) would be the same as under this alternative.

4.12.2 Impacts of Management Alignment Alternative

Adopting the changes proposed in the Management Alignment Alternative would result in slight boundary adjustments for where travel and transportation allocations are applied. Given the relatively minor shift in PHMA (-0.5 percent) and GHMA (+0.5 percent), these changes would not result in

discernible differences from the No-Action Alternative. The decrease in OHMA (-17 percent) would have negligible impacts on Comprehensive Travel Management, as no allocation decisions are tied to OHMA; therefore, the difference between the nature and type of impacts described would be negligible. These impacts are discussed in Section 4.12 of the 2015 Final EIS (BLM 2015).

The Management Alignment Alternative proposes to update the habitat management area boundaries for PHMA, GHMA, and OHMA to reflect the best available science, and outlines a process for periodically revising these boundaries in the future, as new data becomes available. The land use plan allocations associated with each habitat management area (**Table 2-2**) would be adjusted to match the newest habitat management area boundaries (Coates et al. 2016). The allocation exception process would be updated and standardized, as described in **Table 2-2**, to allow for the consideration of projects within habitat management areas, provided they meet the prescribed criteria.

Adaptive management hard and soft triggers would be updated as summarized and described in **Table 2-2** and **Appendix D**. The mitigation standard (net conservation gain) would be retained in the Management Alignment Alternative (and the No-Action Alternative), with additional clarification regarding implementation provided in **Appendix F**. Seasonal timing restrictions and modifying habitat objectives would be addressed in coordination with the USGS, NDOW, CDFW, USFWS, and others as described in **Table 2-2**. SFAs would not be designated under this alternative and therefore not recommended for withdrawal from the Mining Law of 1872; however, they would still be managed according to their underlying habitat management area designation and associated allocations and management decisions (e.g., PHMA).

4.13 Cumulative Effects Analysis

This section presents the anticipated cumulative impacts on the environment that could occur from implementing the alternatives presented in **Chapter 2**. A cumulative impact is the impact on the environment that results from the incremental impact of the action, when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such actions.

Cumulative impacts can result from individually minor, but collectively significant actions taking place over time. The cumulative impacts resulting from the implementation of the alternatives in this RMPA/EIS may be influenced by other actions, as well as activities and conditions on other public and private lands, including those beyond the planning area boundary. These include the concurrent Forest Service planning effort to amend land management plans for National Forests in Idaho, Montana, Nevada, Utah, Colorado, and Wyoming, which were previously amended in September 2015 to incorporate conservation measures to support the continued existence of the Greater Sage-Grouse. As a result, the sum of the effects of these incremental impacts involves determinations that often are complex, limited by the availability of information, and, to some degree, subjective.

This RMPA/EIS incorporates by reference the analysis in the 2015 Final EIS and the 2016 SFA Withdrawal Draft EIS, which comprehensively analyzed the cumulative impacts associated with these planning decisions under consideration in that process. The 2015 and 2016 EISs evaluated the cumulative impacts associated with the No-Action Alternative in this RMPA/EIS. The Management Alignment Alternative's effects are within the range of effects analyzed by the 2015 and 2016 EISs. The 2015 Final EIS is quite recent, and conditions in the Nevada and California Sub-region have not changed significantly

based on, in part, the USGS science review (see **Chapter 3**), as well the BLM's review of additional past, present, and reasonably foreseeable actions in 2018. Conditions on public land have changed little since the 2015 Final EIS, and the projections that were made regarding reasonably foreseeable future actions remain reasonable. Additionally, changes that have occurred on a smaller level, like local wildfires, received prompt responses. Since the nature and context of the cumulative effects scenario has not appreciably changed since 2015, and the 2015 analysis covered the entire range of the Greater Sage-Grouse, the cumulative effects analysis in the 2015 Final EIS applies to this planning effort and provides a foundation for the BLM to identify any additional cumulative impacts.

Table 4-4 shows the resource and location of applicable cumulative effects analysis from 2015 Final EIS. Unless otherwise addressed in this chapter, the cumulative effects of the alternatives analyzed in this Draft RMPA/EIS are covered by the 2015 Final EIS and the 2016 SFA Withdrawal Draft EIS. This includes the incremental impacts across the range of BLM- and Forest Service-administered lands being amended in concurrent plan amendment efforts. See the 2015 Final EIS for additional information.

Table 4-4
Cumulative Effects Analysis Incorporated by Reference

Resource Topic	Location of Cumulative Effects Analysis and Updated Impacts Analysis
Greater Sage-Grouse	Chapter 5, Section 5.1 of the 2015 Final EIS and Chapter 4 of the 2016 SFA Withdrawal DEIS, Section 4.5.9. Additional information regarding Greater Sage-Grouse is included in Chapter 4, Section 4.5 of this RMPA/EIS.
Vegetation and Soils	Chapter 5, Section 5.4 of the 2015 Final EIS and Chapter 4 of the 2016 SFA Withdrawal DEIS, Section 4.4.9. Additional information regarding Vegetation and Soils is included in Chapter 4, Section 4.6 of this RMPA/EIS.
Land Use and Realty	Chapter 5, Section 5.12 of the 2015 Final EIS. Additional information regarding Land Use and Realty is included in Chapter 4, Section 4.7 of this RMPA/EIS.
Renewable Energy	Chapter 5, Section 5.13 of the 2015 Final EIS. Additional information regarding Renewable Energy is included in Chapter 4, Section 4.8 of this RMPA/EIS.
Minerals and Energy	Chapter 5, Section 5.14 of the 2015 Final EIS and Chapter 4 of the 2016 SFA Withdrawal DEIS, Section 4.2.9. Additional information regarding Minerals and Energy is included in Chapter 4, Section 4.9 of this RMPA/EIS.
Socioeconomics	Chapter 5, Section 5.19 of the 2015 Final EIS and Chapter 4 of the 2016 SFA Withdrawal DEIS, Section 4.3.13. Additional information regarding Socioeconomics is included in Chapter 4, Section 4.10 of this RMPA/EIS.
Livestock Grazing	Chapter 5, Section 5.9 of the 2015 Final EIS. Additional information regarding Livestock Grazing is included in Chapter 4, Section 4.11 of this RMPA/EIS.
Comprehensive Travel Management	Chapter 5, Section 5.11 of the 2015 Final EIS. Additional information regarding Comprehensive Travel Management is included in Chapter 4, Section 4.12 of this RMPA/EIS.

Table 4-5 represents the past, present, and reasonably foreseeable actions across the entire range for Greater Sage-Grouse, which are separated by state. When assessing the cumulative impact of the RMPA/EIS on Greater Sage-Grouse and its habitat, there are multiple geographic scales that the BLM has considered, including the appropriate WAFWA management zone. WAFWA Management Zones have biological significance to Greater Sage-Grouse. Established and delineated in 2004 in the *Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats* (Connelly et al. 2004), the WAFWA management zones are based on floristic provinces that reflect ecological and biological issues and similarities, not political boundaries.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
Great Basin		
Habitat Restoration Programmatic EIS	Great Basin-wide programmatic habitat restoration project	Programmatic document effects will be realized when the field implements projects. This action will provide opportunities to improve and enhance habitat through vegetation treatments.
Fuel Breaks Programmatic EIS	Great Basin-wide programmatic habitat fuel break project	Programmatic document effects will be realized when the field implements projects. This action will help to reduce the loss of habitat due to catastrophic fires.
Northwest Colorado		
Integrated program of work	Habitat restoration and improvement projects	Potential localized, short-term, adverse impacts on Greater Sage-Grouse habitat, with beneficial long-term impacts. Actions are consistent with those foreseen in the 2015 Final EIS and are therefore within the range of cumulative effects analyzed in the 2015 Final EIS.
Travel management	White River Field Office: Area-wide travel designations being considered through an ongoing plan amendment Little Snake Field Office: Travel Management plan, identifying route designations consistent with criteria in the 2015 LUPA	These actions represent implementation of objectives from 2015 ARMPA to prioritize travel management in Greater Sage-Grouse habitat. Impacts are covered in the cumulative impacts of the 2015 Final EIS as reasonably foreseeable.
Continued oil and gas development	Disturbance and fragmentation	Development is consistent with the reasonably foreseeable development scenarios analyzed as part of the 2015 Final EIS and the associated field office RMPs. Additional impacts are expected to be within the range analyzed in 2015 Final EIS cumulative impacts analysis.
Plans		
Northwest Colorado Programmatic Vegetation Treatment Environmental Assessment (DOI-BLM-CO-N000-2017-0001-EA) decision	Programmatic NEPA document for streamlining habitat treatments in sagebrush	
Idaho		
Wildland fires 2015–2017	BLM: Past acres burned on BLM-administered land	534,744 acres of HMA burned since the ROD was signed in 2015. Post-fire rehabilitation was implemented. Too soon to determine the effectiveness of rehabilitation.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
Habitat treatments 2015–2017	BLM: Past habitat improvement projects	431,295 acres treated to restore or improve potential Greater Sage-Grouse habitat. Too soon to determine the effectiveness of treatment.
ROWs issued 2015–2017	BLM: Past ROWs issued on BLM-administered land	97 ROWs were issued in the planning area but fewer than 10 were in Greater Sage-Grouse habitat and resulted in new habitat loss. The effects were mitigated, using the mitigation hierarchy.
Soda Fire restoration	BLM: Present habitat restoration and fuel break construction	Restoration of previously burned Greater Sage-Grouse habitat. Results in a net benefit to Greater Sage-Grouse habitat.
Twin Falls Vegetation Project	BLM: Present habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions. Results in a net benefit to Greater Sage-Grouse habitat.
Idaho Falls Vegetation Project	BLM: Present habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions. Results in a net benefit to Greater Sage-Grouse habitat.
Natural gas-producing well near Weiser, Idaho	Private: Present active gas well on private land	Well is not in Greater Sage-Grouse habitat.
Conifer removal	NRCS: Present (2018) 1,862 acres of conifer removal on private land to improve Greater Sage-Grouse habitat	Conifer removal would improve Greater Sage-Grouse habitat and open areas to Greater Sage-Grouse that were previously unavailable because of juniper encroachment.
Weed treatments	NRCS: Present (2018) 95 acres of weed treatments on private land to reduce noxious weeds in Greater Sage-Grouse habitat	Weed treatments allow the native vegetation to outcompete weeds on treated acres.
Water development	NRCS: Present (2018) 21,308 feet of pipeline and 40 watering tanks installed on private land	Water development to move livestock out of natural springs and wet meadows.
Pending ROWs 2015–2017	BLM: Future ROW under analysis on BLM-administered land	123 ROW applications have been submitted and are pending review and analysis.
Boise District Vegetation Project	BLM: Future habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions result in a net benefit to Greater Sage-Grouse habitat.
Tristate Fuel Breaks Project	BLM: Future Greater Sage-Grouse habitat protection	Fuel breaks would protect habitat from wildfires. Some sagebrush may be lost during fuel break construction. Results in a net benefit to Greater Sage-Grouse habitat.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
Bruneau-Owyhee Sage-Grouse Habitat Project (BOSH)	BLM: Future removal of juniper encroaching into Greater Sage-Grouse habitat	BOSH would remove encroaching juniper from Greater Sage-Grouse habitat and render the habitat usable for Greater Sage-Grouse. Results in a net benefit to Greater Sage-Grouse habitat.
Conifer removal	NRCS: Future (2019–2023) 5,541 acres of conifer removal on private land to improve Greater Sage-Grouse habitat	Conifer removal would improve Greater Sage-Grouse habitat and open areas to Greater Sage-Grouse that were previously unavailable because of juniper encroachment.
Weed treatments	NRCS: Future (2019–2023) 357 acres of weed treatments on private land to reduce noxious weeds in Greater Sage-Grouse habitat	Weed treatments allow the native vegetation to outcompete weeds on treated acres.
Water development	NRCS: Present (2019–2023) 82,502 feet of pipeline and 46 watering tanks installed on private land	Water development to move livestock out of natural springs and wet meadows
Nevada and Northeast California		
Wildland Fires 2015-2017	BLM: Past – Acres burned on BLM administered land	Approximately 1.3 million acres of HMA burned between 2015-2017. Post fire restoration is being implemented as described below.
Fire Restoration (Emergency Stabilization and Rehabilitation)	BLM: Past and Present – Habitat restoration following wildland fires	1.8 million acres of habitat are either currently being treated or scheduled to be treated according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire.
Habitat Treatments	BLM: Past – Habitat improvement projects	Over 176,000 acres of Greater Sage-Grouse habitat was treated between 2015-2017 to maintain or improve conditions for Greater Sage-Grouse. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/restoration.
Land Use and Realty (issued and pending) 2015-2018	BLM: Past ROWs issued on BLM land	227 ROWs were issued in the planning area between 2015-2017. This includes amendments and reauthorizations, which may not have resulted in new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset using the mitigation hierarchy.
	BLM: Future pending	85 ROW applications are pending review and analysis. New ROWs would be held to the same mitigation standard under the management alignment alternative as described in the 2015 EIS, so no additional cumulative impacts beyond those described in 2015 are anticipated.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		In addition, BLM Nevada is also currently evaluating a proposed withdrawal for expansion of the Fallon Naval Air Station, Fallon Range Training Complex for defense purposes.
Oil and Gas	BLM: Past	BLM has offered for lease 425,711 acres in HMAs; 407,478 of that total was leased. Lease stipulations apply as described in the leases according to HMA category.
	BLM: Future pending	BLM has a scheduled lease sale in June 2018 that will offer 110,556 acres in HMAs. Lease stipulations would still be as described in 2015 until a decision is made on this draft.
Geothermal	BLM: Past and Present	Between 2015 and 2017, the BLM has offered for lease 24,468 acres within HMAs. Lease stipulations apply as described in the leases as analyzed in the 2015 Final EIS. 6 geothermal development permits have been approved and drilled on existing pads on existing leases. McGinness Hills Phase 3 EA authorized up to 42 acres of disturbance on existing leases, which will be offset according to the mitigation hierarchy.
Geothermal	Forest Service: Future Pending	6,901 acres of HMA pending forest service concurrence to lease, no pending geothermal development permits. If in HMAs, stipulations would be as described in 2015.
Locatable Mineral Projects	BLM: Past and Present	Between 2015 and 2017, the BLM has approved 18 new mines and/or expansions in the planning area, which is within the reasonably foreseeable development scenario outlined in the 2015 Final EIS (Section 5.1.16).
	BLM: Future Pending	The BLM is currently reviewing 20 plans of development for new mines or expansions, which is within the reasonably foreseeable development scenario outlined in the 2015 Final EIS (Section 5.1.16).
Fuel Breaks PEIS	BLM: Future – Great Basin-wide programmatic habitat fuel break project	Programmatic document effects will be realized when the field implements projects.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
Sage-Grouse Conservation	Forest Service- Future	Forest Service has indicated they will also be amending their land use plans. Specific details of their proposed changes are not yet known, but it is anticipated they propose alignment with state management plans and strategies.
Oregon		
Emergency Stabilization and Rehabilitation in South Bull Ridge RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2017).
Emergency Stabilization and Rehabilitation in South Ridge Bully Creek RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2015).
Emergency Stabilization and Rehabilitation in North Ridge Bully Creek RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2015).
Trout Creek Mountain	Grazing permit renewal	Grazing permit renewal allotment includes the East Fork Trout Creek RNA (2016).
Utah		
Fire and Fuels		
Wildland Fires 2015-2017	Acres burned on BLM administered land	Approximately 61,262 acres of PHMA/GHMA burned between 2015-2017. Post fire restoration is being implemented across all population areas that are affected. Effects: Potential loss of habitat value due to the removal of vegetation by fire.
Fire Restoration (Emergency Stabilization and Rehabilitation)	Acres of habitat restoration following wildland fires	Approximately 173,100 acres of HMA were treated/restored between 2015-2017. All of these acres are being restored in according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire across all population areas that are affected. Effect: Potentially improve or increase habitat due to vegetative restoration activities.
Vegetation		
Habitat Treatments	Acres of habitat improvement projects	Past: Over 219,000 acres of Greater Sage-Grouse habitat was treated between 2015-2017 to maintain or improve conditions for Greater Sage-Grouse across all populations. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/restoration.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		Effect: Potentially improve or increase habitat due to vegetative restoration activities. Future: Over 524,702 acres of Greater Sage-Grouse habitat is being proposed for treatment over the next 5 years. Treatments will include conifer removal, fuel breaks, invasive species removal and habitat protection/restoration across all populations. Effect: Potentially improve or increase habitat due to vegetative restoration activities.
Lands and Realty		
Land Use and Realty (issued and pending) 2015-2018	ROWs issued or pending on BLM land	Past: Issued 841 ROWs were issued in the planning area between 2015 and 2017. Effect: This includes amendments and reauthorizations, which may not have resulted in new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset using the mitigation hierarchy. Future: 380 ROW applications are pending review and analysis. Effect: New ROWs would be held to the same mitigation standard under the management alignment alternative as described in the 2015 EIS, so no additional cumulative impacts beyond those described in 2015 are anticipated.
Zephyr Transmission Line	500 kV transmission line	Application received – could impact the Bald Hills, Uintah, Carbon, Strawberry, Emery, and Sheeprocks populations. Effects: May remove vegetation due to construction activities. Towers may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
Parker Knoll Pump Storage Hydroelectric Federal Energy Regulatory Commission Project	Create electricity using a two-reservoir, gravity-fed system; approximately 200 acres of Greater Sage-Grouse habitat would be lost; mitigation involves Greater Sage-Grouse habitat-improvement work in areas adjacent to the lost habitat.	Still in planning and NEPA stages – could impact the Parker Mountain population. Effects: May remove vegetation due to construction activities. Increased maintenance activities could lead to an increase in collision mortalities. Any associated tall structures may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.
Enefit Utility Project	Five rights-of-way across public lands for infrastructure (a road, 3 pipelines, and 2 powerlines) to support development of a mine on private lands. Estimated 1,037 acres of disturbance for the rights-of-way (7,000-9,000 acre mine and 320-acre processing plant).	Still in planning and NEPA stages – could impact the Uintah population. Effects: May remove vegetation due to construction activities. Increased maintenance activities could lead to an increase in collision mortalities. Any associated tall structures may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.
Leasable Minerals (Oil and Gas, Non-energy Leasable Minerals, Coal, and Oil Shale and Tar Sands)		
Oil and Gas Leases	Acres of BLM land leased for Oil and Gas development	Past: From 2105-2017 the BLM has leased approximately 25,000 acres in HMAs, of which approximately 25 of those acres were located in PHMA. Lease stipulations apply as described in the leases according to HMA category. Effects: The act of leasing would have no direct effect. Future: BLM has a scheduled lease sale in June 2018 that will offer 646 acres in HMAs. Additionally, the BLM is required to conduct quarterly lease sales which could include parcels in HMA. Lease stipulations would still be as described in 2015 until a decision is made on this RMPA/EIS. Effect: The act of leasing would have no direct effect, as no specific disturbance is taken as a result of purchasing a lease.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		Leasing could occur in any of the populations, but would be most likely to impact the Uintah, Carbon, Emery, and Rich populations due to mineral potential.
Oil and Gas Wells	Oil and Gas exploration and development	Based upon the reasonable and foreseeable development assumptions in Chapter 4, it is anticipated that 2,968 oil and gas wells will be drilled within occupied Greater Sage-Grouse habitat within the population areas of which 2,289 wells are anticipated to be producing wells. Exploration wells expected in all populations. Development wells anticipated in Uintah, Carbon, Emery, and Rich populations. Effect: The development of wells within these areas could lead to fragmentation and loss of habitat due to construction activities. Increased noise levels associated with traffic and compressors may impact lek attendance. Increased traffic associated with day to day operations may also increase the potential for collision mortality. However, most of these impacts should be removed by management standards identified in the selected alternative.
Asphalt Ridge Tar Sands Development	Lease approximately 6,000 acres of Tar Sands Lands described in the Asphalt Ridge Tract, which is directly adjacent to existing approximately 16,000 acres of State leases	Still in planning and NEPA stages – could impact the Uintah population. Effect: As a largely underground operation on BLM-administered lands, this would disturb a small amount of land associated with ancillary features. On the portions of the mine that would be mined through surface means, habitat would be lost and noise, dust, and light would affect adjacent areas.
Flat Canyon Coal Lease by application	The Flat Canyon Coal Lease Tract is approximately 2, 692 acres of federal coal reserves	Forest Service completed the consent to BLM. Approximately 23 acres out of the 2,692 acres are within the Emery Population Area. Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		management standards identified in the selected alternative.
Alton Coal Tract Lease-by-Application	Add 3,576 acres of federal surface or mineral estate to existing 300-acre mine on private land.	Still in planning and NEPA stages – could impact the Panguitch population. Effect: Activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Williams Draw Coal Lease by Application	The proposed action includes 4,200 acres of federal surface and mineral estate; the proposal may have several vents, drilling exploration holes on the surface and underground, and load-out facilities	Still in planning and NEPA stages; could impact the Carbon population. Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Greens Hollow Coal Lease by Application	Proposal includes 6,700 acres; a vent is proposed off site; minimal surface disturbances with the exception for exploration drilling	The area has been leased, but development is on hold due to litigation. Would affect the Emery population. Effect: Activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Flat Canyon Coal Lease by Application	Lease by Application 3,792 acres; and Exploration License, 595 acres	Leased and under production in the Carbon population. Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Gilsonite Leasing	16,810 acres that are currently under prospecting permit application; the permits would either be issued or a Known Gilsonite Leasing Area would be established, thus allowing competitive leasing	The prospecting permit applications have been in place since the late 1980s; Known Gilsonite Leasing Area report ongoing, after which NEPA will begin to address backlogs for these areas in the Uintah population.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		Effect: Activities associated with development or prospecting of the permit / lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Phosphate Fringe Acreage Lease	1,627 acres of fringe acreage lease on BLM-administered lands	NEPA has started and awaiting a Development Scenario to complete the NEPA for this area in the Uintah population. Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Phosphate Competitive Lease Application	1,186 acres on National Forest System lands	NEPA has started and awaiting a Development Scenario to complete the NEPA for this area in the Uintah population. Effect: Activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Other Items		
Hard Rock Prospecting Permits being considered on Bankhead Jones	Hard rock exploration permits	Pending Consideration for this area in the Sheeprocks population. Effect: Activities associated with development of the lease could result in loss of habitat, vehicle mortality due to increased traffic and disruption of seasonal use areas. Most of these impacts should be removed by management standards identified in the selected alternative.
Gooseberry Narrows Reservoir	Bureau of Reclamation project on Forest Service and private land; project is approximately 1,200 acres	EIS is complete, pending EPA review and approval for this portion of the Carbon population.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		Effect: Activities associated with construction and operation of the reservoir would result in loss of habitat within the project area and a potential increase for vehicle mortality due to increased traffic. However, the habitat lost within the project area may be supplemented by improving the quality and seasonal functionality of the adjacent habitat. Most of the impacts should be removed by management standards identified in the selected alternative.
Motorized Travel Plan Implementation	Implementation of motorized route designation plans across the planning region	Implementation actions underway statewide, with travel planning reasonably foreseeable in the Sheeprocks, Uintah, Carbon and Panguitch populations. Effect: The development of a motorized travel plan would potential help to reduce fragmentation of habitat and centralizing disturbance into areas of lesser importance.
Grand Staircase-Escalante National Monument Management Plan	Development of a resource management plan	Still in early planning stages for this area that overlaps the Panguitch population. Effect: This action would provide a framework to manage both the remaining monument areas and the areas no longer within the monument boundaries. It is too early in the process to determine a cumulative effect since the proposed plan is unknown.
Forest Service Sage-Grouse Planning	Forest Service and Utah Division of Wildlife Resources	Forest Service has indicated they will also be amending their land use plans. Specific details of their proposed changes are not yet known, but it is anticipated they propose alignment with state management plans and strategies. Applicable to all Greater Sage-Grouse populations with National Forest System Lands. Effect: This effort will help to align the Forest Service's plan to be more consistent with the State of Utah's plan and provide the adequate management actions necessary to protect and conserve the Greater Sage-Grouse.

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
State of Utah Greater Sage-Grouse Management	Update of the State's Conservation Plan for Greater Sage-Grouse in Utah, as well as implementation of the State's compensatory mitigation rule	Past: The Conservation Plan for Greater Sage-grouse in Utah was finalized in 2013; it was designed to be updated every 5 years. While it requires a 4:1 mitigation ratio in the State's Sage-Grouse Management Areas (SGMA), there was no established approach to implement that mitigation standard to the State's 11 SGMAs. Effect: The plan establishes the management actions necessary for the State of Utah to continue to enhance and conserve the Greater Sage-Grouse while still allowing for economic opportunities. Future: The State is updating their Greater Sage-Grouse plan and incorporating the compensatory mitigation rule that provides a process to develop a banking system to apply the state's 4:1 mitigation ratio that is designed to improve habitat for Greater Sage-Grouse. Effect: This effort will help to refine and identify areas to improve management actions and allow for the incorporation of new and local science to better balance Greater Sage-Grouse management across the state. It will also provide an opportunity for economic development to occur while offsetting the impacts to habitat quality.
Wyoming		
Wildland Fires 2015-2017	BLM: Past – Acres burned on BLM administered land	Approximately 137,000 acres of HMA burned between 2015 and 2017. Post fire restoration and habitat treatments are being implemented, as described below, to diminish impacts of habitat lost to wildland fire.
Fire Restoration (Emergency Stabilization and Rehabilitation)	BLM: Past and Present – Habitat restoration following wildland fires	Approximately 4,030 acres of BLM-administered habitat are either currently being treated or scheduled to be treated according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire.
Habitat Treatments	BLM: Past – Habitat improvement projects	More than 96,000 acres of Greater Sage-Grouse habitat were treated between 2015 and 2017 to maintain or improve

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		conditions for Greater Sage-Grouse. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/ restoration.
Land Use and Realty (issued and pending) 2015-2018	BLM: Past ROWs issued on BLM land	BLM Wyoming issued approximately 3,000 ROWs in the planning area between 2015-2017. This includes amendments and reauthorizations, which may not have resulted in new disturbance. For ROWs occurring in sage grouse habitat, effects were offset by the management prescriptions in the RMPs and ARMPA.
	BLM: Future pending	There are approximately 590 ROW applications pending review and analysis. New ROWs under the Management Alignment Alternative would align with the management prescriptions of the Core Area Strategy and State of Wyoming Mitigation Framework. No additional cumulative impacts are anticipated, beyond those described.
Oil and Gas	BLM: Past	BLM Wyoming has offered for lease 861,634 acres; 812,123 acres of that total was leased. Leases followed management prescriptions in the RMPs and ARMPA and stipulations apply as described in the leases according to HMA category.
	BLM: Future pending	BLM Wyoming has a scheduled lease sale in June 2018 that will offer 198,588 acres for lease. The actions proposed in the Management Alignment Alternative to not propose to change stipulations analyzed in the 2014 and 2015 plans.
Locatable Mineral Projects	BLM: Past and Present	Between 2015-2017, the BLM has approved 17 new mines and/or expansions within the planning area (including non-habitat). The Management Alignment Alternative does not propose changes to any decisions associated with locatable minerals, which were sufficiently analyzed on the existing plans.
	BLM: Future pending	The BLM is currently reviewing 26 plans of operation for new mines, mine expansions and notice-level activities. This number also includes 10 pending mine patents, which are in the process of being patented into private ownership. The Management Alignment Alternative does not propose changes to any decisions associated with locatable

Table 4-5
Range-Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions

Action	Type	Effects
		minerals, and future impacts would be analyzed in future EISs, adhering to existing requirements of the RMPs and ARMPA.
Leasable Mineral Projects (Coal)	BLM: Past and Present	Two coal lease modifications were issued in 2018, totaling 1,306.61 acres. For lease modifications occurring in sage grouse habitat, effects were offset by the management prescriptions in the RMPs and ARMPA.
	BLM: Future pending	BLM Wyoming is currently reviewing 4 coal lease applications/modifications totaling 10,148.56 acres. No management decisions for leasable minerals are proposed for change under the Management Alignment Alternative.
Sage-Grouse Conservation	Forest Service: Future	Forest Service has indicated they will also be amending their land use plans. Specific details of their proposed changes are not yet known, but it is anticipated they will propose alignment with state management plans and strategies.

At the regional scale, WAFWA Greater Sage-Grouse management zones and responsible BLM offices include I (Great Plains: BLM Montana and Wyoming), II (Wyoming Basins: BLM Wyoming, Colorado, and Utah), III (Southern Great Basin: BLM Nevada, Northeastern California, and Utah), IV (Snake River Plain: BLM Idaho, Oregon, Nevada, Colorado, Utah, and Montana), V (Northern Great Basin: BLM Oregon, Northeastern California, and Nevada), VI (Columbia Basin: BLM Oregon), and VII (Colorado Plateau: BLM Northwest Colorado and Utah). These zones are an important resource for Greater Sage-Grouse management; and at a regional scale, the following projects are past, present, and reasonably foreseeable that cumulatively effect one or more of the WAWFA management zones. For Nevada and northeastern California, those actions in WAFWA Zones III, IV, and V, which overlap Utah, Idaho, Oregon, and Colorado, would have the greatest potential to contribute to cumulative effects. Note that not all of the projects listed for Utah, Idaho, Oregon, and Colorado are in WAFWA Zones III, IV, and V, and so may not contribute to cumulative effects.

Further, the entire sum of past, present, and reasonably foreseeable actions listed below represent cumulative effects across the range of Greater Sage-Grouse habitat and management areas. These effects are important to consider for future management of the species as a whole and are not solely being analyzed at the local or state level. That is why all ongoing BLM RMPAs/EISs refer to every past, present, and reasonably foreseeable action across all states undergoing a plan amendment.

Wildland fire and invasive species remain the greatest threat to Greater Sage-Grouse in the Great Basin. Between 2008 and 2017, wildfires burned an average of 900,000 acres per year in Greater Sage-Grouse

habitat management areas range-wide[1]; this is within the range of projected wildland fire analyzed in the 2015 Final EIS. The BLM has committed resources to habitat restoration and has treated 1.4 million acres of Greater Sage-Grouse habitat range-wide over the past 5 years.

The increased flexibility in these amendments can allow for responsible development of other uses in Greater Sage-Grouse habitat and may reduce costs to proponents but is not expected to result in a large increase in development proposals on public land. Similarly, the increased protections from the 2015 Final EIS have not resulted in a large decrease in ROW applications or an increase in rejected applications; therefore, the changes proposed under the Management Alignment Alternative are not expected to result in large changes to the rate of development in Nevada and northeastern California or in its economy.

Some 350 species of plants and wildlife rely on sagebrush steppe ecosystems and coexist with Greater Sage-Grouse and may be similarly affected by development or disturbance; however, nothing in the considered alternatives would lessen the BLM's authority or responsibility to provide for the needs of special status species, as described in BLM Land Use Plans, Policies, and Laws, including Manual 6840, the Endangered Species Act, and FLPMA. Increased flexibility for other uses within Greater Sage-Grouse habitat does not necessarily increase potential impacts on other wildlife or plant species. Site-specific NEPA analysis including an evaluation of impacts on special status species is required for on-the-ground projects within the planning area.

In addition to the analysis in the 2015 Final EIS in **Table 4-5**, other anticipated incremental impacts are discussed below in association with planning issues being analyzed in this RMPA/EIS.

Under the Management Alignment Alternative, habitat management area boundaries would be adopted or revised to incorporate the best available science (Coates et al. 2016). Because the underlying HMA allocations put in place to conserve Greater Sage-Grouse would not change, and these updates reflect the most recent knowledge concerning Greater Sage-Grouse habitat use and distribution, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse or the resources/uses analyzed herein.

Similarly, no appreciable additive impacts are anticipated from updating the adaptive management process as described in the Management Alignment Alternative. This update would ensure that the BLM is utilizing the best available science and decision support tools to guide management at the appropriate spatial scale, thus improving the BLM's assessment and response to ever-changing conditions that could affect Greater Sage-Grouse populations and/or habitat. Because any specific response to tripping a hard or soft trigger would be based on the causal factors responsible, presuming a specific response to unknown future conditions would be speculative at best and not reasonably foreseeable.

Under the Management Alignment Alternative, the allocation exception process would be updated to simplify the various exemptions contained in the 2015 Final EIS. While the availability of exceptions to land use plan allocations attached to PHMA and GHMA could increase the possibility of leasing, permitting, or ground-disturbing activities within a given HMA, the established criteria would ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or

[1]Removing 2012 and 2017, which were above-average wildland fire years, the 8-year average is approximately 500,000 acres burned per year.

cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety. Therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

Under the Management Alignment Alternative, the recommendation to withdraw SFAs from location and entry under the Mining Law of 1872 would be removed, as the EIS process considering the withdrawal was cancelled on October 11, 2017. In its 2016 SFA Withdrawal EIS, the BLM quantified the possible adverse effects from locatable mineral exploration and mining on the approximately 10 million acres of SFAs proposed for withdrawal, finding that they would be limited to approximately 9,000 acres of surface disturbance over 20 years, with approximately 0.58 percent of Greater Sage-Grouse male birds affected per year. The other action alternatives evaluated in the 2016 SFA Withdrawal EIS similarly demonstrated minimal benefit of the proposed withdrawal to Greater Sage-Grouse and its habitat.[2] The cumulative effects of implementing the Management Alignment Alternative are as described in the 2016 SFA Withdrawal EIS, under the No-Action Alternative, in which SFAs are not carried forward.

Under the Management Alignment Alternative, language would be added to clarify how implementation-level decisions would be guided regarding mitigation, seasonal timing restrictions, and modifying habitat objectives to better align with state conservation plans and management strategies. As these updates did not result in any new identifiable direct or indirect impacts, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

4.14 Irreversible and Irretrievable Commitment of Resources

Section 102(2)(C) of NEPA requires a discussion of any irreversible or irretrievable commitments of resources from an alternative, should it be implemented. An irreversible commitment of a resource is one that cannot be reversed, such as the extinction of a species or loss of a cultural resource site without proper documentation. An irretrievable commitment of a resource is one in which the resource or its use is lost for a period of time, such as extraction of oil and gas.

Should oil and gas deposits underlying Greater Sage-Grouse habitat be extracted, that oil and gas resource would be lost.

4.15 Unavoidable Adverse Impacts

Section 102(C) of the NEPA requires disclosure of any adverse environmental impacts that could not be avoided should the proposal be implemented. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures, or impacts for which there are no mitigation measures. Some unavoidable adverse impacts happen from implementing the RMPA/EIS; others are a result of public use of BLM-administered lands in the planning area.

[2]Importantly, mining operations that do occur are subject to regulation under the BLM's surface management regulations at 43 CFR Part 3809. These regulations ensure that operators comply with environmental standards in conducting exploration, mining, and reclamation. For example, the BLM must approve a plan of operations for locatable mining operations on public lands, which includes compliance with the National Environmental Policy Act, National Historic Preservation Act, and Endangered Species Act. Plans of operation must also include those measures to meet specific performance standards and to prevent unnecessary or undue degradation of the lands (43 CFR 3809.411).

This section summarizes major unavoidable impacts discussions of the impacts of each management action (in the discussion of alternatives) and provides greater information on specific unavoidable impacts.

Surface-disturbing activities would result in unavoidable adverse impacts. Although these impacts would be mitigated to the extent possible, unavoidable damage would be inevitable under both the No-Action Alternative and the Management Alignment Alternative.

Impacts from permanent conversion of areas to other uses, such as transportation and mineral and energy development or OHV use, would be greater under the Management Alignment Alternative, but overall minimal for both alternatives. Both the No-Action Alternative and the Management Alignment Alternative would place restrictions on many types of development, which would most likely result in fewer visual intrusions and fewer instances of unavoidable wildlife habitat loss.

Wildlife, livestock, wild horses and burros, and other herbivores consume vegetation and affect soils through hoof action and possible compaction. When these impacts are kept at appropriate levels, natural processes such as plant growth and recovery, freeze-thaw periods, and microbial activity in the soil surface result in recovery from these impacts and maintain site stability and health. Vegetation treatments promoting recovery of Greater Sage-Grouse habitats would result in the destruction of the target species, be it annual grass, noxious weed, or encroachment of juniper. Some level of competition for forage between wildlife, livestock, and wild horses would occur. Instances of displacement, harassment, and injury to these species could also occur. Both the No-Action Alternative and the Management Alignment Alternative would place restrictions on development and surface-disturbing activities, which would minimize the likelihood of displacement, harassment, and/or injury.

Development of mineral resources and general use of the decision area would introduce additional ignition sources into the planning area, which would increase the probability of wildland fire and the need for its suppression. These activities, combined with continued fire suppression, would also affect the overall composition and structure of vegetation communities; this could increase the potential for high-intensity wildland fires. Restrictions on development under both alternatives would be expected to decrease the potential for ignitions in the decision area; however, impacts would be greater under the No-Action Alternative.

Numerous land use restrictions imposed throughout the decision area to protect Greater Sage-Grouse habitat and other important values, by their nature, affect the ability of operators, individuals, and groups who use the public lands to do so without limitations. Although attempts would be made to minimize these impacts, unavoidable adverse impacts could occur under the No-Action Alternative or the Management Alignment Alternative.

4.16 Relationship Between Local Short-Term Uses and Long-Term Productivity

Section 102(C) of NEPA requires a discussion of the relationship between local, short-term uses of human environment and the maintenance and enhancement of long-term productivity of resources. As described in the introduction to this chapter, short term is defined as anticipated to occur within the first 5 years of implementation of the activity and long term as lasting beyond 5 years to the end of or beyond the life of this RMPA/EIS.

Surface-disturbing activities, including transportation and utility corridor construction, and mineral resource development would result in the greatest potential for impacts on long-term productivity. Management prescriptions and required design features (RDFs) are intended to minimize the effect of short-term commitments and to reverse change over the long term. These prescriptions and the associated reduction of impacts would be greater under the No-Action Alternative for resources such as vegetation and wildlife habitat; however, some impacts on long-term productivity might occur, despite the prescriptions intended to reduce impacts on Greater Sage-Grouse and its habitat.

Rights of ways (ROWs) and short-term use of an area to foster energy and mineral development would result in long-term loss of soil productivity and vegetation diversity. Impacts would persist as long as surface disturbance and vegetation loss continue. In general, the loss of soil productivity would be directly at the point of disturbance; even so, long-term vegetation diversity and habitat value could be reduced due to fragmentation and the increased potential for invasive species to spread from the developments or disturbances. Both the No-Action Alternative and the Management Alignment Alternative would provide for long-term productivity through restrictive allocations that limit development in many areas and through the application of other restrictions on development, such as disturbance caps, RDFs, and other management prescriptions.

ROWs and the short-term use of Greater Sage-Grouse habitat for energy and mineral development could impair the long-term productivity of Greater Sage-Grouse and its habitat and that of other species. This would occur by displacing species from primary habitats and removing components of these habitats that might not be restored for 20 years or longer. These short-term uses could also affect the long-term sustainability of some special status species. The potential for these impacts, however, would be minimal under both the No-Action Alternative and the Management Alignment Alternative. The short-term resource uses associated with mineral development (oil and gas seismic exploration, natural gas test well drilling, and the noise associated with these activities) would have adverse impacts on the long-term productivity of Greater Sage-Grouse and its habitat. This would be the case if these resource uses were to infringe on Greater Sage-Grouse seasonal habitats such as nesting, brood-rearing, and winter habitats. These activities, though short-term individually, could have collective long-term impacts on Greater Sage-Grouse and its habitat if they were to increase in the long term.

Chapter 5. Consultation and Coordination

This chapter describes the efforts undertaken by the BLM throughout the process of developing the RMPA/EIS to ensure the process remained open and inclusive to the extent possible. This chapter also describes efforts taken to comply with legal requirements to consult and coordinate with various government agencies. These efforts include public scoping; identifying and designating cooperating agencies; consulting with applicable federal, state, and tribal governments; and identifying "any known inconsistencies with State or local plans, policies or programs" (43 CFR 1610.3-2(e)).

5.1 Public Involvement

5.1.1 Public Scoping

The scoping period began with the publication of the NOI in the *Federal Register* on October 11, 2017. The NOI was titled Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environmental Impact Statements or Environmental Assessments. During the scoping period, the BLM sought public comments on whether all, some, or none of the 2015 Greater Sage-Grouse plans should be amended, what issues should be considered, and whether the BLM should pursue a state-by-state amendment process or structure its planning effort differently, for example by completing a national programmatic process. Representatives of the BLM engaged with the Western Governors' Association Sage Grouse Task Force in October of 2017 and January of 2018 to discuss the progress of scoping efforts. In addition, the DOI Deputy Secretary has emphasized that input from state governors would weigh heavily when considering what changes should be made and ensuring consistency with the BLM's multiple use mission.

Information about scoping meetings, comments received, comment analysis, and issue development can be found in the scoping report available online here: https://goo.gl/FopNgW.

5.1.2 Future Public Involvement

Public participation efforts will be ongoing throughout the remainder of the RMPA/EIS process. One substantial part of this effort is the opportunity for members of the public to comment on the Draft RMPA/EIS during the comment period. This Proposed RMPA/Final EIS will respond to all substantive comments that the BLM receives during the 90-day comment period. An NOA will be published in the *Federal Register* to notify the public of the availability of the Proposed RMPA and Final EIS. The NOA will also outline protest procedures during the 30-day period. A Governor's Consistency Review will occur concurrent with this protest period. Such protests will be addressed in the RODs, and necessary adjustments may be made to the RMPA/EIS. A ROD will then be issued by the BLM after the release of the Proposed RMPA/Final EIS, the Governor's Consistency Review, and any resolution of protests received on the Proposed RMPA/Final EIS.

5.2 Cooperating Agencies

Federal regulation directs the BLM to invite eligible federal agencies, state and local governments, and federally recognized Indian tribes to participate as cooperating agencies when amending RMPs Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environmental Impact Statements or Environmental Assessments (43 CFR 1610.3-1(b)). A cooperating agency is any such agency or tribe that enters into a formal agreement with the lead federal agency to

help develop an environmental analysis. More specifically, cooperating agencies "work with the BLM, sharing knowledge and resources, to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks" (BLM Land Use Planning Handbook H-1601-1). These agencies are invited to participate because they have jurisdiction by law or can offer special expertise. Cooperating agency status provides a formal framework for these government units to engage in active collaboration with a lead federal agency in the planning process.

In November 2017, BLM Nevada and California mailed invitations to the 64 agencies and tribes identified in **Table 5-1**, inviting them to participate as a cooperating agency in this RMPA/EIS effort. Of these 64 agencies and tribes, 26 accepted the BLM's invitation to become a cooperating agency.

Table 5-1
Cooperating Agencies

Agencies and Tribes Invited to be Cooperators	Agencies that Accepted	Agencies that Signed Memoranda of Understanding
Army Corps of Engineers		
Alturas Rancheria		
California Department of Wildlife	X	
California State Historic Preservation Office		
Carson City		
Cedarville Rancheria		
Churchill County	X	X
Douglas County		
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada	X	
Elko County	X	X
Ely Shoshone Tribe of Nevada		
Environmental Protection Agency, Region 9		
Esmeralda County		
Eureka County	X	X
Fallon Naval Air Station		
Federal Highway Administration		
Fish and Wildlife Service, Reno Fish and Wildlife Office	X	X
Fort Bidwell Reservation		
Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon		
Greenville Rancheria		
Honey Lake Maidu Tribe		
Humboldt County	X	
Humboldt-Toiyabe National Forest	X	X
Klamath Tribes		
Lander County	X	
Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony, Nevada		

Table 5-1
Cooperating Agencies

Agencies and Tribes Invited to be Cooperators	Agencies that Accepted	Agencies that Signed Memoranda of Understanding
Lassen County	X	X
Lassen National Forest		
Lincoln County	X	
Lovelock Paiute Tribe of the Lovelock Indian Colony, Nevada		
Lyon County	X	
Mineral County	X	
Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Nevada		
Modoc County	X	X
Modoc National Forest		
N-4 State Grazing Board	X	X
Natural Resources Conservation Service, Nevada	X	
Nellis Air Force Base		
Nevada Department of Agriculture	X	X
Nevada Department of Conservation and Natural Resources	X	X
Nevada Department of Transportation		
Nevada Department of Wildlife	X	
Nevada Division of Minerals	X	X
Nye County	X	
Pahrump Paiute Tribe		
Paiute-Shoshone Tribe of the Fallon Reservation and Colony, Nevada		
Pershing County	X	
Plumas County		
Pit River Tribe of California		
Pyramid Lake Paiute Tribe of the Pyramid Lake Reservation, Nevada		
Reno-Sparks Indian Colony		
Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada		
Sierra County		
Storey County	X	
Summit Lake Paiute Tribe		
Susanville Indian Rancheria		
Te-Moak Tribe of Western Shoshone Indians of Nevada		
US Geological Survey		
Walker River Paiute Tribe of the Walker River Reservation, Nevada	X	X
Washoe County	X	

Table 5-1
Cooperating Agencies

Agencies and Tribes Invited to be Cooperators	Agencies that Accepted	Agencies that Signed Memoranda of Understanding
Washoe Tribe of Nevada and California	X	
White Pine County	X	
Winnemucca Indian Colony of Nevada		
Yerington Paiute Tribe of the Yerington Colony and Campbell Ranch, Nevada		
Yomba Shoshone Tribe of the Yomba Reservation, Nevada		

The BLM worked closely with the State of Nevada and CDFW to develop an alternative that would address the states' issues while keeping the pieces of the existing 2015 Plan that were not problematic for the states. The BLM and the states met with all cooperators as a group on March 21, 2018, and also four times with portions of the cooperators to discuss issues within their areas of expertise.

5.3 AMERICAN INDIAN TRIBAL CONSULTATION

Various federal laws require the BLM to consult with American Indian tribes during the planning/NEPA decision-making process. This section documents the specific consultation and coordination efforts undertaken throughout the process of developing the RMPA/EIS.

In the fall of 2017, the BLM mailed letters to the tribes identified in **Table 5-1**, inviting them to participate as a cooperating agency for this RMPA/EIS effort. The Duckwater Shoshone Tribe of the Duckwater Reservation, Walker River Paiute Tribe of the Walker River Reservation, and the Washoe Tribe of Nevada and California formally accepted the BLM's invitation to be cooperating agencies. The Washoe Tribe of Nevada and California also attended and participated in the cooperating agency meeting held on March 21, 2018. On March 28, 2018, BLM Nevada and California followed up (via email) with those tribes that did not respond to the fall invitation to become cooperators.

5.4 LIST OF PREPARERS

This Draft RMPA/EIS was prepared by an interdisciplinary team of staff from the BLM, in collaboration with Environmental Management and Planning Solutions, Inc. (**Table 5-2**).

Table 5-2
List of Preparers

BLM-Nevada	
John F. Ruhs	Nevada State Director
Raul Morales	Deputy State Director for Resources, Lands, and Planning
Matthew Magaletti	Nevada Sage-Grouse Lead
J. A. Vacca	Mitigation Specialist
Carolyn Sherve	Planning & Environmental Specialist
Jamie Lange	GIS Analyst – Geospatial Sprint Team – Contractor GISinc
Chris Rose	Public Affairs

Table 5-2
List of Preparers

Julie Suhr Pierce	Great Basin Socioeconomic Specialist
Kimberly Allison	Reno Regional NEPA Support Team – Rangeland Management Specialist
Nancy Army	Reno Regional NEPA Support Team – Planning & Environmental Coordinator
Sandy Gregory	Reno Regional NEPA Support Team – Fuels/Vegetation
Kelly Michelsen	Reno Regional NEPA Support Team – Wildlife Biologist
Nicholas Pay	Reno Regional NEPA Support Team – Archaeologist
David Repass	Reno Regional NEPA Support Team – Lead
Alex Jensen	Geologist – Fluid Minerals & Geothermal Program Lead
Perry Wickham	Lands and Realty Specialist
Kirk Rentmeister	Geologist – Locatable Minerals Program Lead
Kathryn Dyer	Livestock Grazing Program Lead
Sandra Brewer	Fish and Wildlife Program Lead
BLM-California	
Jerome E. Perez	California State Director
Danielle Chi	Deputy State Director for Resources, Planning, and Fire
Arlene Kosic	California Sage-Grouse Lead
Megan Oyarzun	GIS Specialist
Jeff Fontana	Public Affairs Officer
EMPSi: Environmental Management and Planning Solutions, Inc.	
Kate Krebs	Project Support Manager

5.5 RMPA/EIS DISTRIBUTION

A notification of the availability of this Draft RMPA/EIS is published in the *Federal Register*. Copies of the Draft RMPA/EIS are available at the BLM Nevada State Office and can also be viewed at the following website: https://goo.gl/kcsF4w.

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Chapter 6. References

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Glossary

Adaptive management. A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies, and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify management policy, strategies, and practices.

Amendment. The process for considering or making changes in the terms, conditions, and decisions of approved Resource Management Plans or management framework plans. Usually only one or two issues are considered that involve only a portion of the planning area.

Avoidance/avoidance area. These terms usually address mitigation of some activity (i.e., resource use). Paraphrasing the CEQ Regulations (40 CFR 1508.20), avoidance means to circumvent, or bypass, an impact altogether by not taking a certain action, or parts of an action. Therefore, the term "avoidance" does not necessarily prohibit a proposed activity, but it may require the relocation of an action, or the total redesign of an action to eliminate any potential impacts resulting from it. Also see *"right-of-way avoidance area"* definition.

Best Management Practices (BMPs). A suite of techniques that guide or may be applied to management actions to aide in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a planning decision unless the plans specify that they are mandatory.

Biologically Significant Unit (BSU). A geographical/spatial area within Greater Sage-Grouse habitat that contains relevant and important habitats that is used as the basis for comparative calculations to support evaluation of changes to habitat.

Compensatory mitigation. Compensating for the residual impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

Controlled Surface Used (CSU). CSU areas are open to fluid mineral leasing, but the stipulation allows the BLM to require special operational constraints, or the activity can be shifted more than 200 meters (656 feet) to protect the specified resource or value.

Cooperating agency. Assists the lead federal agency in developing an environmental assessment or environmental impact statement. These can be any agency with jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any tribe or Federal, State, or local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

Council on Environmental Quality (CEQ). An advisory council to the President of the US established by the National Environmental Policy Act of 1969. It reviews federal programs to analyze and interpret environmental trends and information.

Cumulative effects. The direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action.

Decision area. Public lands and mineral estate managed by the US Department of Interior, Bureau of Land Management that are within the planning area and are encompassed by all designated habitat.

Direct impacts. Direct impacts are caused by an action or implementation of an alternative and occur at the same time and place.

Environmental impact statement (EIS). A detailed statement prepared by the responsible official in which a major federal action that significantly affects the quality of the human environment is described, alternatives to the proposed action are provided, and effects are analyzed.

Fluid minerals. Oil, gas, coal bed natural gas, and geothermal resources.

General Habitat Management Area (GHMA). Areas of seasonal or year-round Greater Sage-Grouse habitat outside of priority habitat.

Geographic Information System (GIS). A system of computer hardware, software, data, people, and applications that capture, store, edit, analyze, and display a potentially wide array of geospatial information.

Habitat. An environment that meets a specific set of physical, biological, temporal, or spatial characteristics that satisfy the requirements of a plant or animal species or group of species for part or all of their life cycle.

Impact. The effect, influence, alteration, or imprint caused by an action.

Indirect impacts. Indirect impacts result from implementing an action or alternative but usually occur later in time or are removed in distance and are reasonably certain to occur.

Leasable minerals. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. These include energy-related mineral resources such as oil, natural gas, coal and geothermal, and some non-energy minerals, such as phosphate, sodium, potassium, and sulfur. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

Lease stipulation. A modification of the terms and conditions on a standard lease form at the time of the lease sale.

Lek. An arena where male sage-grouse display for the purpose of gaining breeding territories and attracting females. These arenas are usually open areas with short vegetation within sagebrush habitats, usually on broad ridges, benches, or valley floors where visibility and hearing acuity are excellent.

Long-term effect. The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more.

Management decision. A decision made by the BLM to manage public lands. Management decisions include both land use plan decisions and implementation decisions.

Minimization mitigation. Minimizing impacts by limiting the degree or magnitude of the action and its implementation (40 CFR 1508.20 (b)).

Mitigation. Includes specific means, measures or practices that could reduce, avoid, or eliminate adverse impacts. Mitigation can include avoiding the impact altogether by not taking a certain action or parts of an action, minimizing the impact by limiting the degree of magnitude of the action and its implementation, rectifying the impact by repairing, rehabilitation, or restoring the affected environment, reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and compensating for the impact by replacing or providing substitute resources or environments.

Modification. A change to the provisions of a lease stipulation, either temporarily or for the term of the lease. Depending on the specific modification, the stipulation may or may not apply to all sites within the leasehold to which the restrictive criteria are applied.

No surface occupancy (NSO). A major constraint where use or occupancy of the land surface for fluid mineral exploration or development and all activities associated with fluid mineral leasing (e.g., truck-mounted drilling and geophysical exploration equipment off designated routes, construction of wells and/or pads) are prohibited to protect identified resource values. Areas identified as NSO are open to fluid mineral leasing, but surface occupancy or surface-disturbing activities associated with fluid mineral leasing cannot be conducted on the surface of the land. Access to fluid mineral deposits would require horizontal drilling from outside the boundaries of the NSO area.

Planning area. The geographical area for which resource management plans are developed and maintained regardless of jurisdiction.

Planning criteria. The standards, rules, and other factors developed by managers and interdisciplinary teams for their use in forming judgments about decision making, analysis, and data collection during planning. Planning criteria streamlines and simplifies the resource management planning actions.

Planning issues. Concerns, conflicts, and problems with the existing management of public lands. Frequently, issues are based on how land uses affect resources. Some issues are concerned with how land uses can affect other land uses, or how the protection of resources affects land uses.

Policy. This is a statement of guiding principles, or procedures, designed and intended to influence planning decisions, operating actions, or other affairs of the BLM. Policies are established interpretations of legislation, executive orders, regulations, or other presidential, secretarial, or management directives.

Priority Habitat Management Areas (PHMA). Areas that have been identified as having the highest conservation value to maintaining sustainable Greater Sage-Grouse populations; they include breeding, late brood-rearing, and winter concentration areas.

Required Design Features (RDFs). Means, measures, or practices intended to reduce or avoid adverse environmental impacts. A suite of features that would establish the minimum specifications for

certain activities (i.e., water developments, mineral development, and fire and fuels management) and mitigate adverse impacts. These design features would be required to provide a greater level of regulatory certainty than through implementation of Best Management Practices. In general, the design features are accepted practices that are known to be effective when implemented properly at the project level.

Resource management plan (RMP). A land use plan as prescribed by the Federal Land Policy and Management Act that establishes, for a given area of land, land-use allocations, coordination guidelines for multiple-use, objectives, and actions to be achieved.

Short-term effect. The effect occurs only during or immediately after implementation of the alternative.

Stipulation (general). A term or condition in an agreement or contract.

Stipulation (oil and gas). A provision that modifies standard oil and gas lease terms and conditions in order to protect other resource values or land uses and is attached to and made a part of the lease. Typical lease stipulations include No Surface Occupancy, Timing Limitations, and Controlled Surface Use. Lease stipulations are developed through the land use planning process.

Timing Limitation (TL). Areas identified for timing limitations, a moderate constraint, are closed to fluid mineral exploration and development, surface-disturbing activities, and intensive human activity during identified timeframes. This stipulation does not apply to operation and basic maintenance activities, including associated vehicle travel, unless otherwise specified. Construction, drilling, completions, and other operations considered to be intensive are not allowed. Intensive maintenance, such as workover wells, is not permitted. TLs can overlap spatially with no surface occupancy and controlled surface use, as well as with areas that have no other restrictions.

Index

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Appendix A
Maps

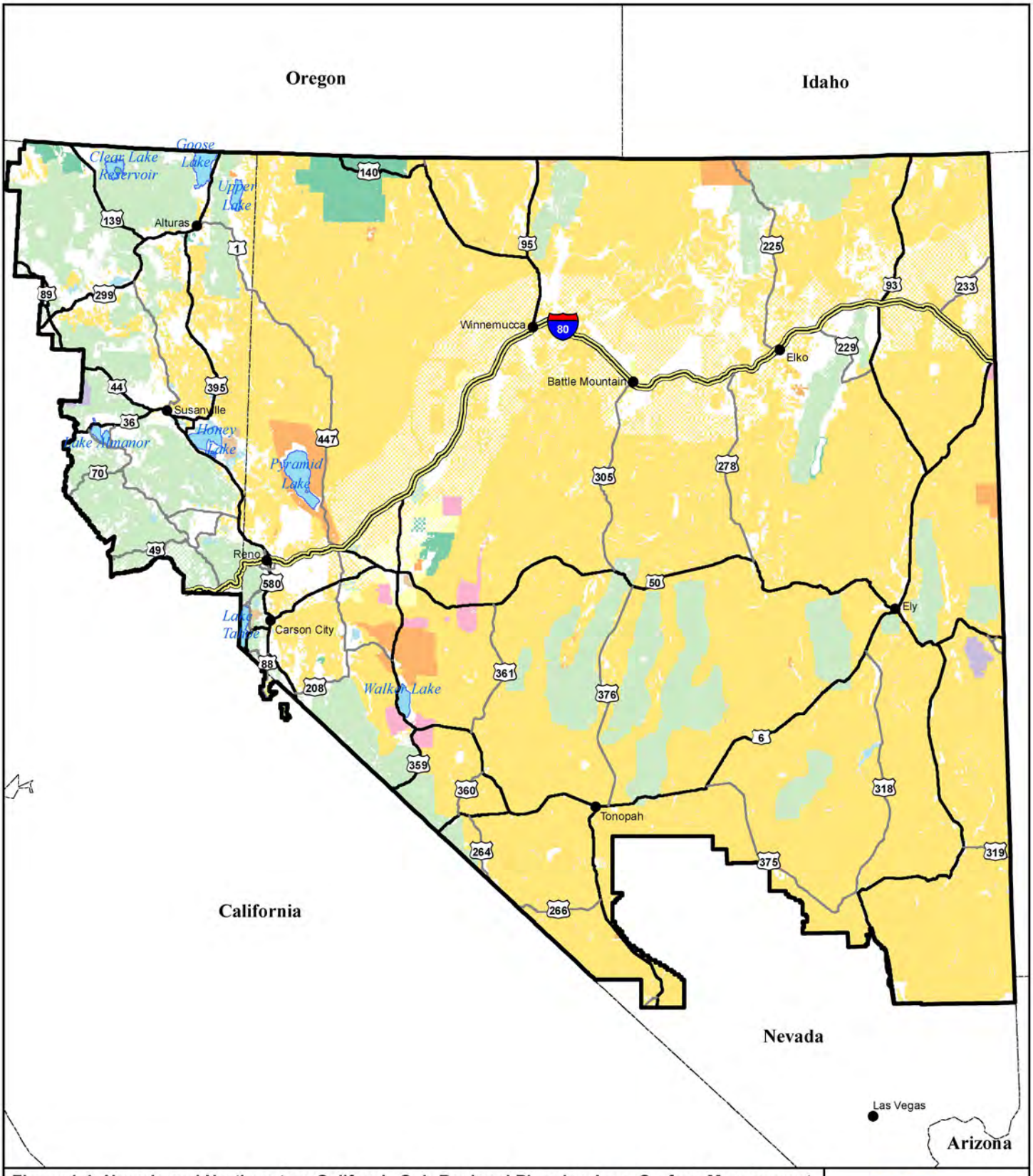


Figure 1-1: Nevada and Northeastern California Sub-Regional Planning Area, Surface Management

- Bureau of Land Management
- US Forest Service
- National Park Service
- US Fish and Wildlife
- Indian Reservation
- Bureau of Reclamation
- Department of Defense
- Other Federal
- State
- Planning Area Boundary
- State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

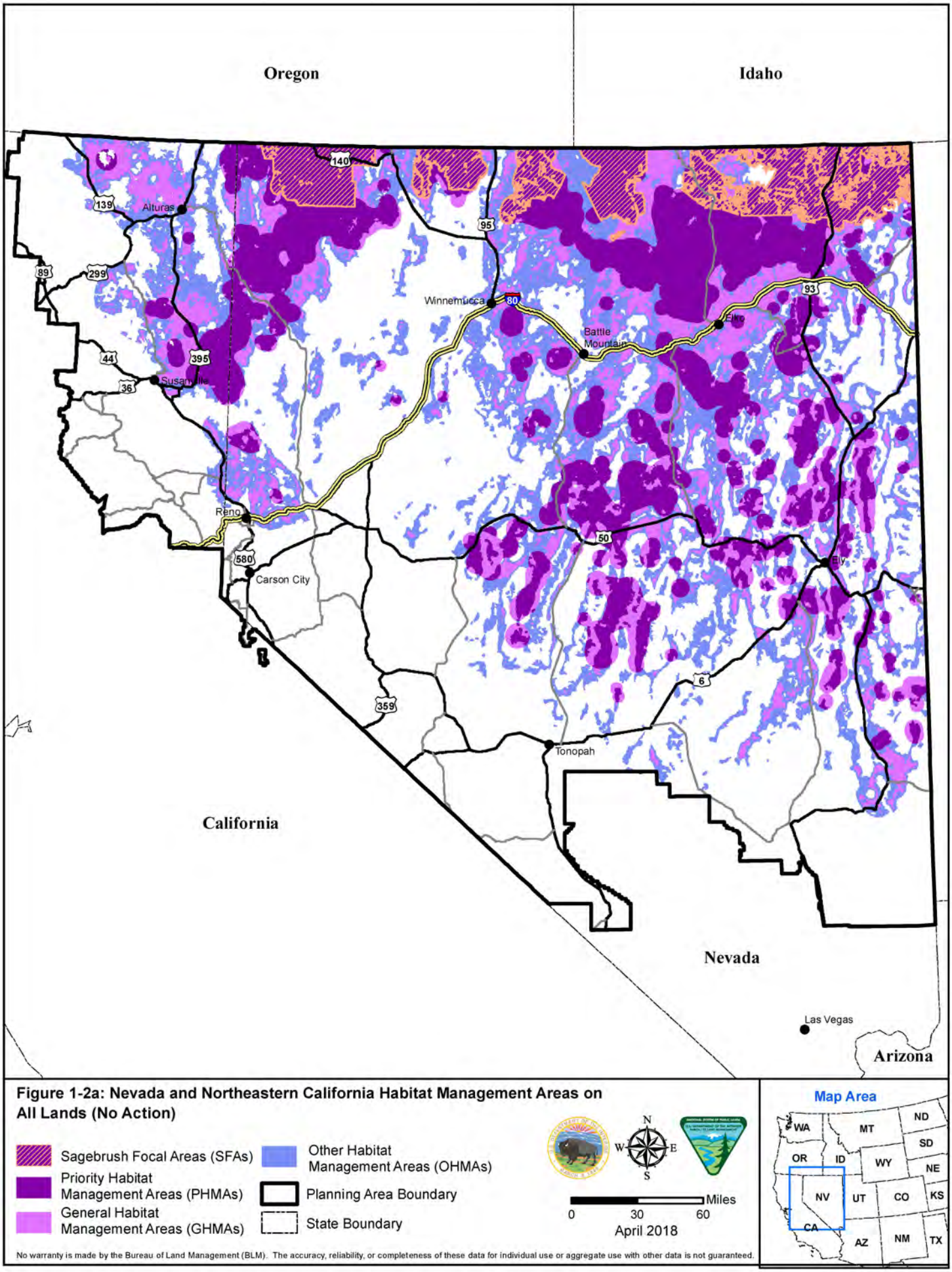


Figure 1-2a: Nevada and Northeastern California Habitat Management Areas on All Lands (No Action)

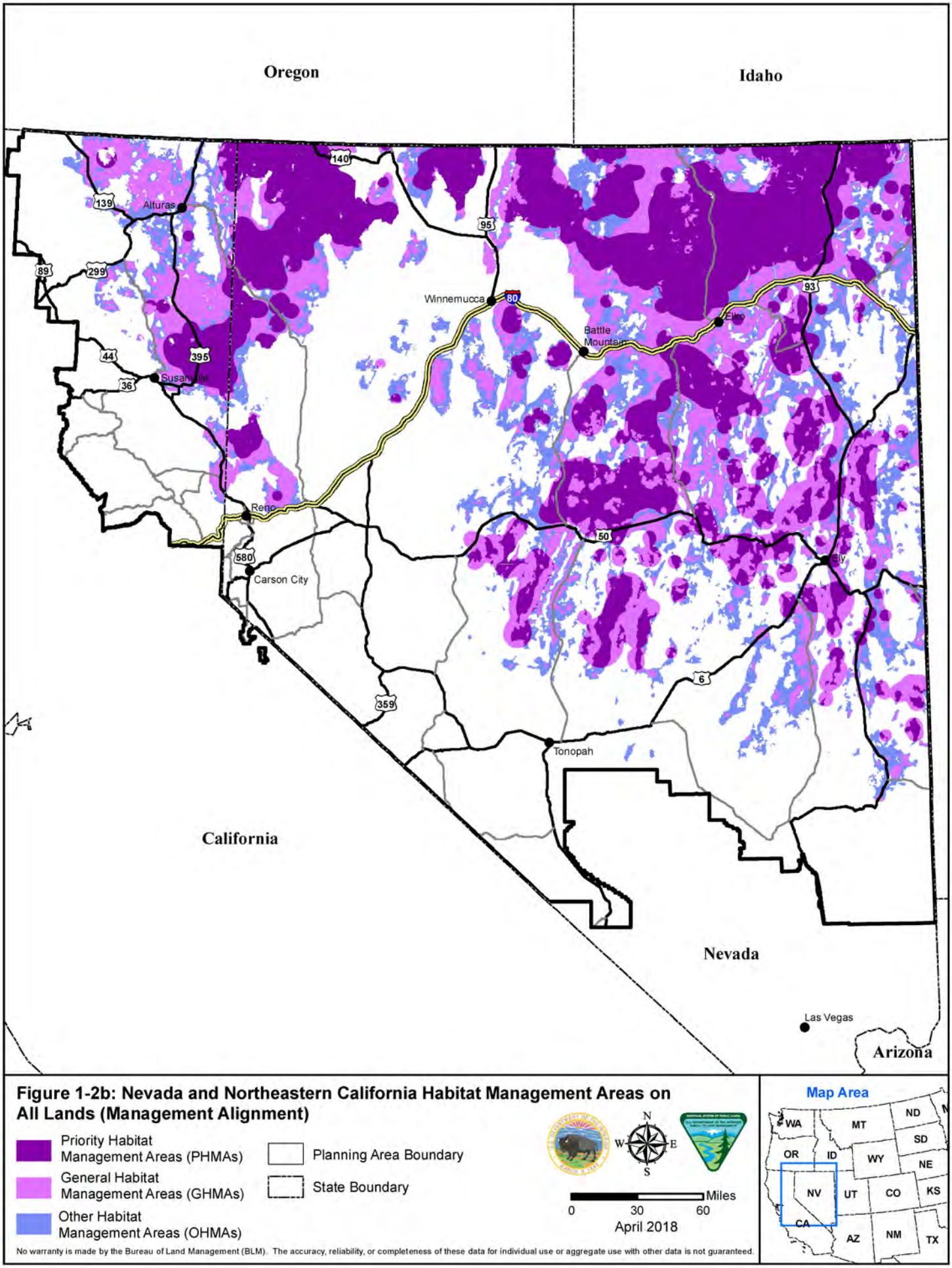


Figure 1-2b: Nevada and Northeastern California Habitat Management Areas on All Lands (Management Alignment)

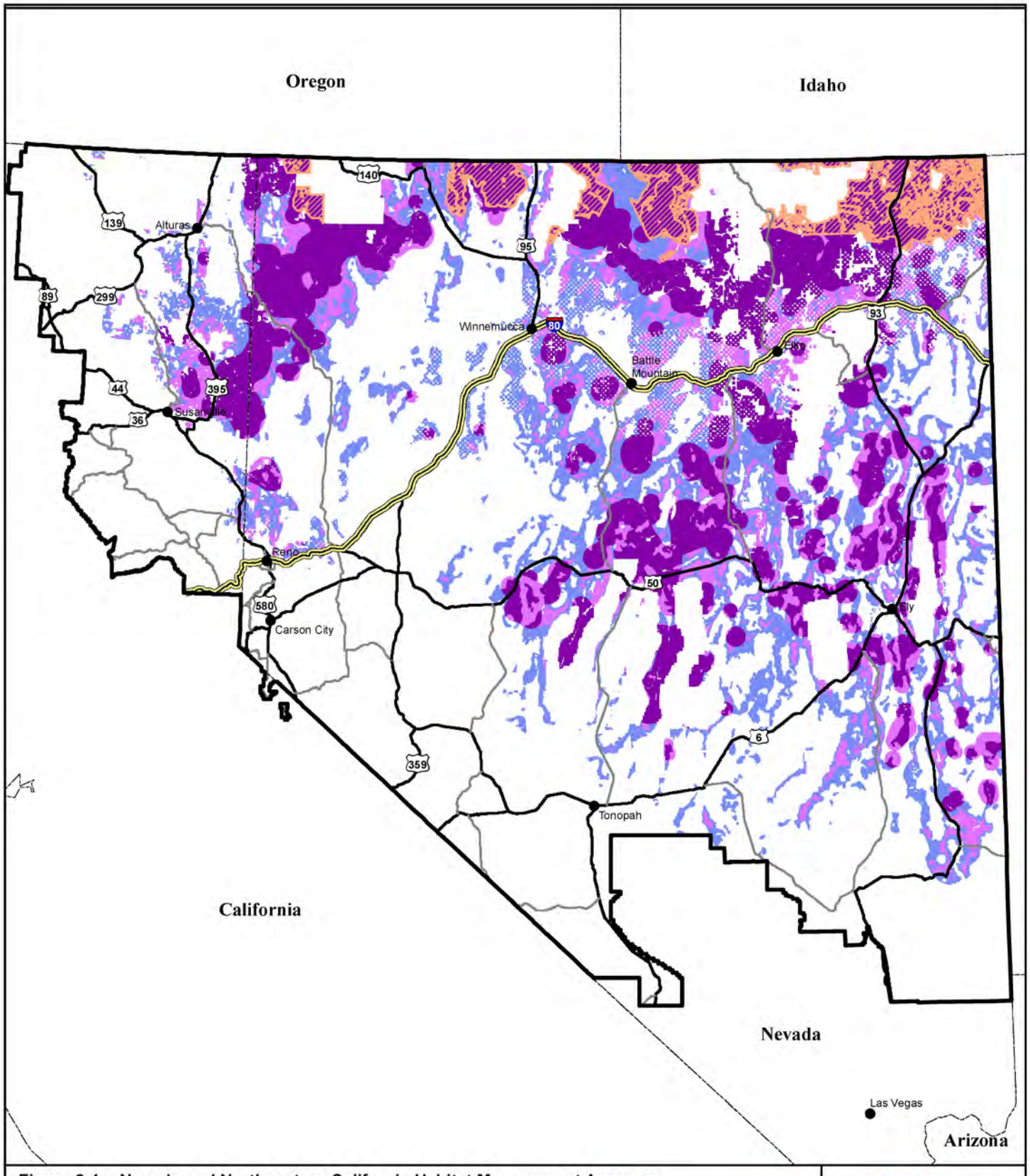


Figure 2-1a: Nevada and Northeastern California Habitat Management Areas on BLM Managed Public Lands (No Action)

- Sagebrush Focal Areas (SFAs)
- Priority Habitat Management Areas (PHMAs)
- General Habitat Management Areas (GHMAs)
- Other Habitat Management Areas (OHMAs)
- Planning Area Boundary
- State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

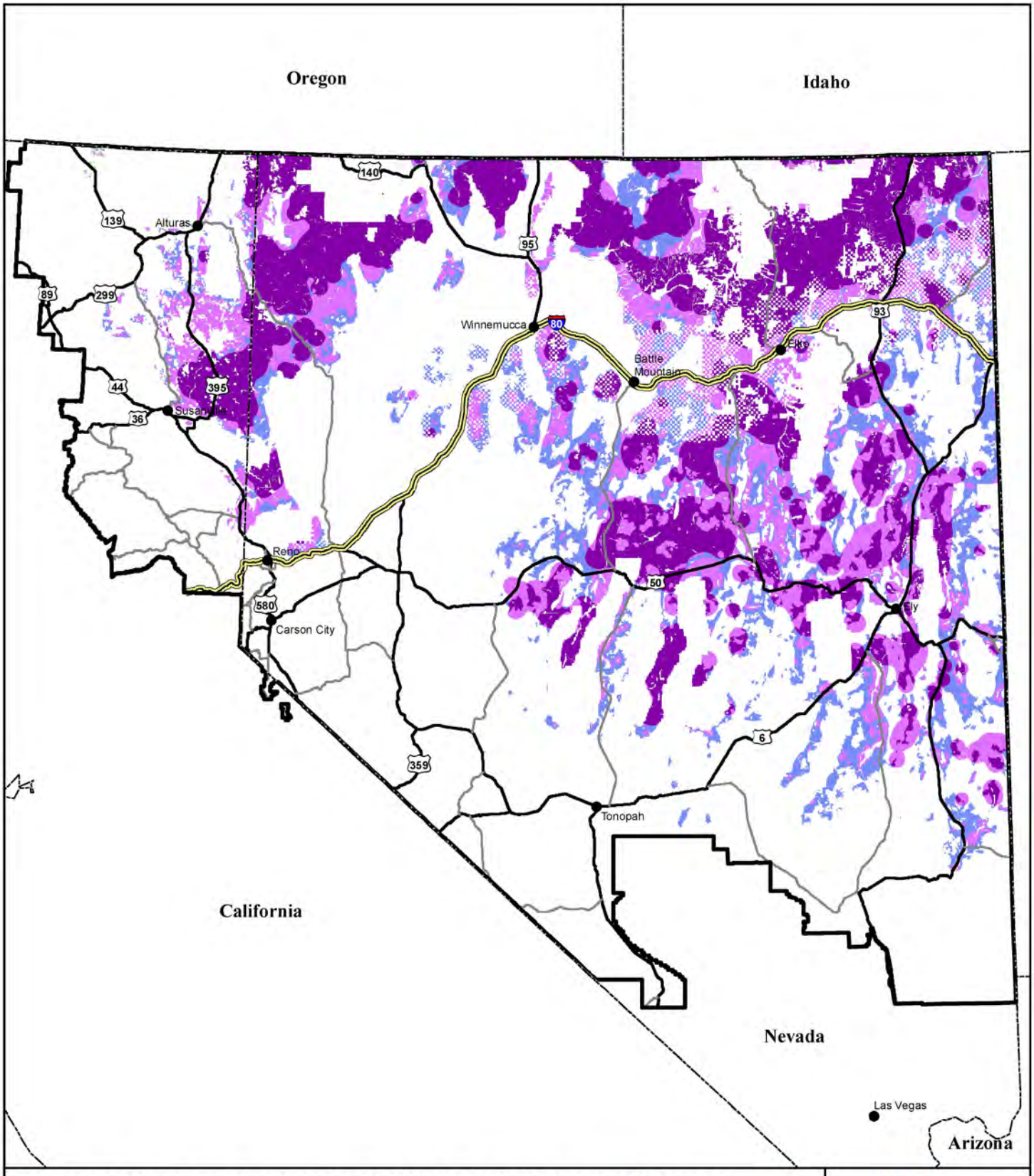


Figure 2-1b: Nevada and Northeastern California Habitat Management Areas on BLM Managed Public Lands (Management Alignment)

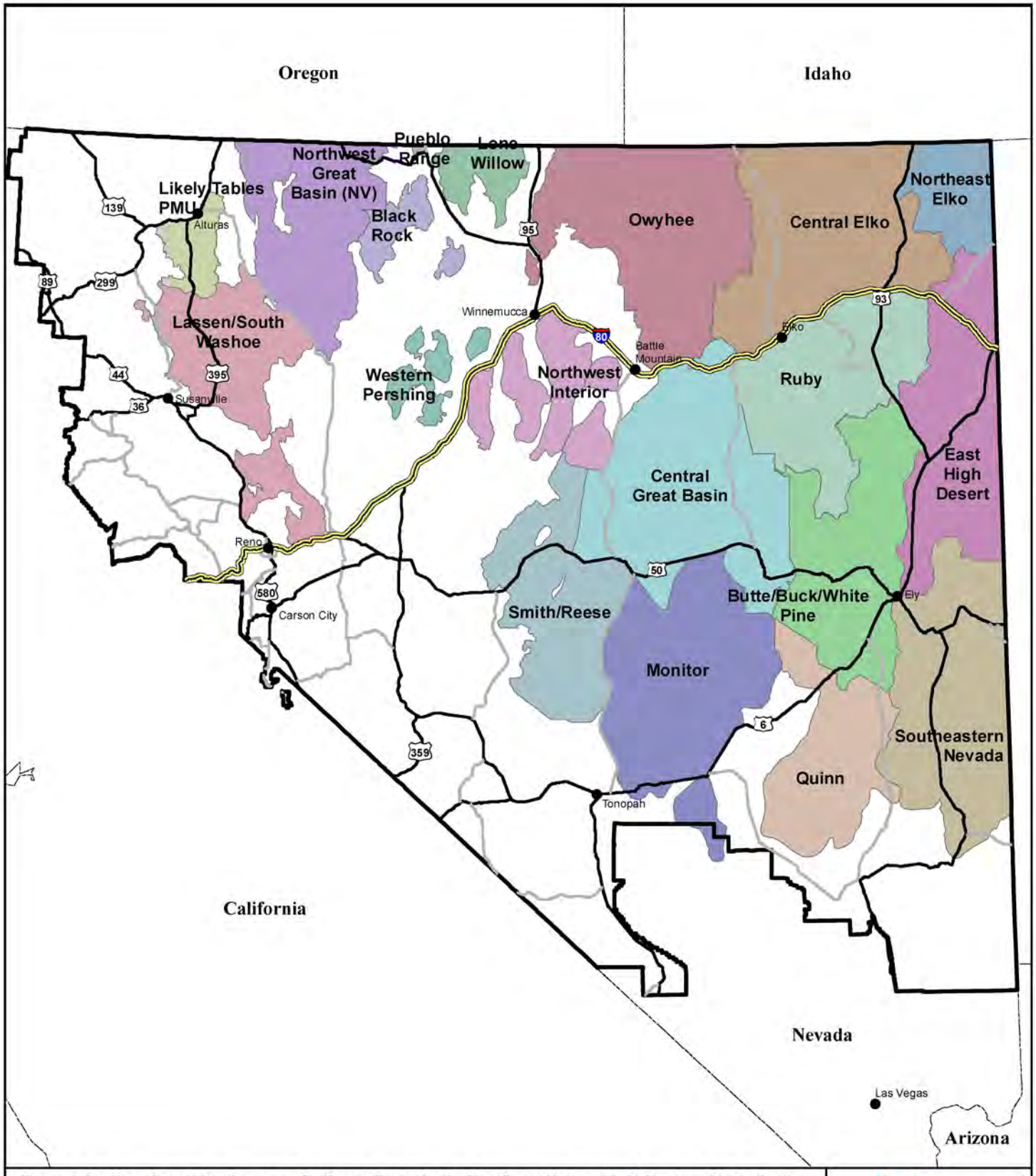


Figure 2-2a: Nevada and Northeastern California Biologically Significant Unit and Lek Clusters (No Action)

- Black Rock
- Butte/Buck/White Pine
- Central Elko
- Central Great Basin
- East High Desert
- Lassen/South Washoe
- Likely Tables PMU
- Lone Willow
- Monitor
- Northeast Elko
- Northwest Great Basin (NV)
- Northwest Interior
- Owyhee
- Pueblo Range
- Quinn
- Ruby
- Smith/Reese
- Southeastern Nevada
- Western Pershing
- Planning Area Boundary
- States Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

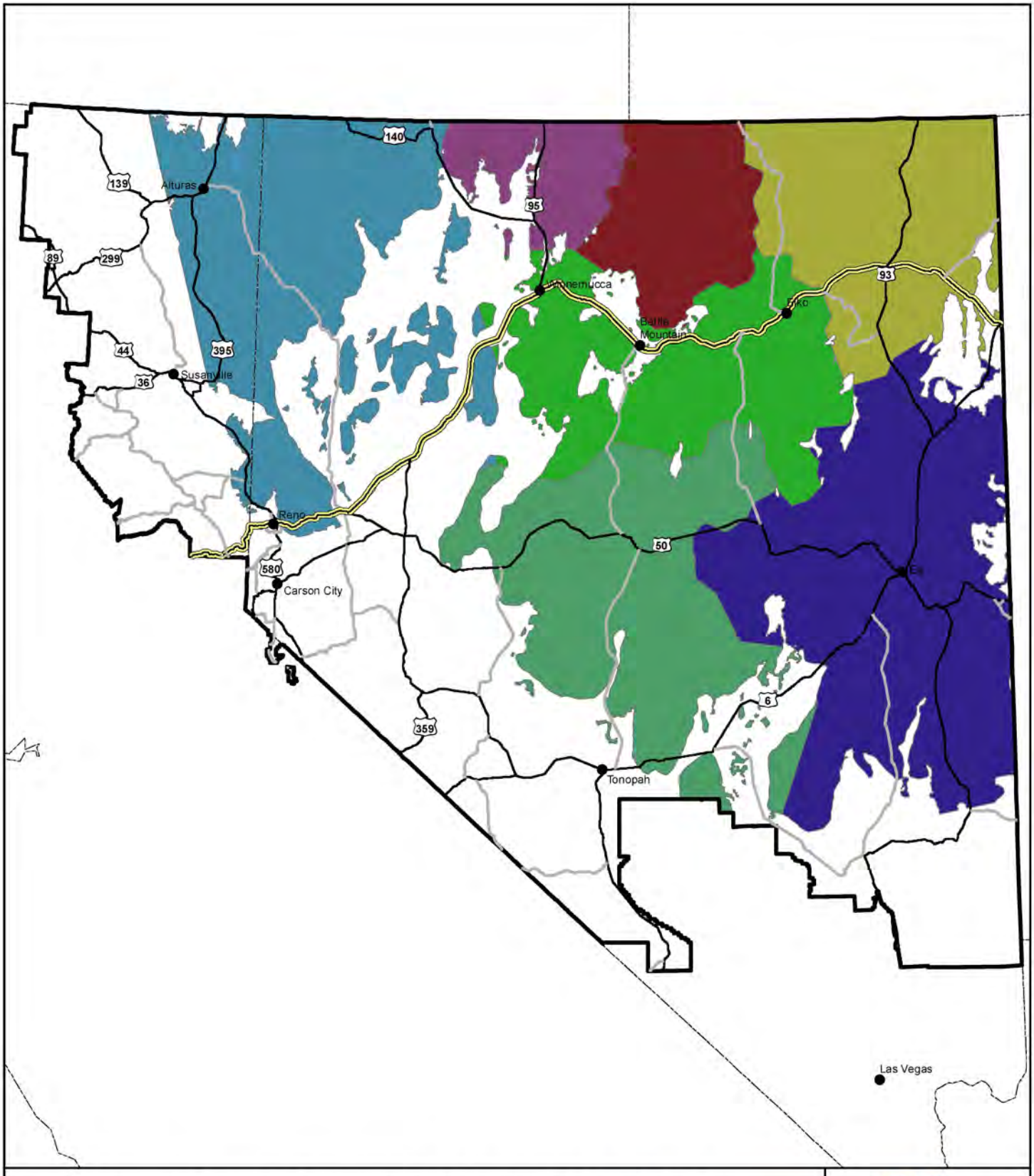


Figure 2-2b: Nevada and Northeastern California Biologically Significant Unit and Lek Clusters (Management Alignment)

Biologically Significant Unit
- Battle Mountain North
- Battle Mountain South
- Carson City
- Elko East
- Elko West
- Ely
- Winnemucca

- Lek Cluster Boundary
- Planning Area Boundary
- States Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

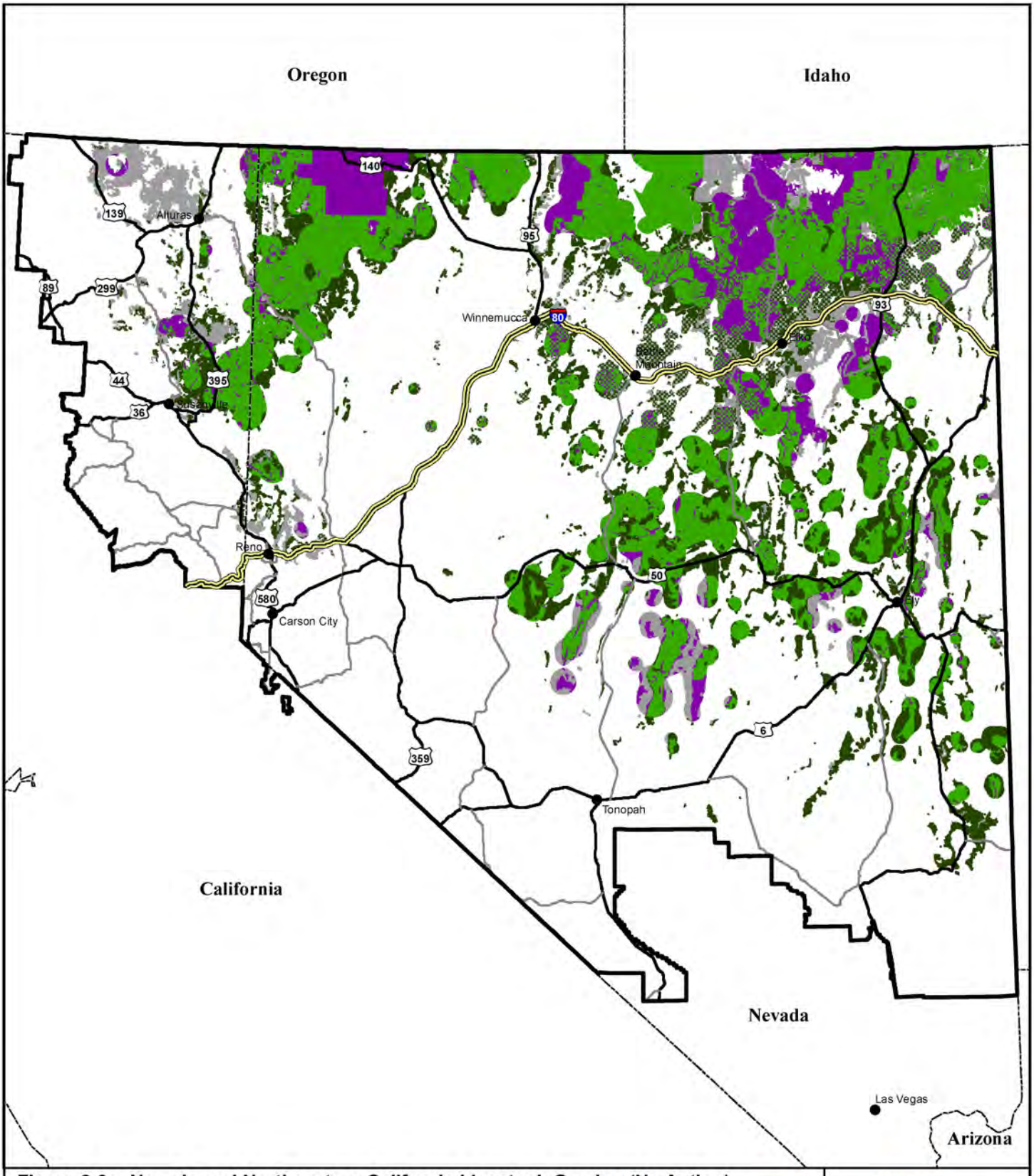


Figure 2-3a: Nevada and Northeastern California Livestock Grazing (No Action)

PHMA	GHMA	
		Outside BLM Decision Area
		Areas Available for Livestock Grazing
N/A	*N/A*	Areas Unavailible for Livestock Grazing

Planning Area Boundary
State Boundary

N
W E
S

0 30 60 Miles

April 2018

Map Area

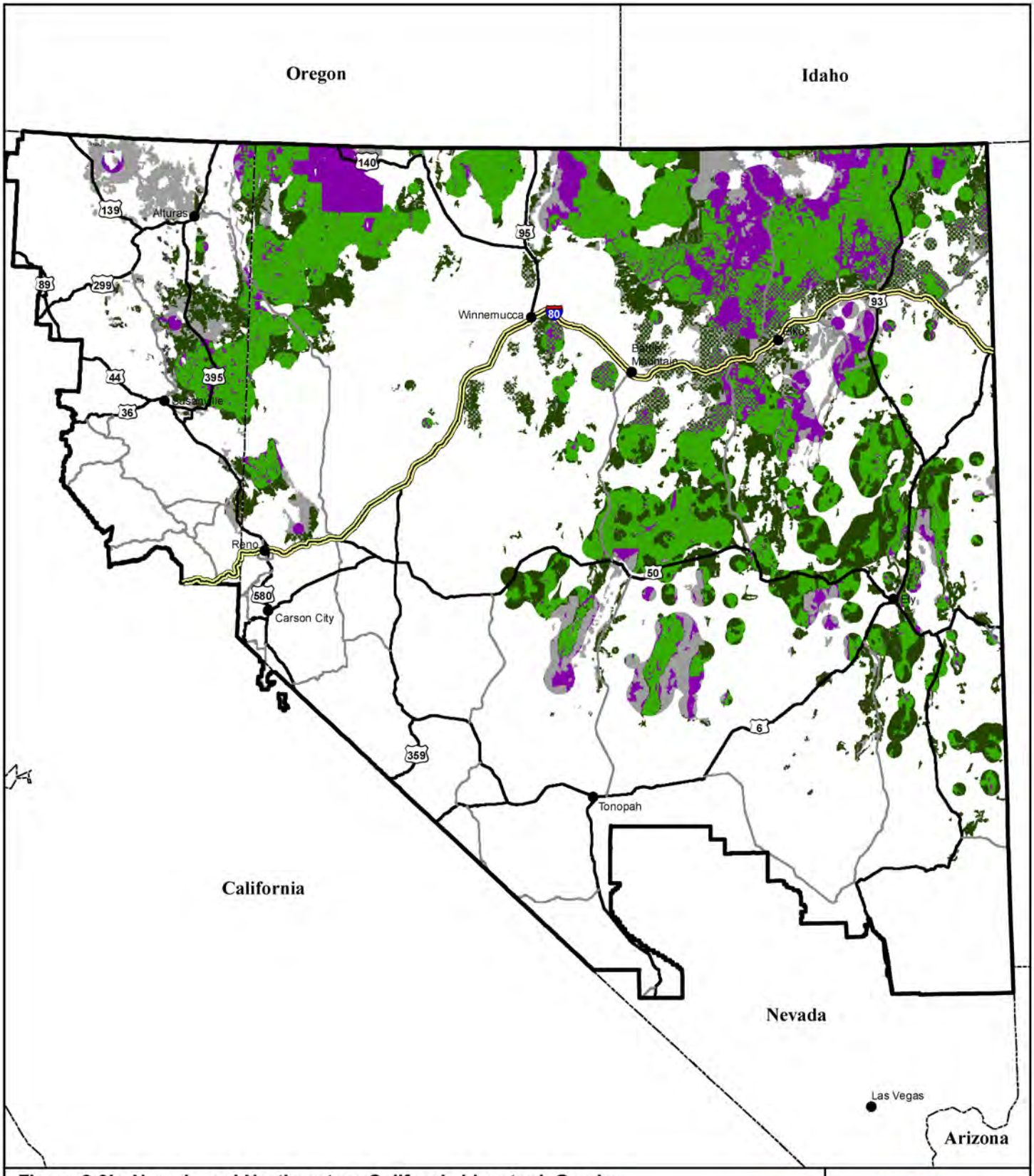


Figure 2-3b: Nevada and Northeastern California Livestock Grazing (Management Alignment)

PHMA GHMA

Outside BLM Decision Area

Areas Available for Livestock Grazing

N/A N/A Areas Unavalible for Livestock Grazing

Planning Area Boundary

State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

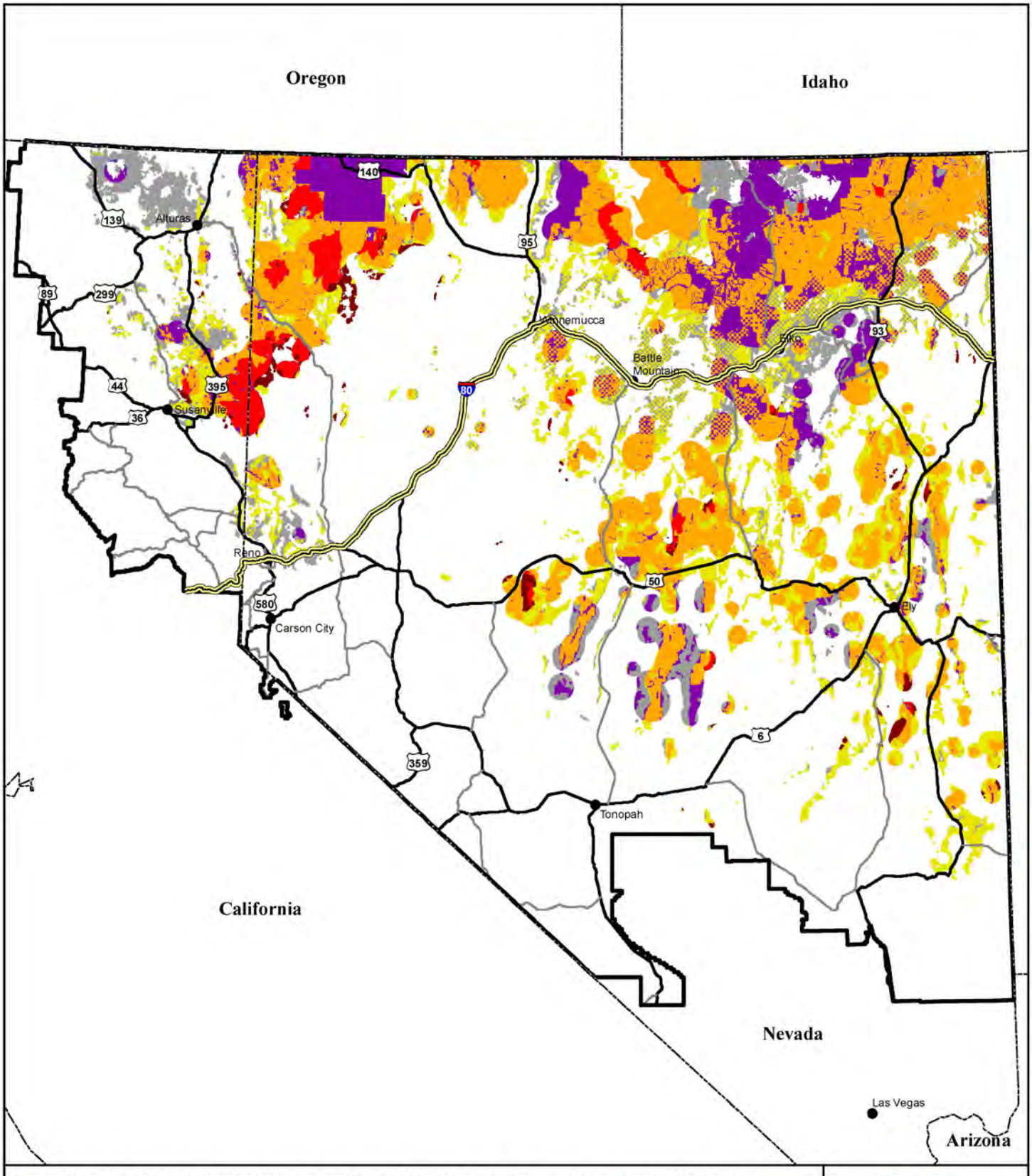


Figure 2-4a: Nevada and Northeastern California Fluid Minerals (Oil, Gas, and Geothermal) (No Action)

PHMA / GHMA

- Outside BLM Decision Area
- Closed
- Open w/ Major Stipulations (NSO)
- Open w/ Moderate Stipulations (CSU and/or TL)

Planning Area Boundary

State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

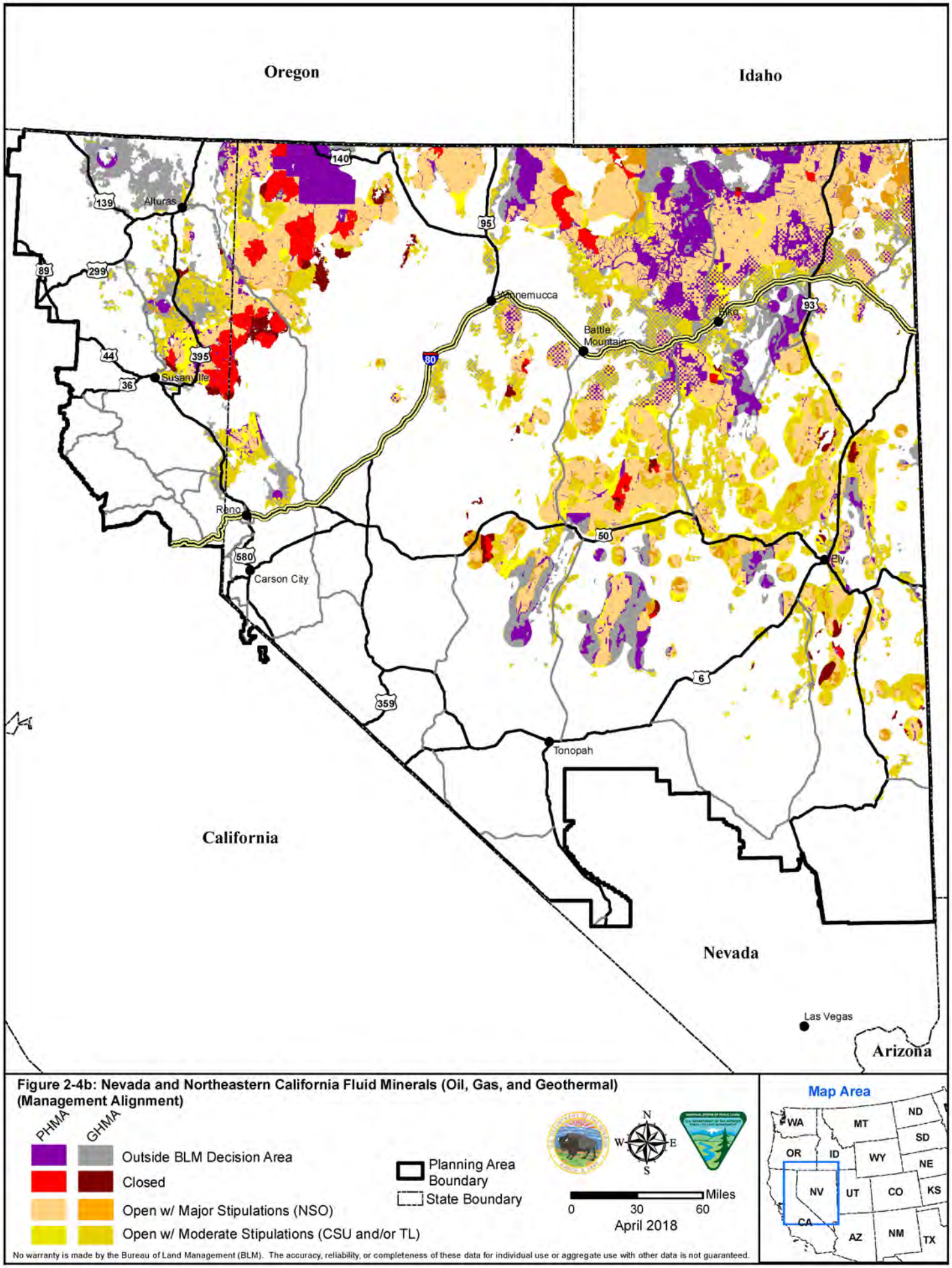


Figure 2-4b: Nevada and Northeastern California Fluid Minerals (Oil, Gas, and Geothermal) (Management Alignment)

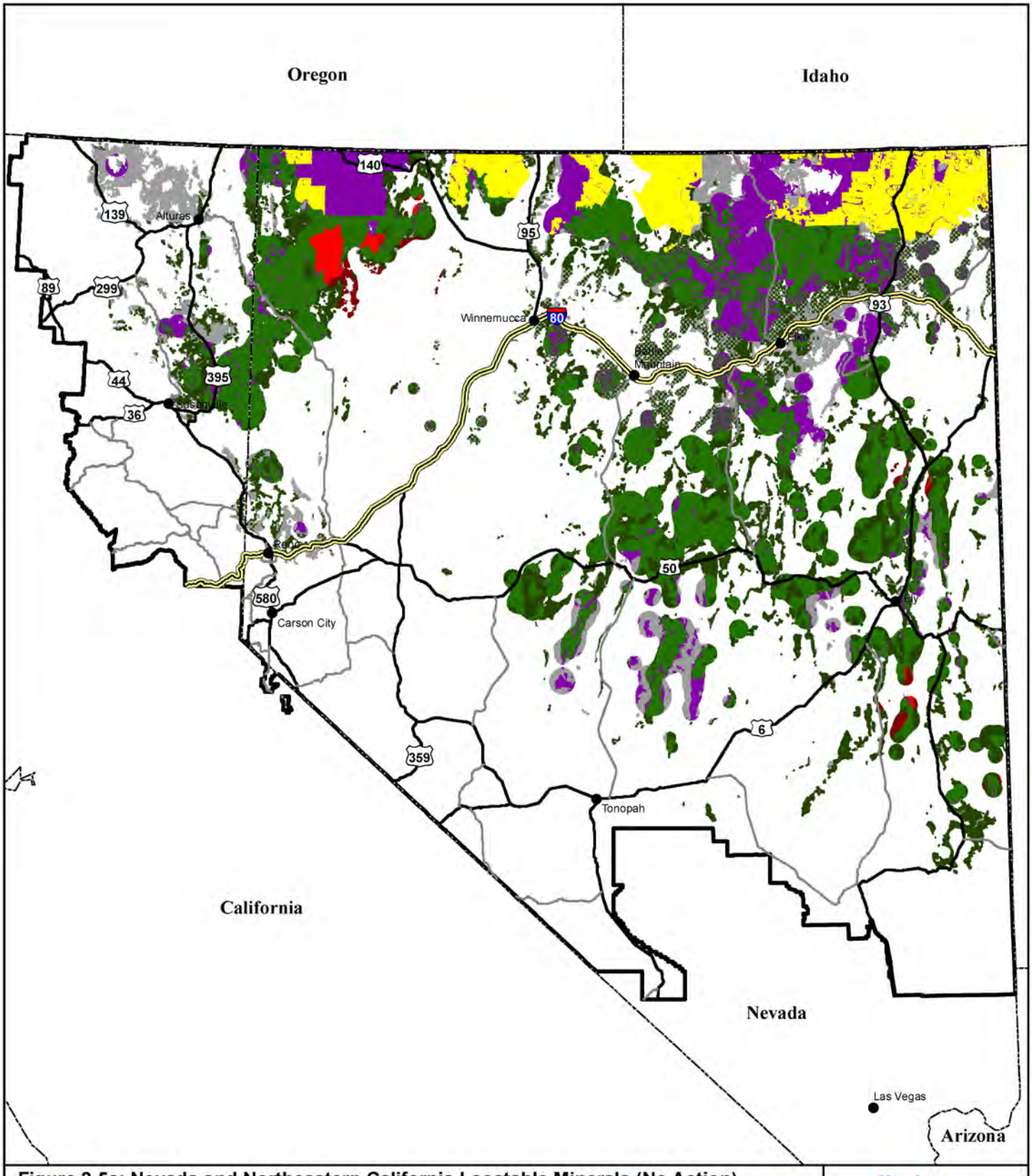


Figure 2-5a: Nevada and Northeastern California Locatable Minerals (No Action)

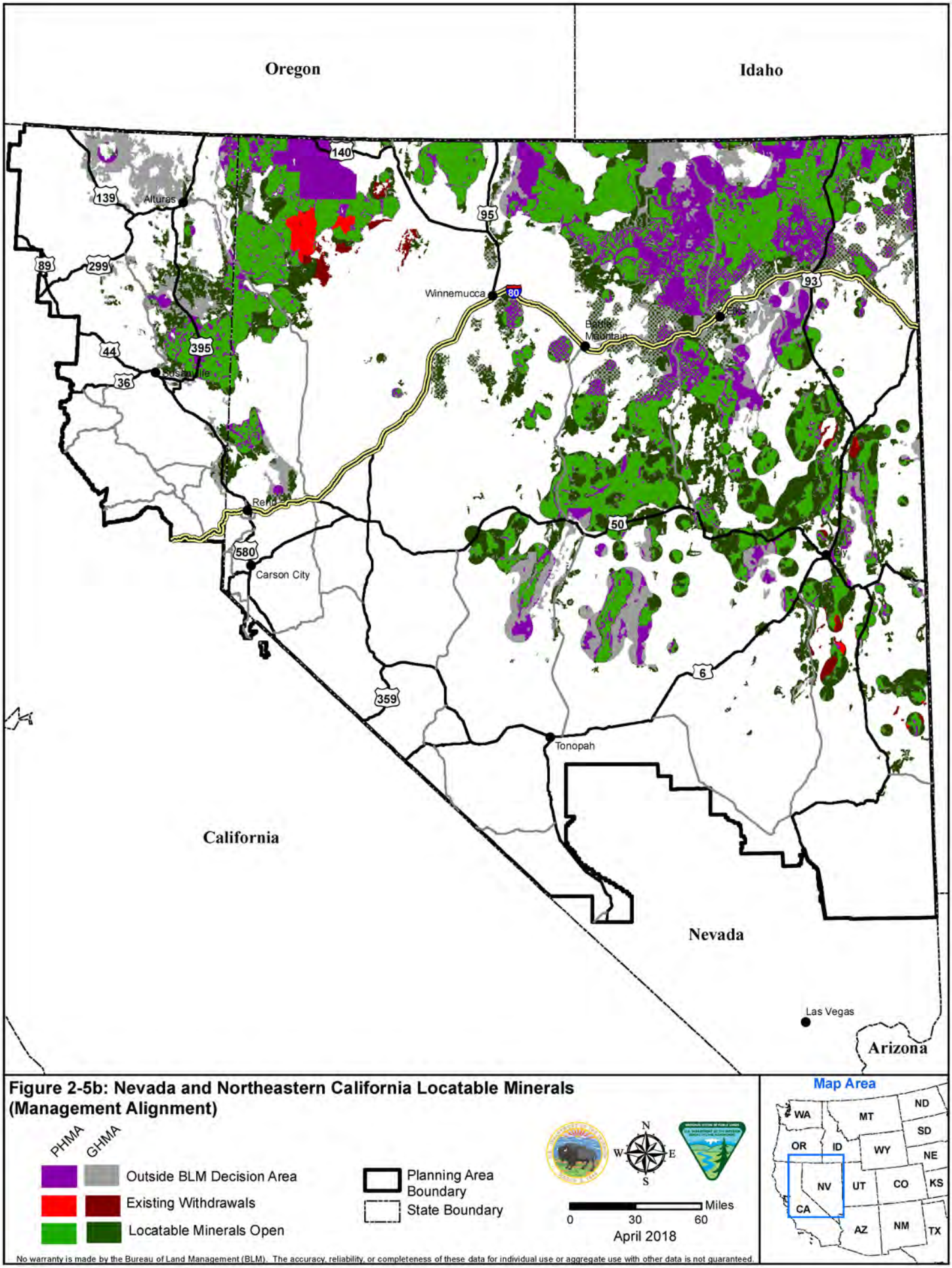


Figure 2-5b: Nevada and Northeastern California Locatable Minerals (Management Alignment)

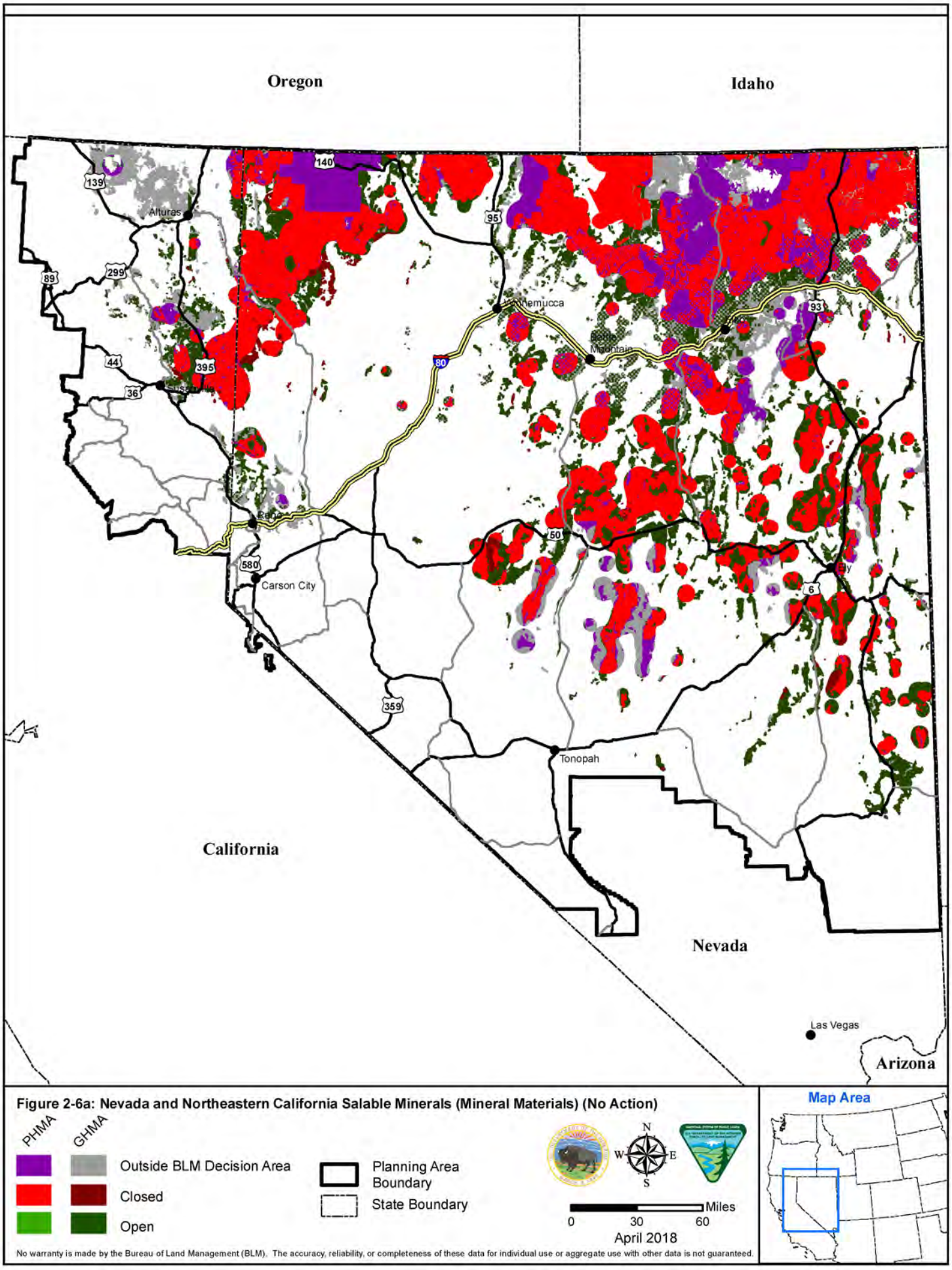


Figure 2-6a: Nevada and Northeastern California Salable Minerals (Mineral Materials) (No Action)

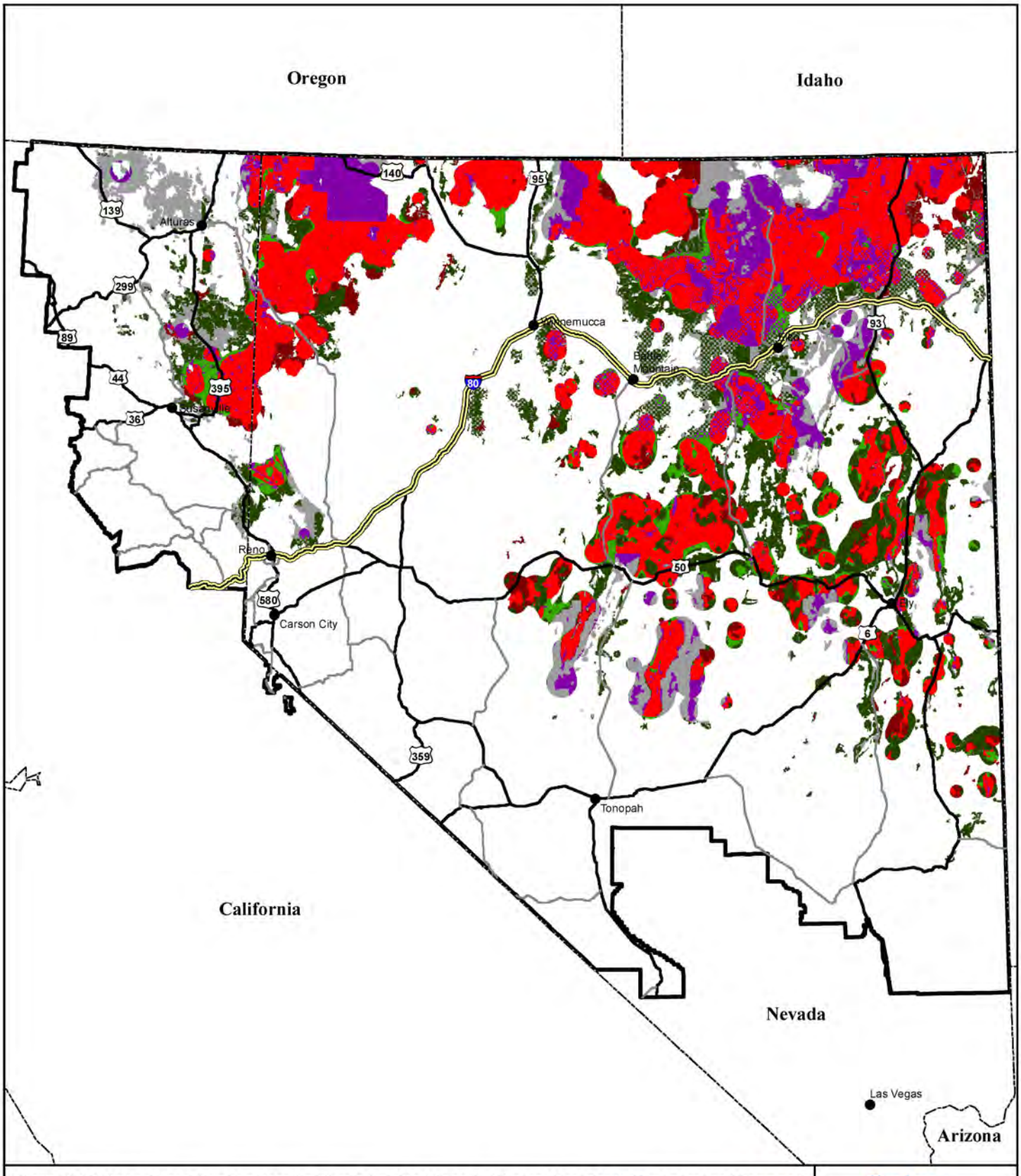


Figure 2-6b: Nevada and Northeastern California Salable Minerals (Mineral Materials) (Management Alignment)

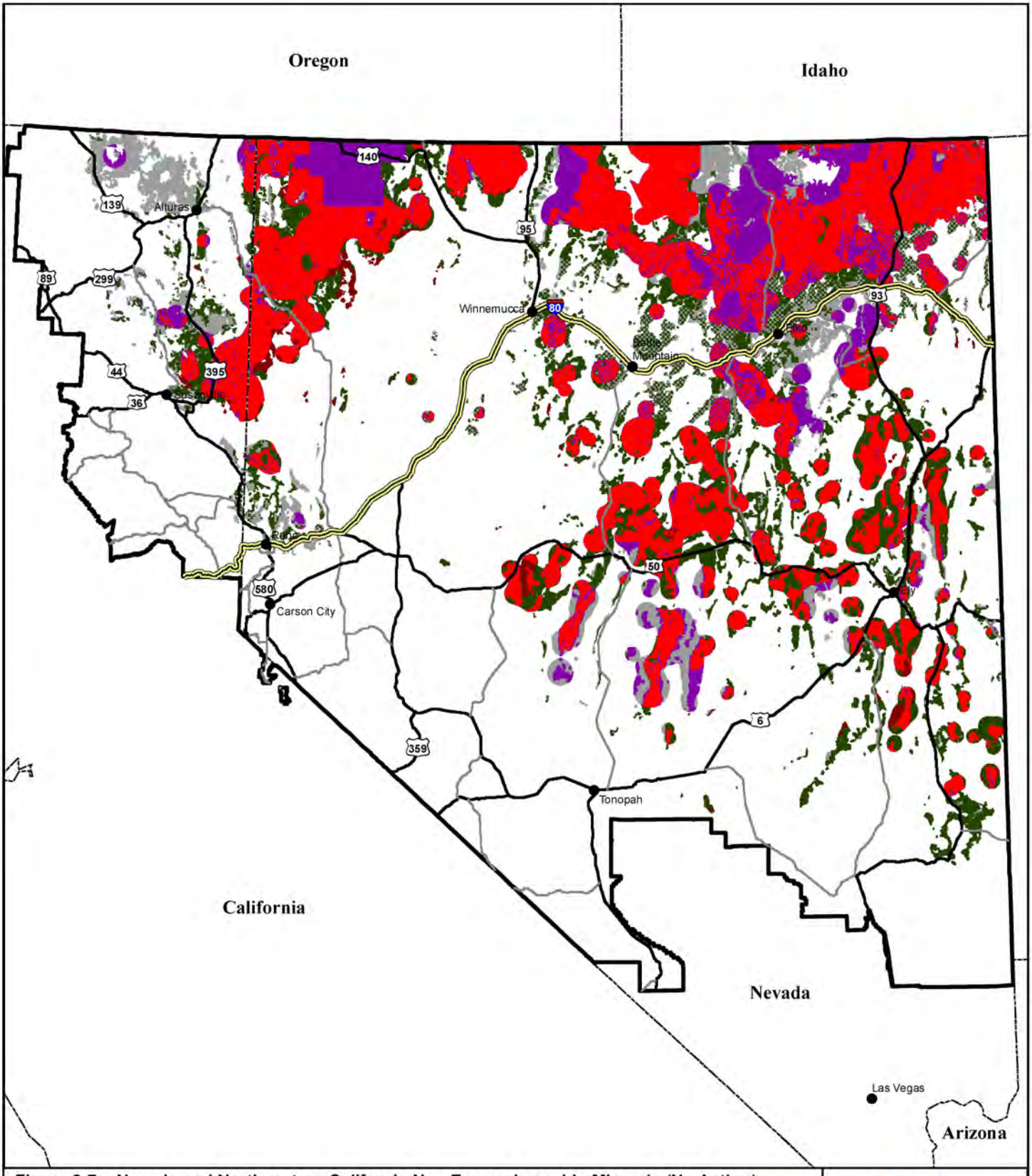


Figure 2-7a: Nevada and Northeastern California Non Energy Leasable Minerals (No Action)

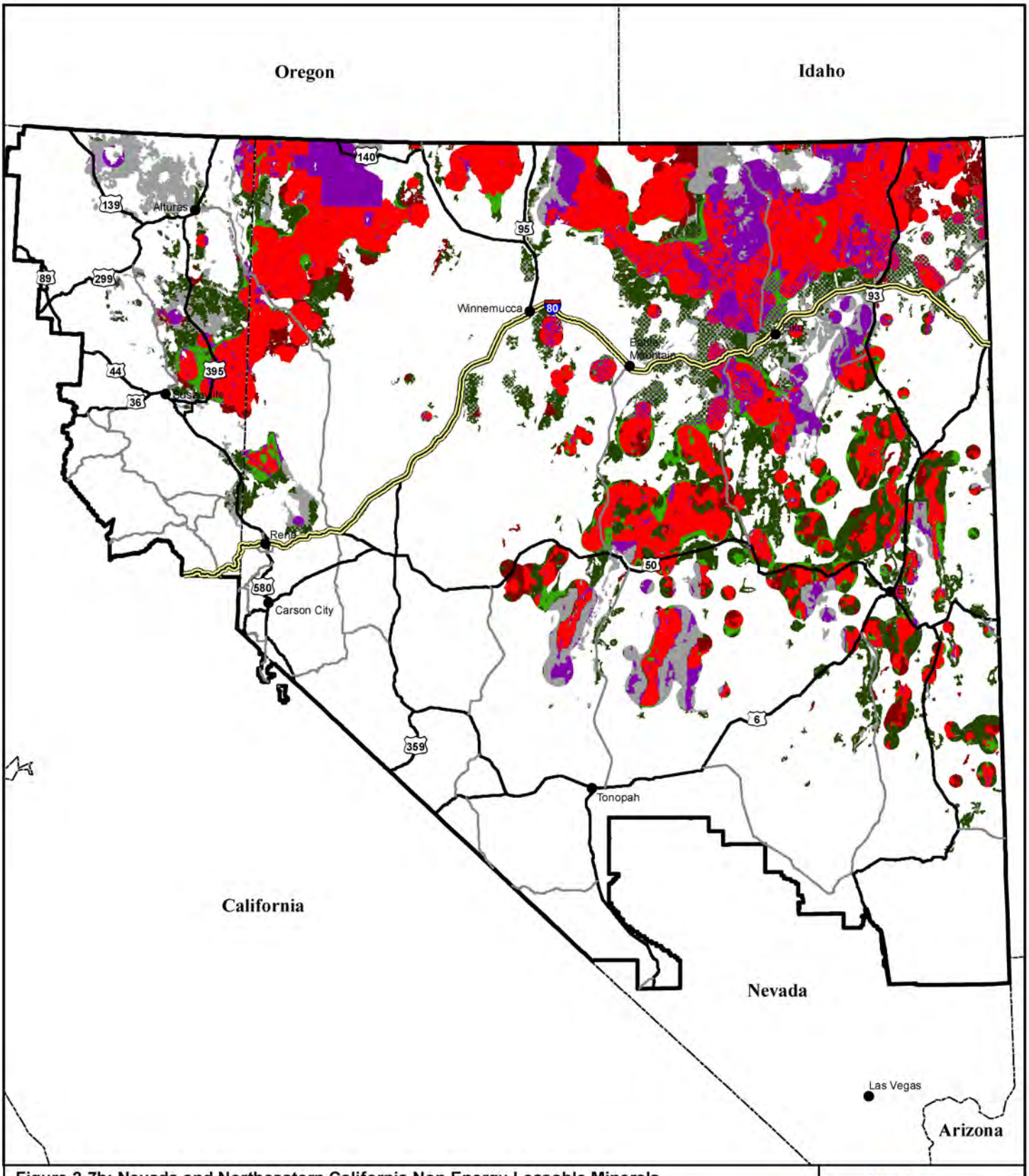


Figure 2-7b: Nevada and Northeastern California Non Energy Leasable Minerals (Management Alignment)

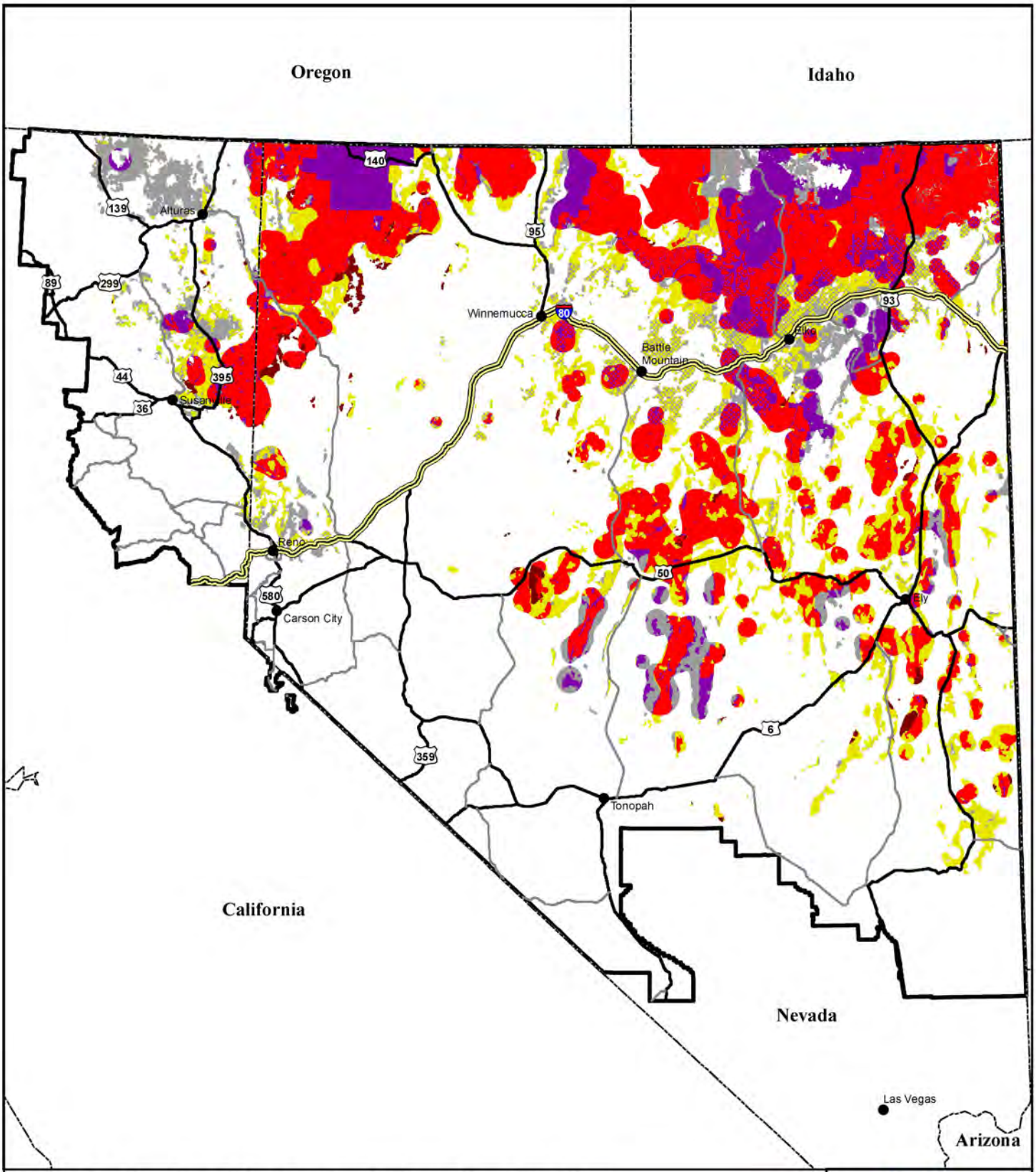


Figure 2-8a: Nevada and Northeastern California Wind (No Action)

PHMA GHMA

Outside BLM Decision Area

Exclusion

N/A Avoidance

Planning Area Boundary

State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

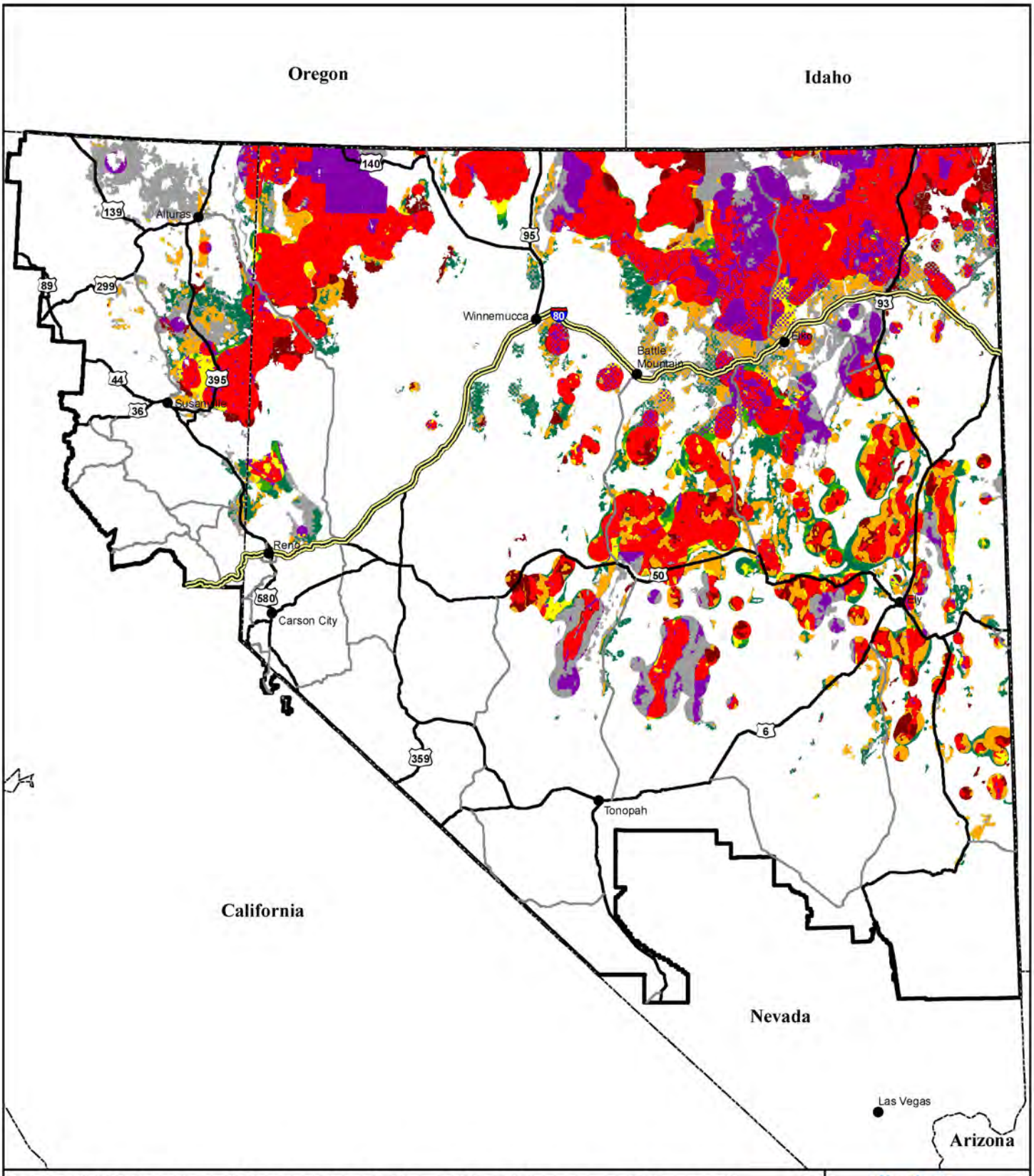


Figure 2-8b: Nevada and Northeastern California Wind (Management Alignment)

PHMA GHMA

- Outside BLM Decision Area
- Exclusion
- Avoidance
- Open

- Planning Area Boundary
- State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

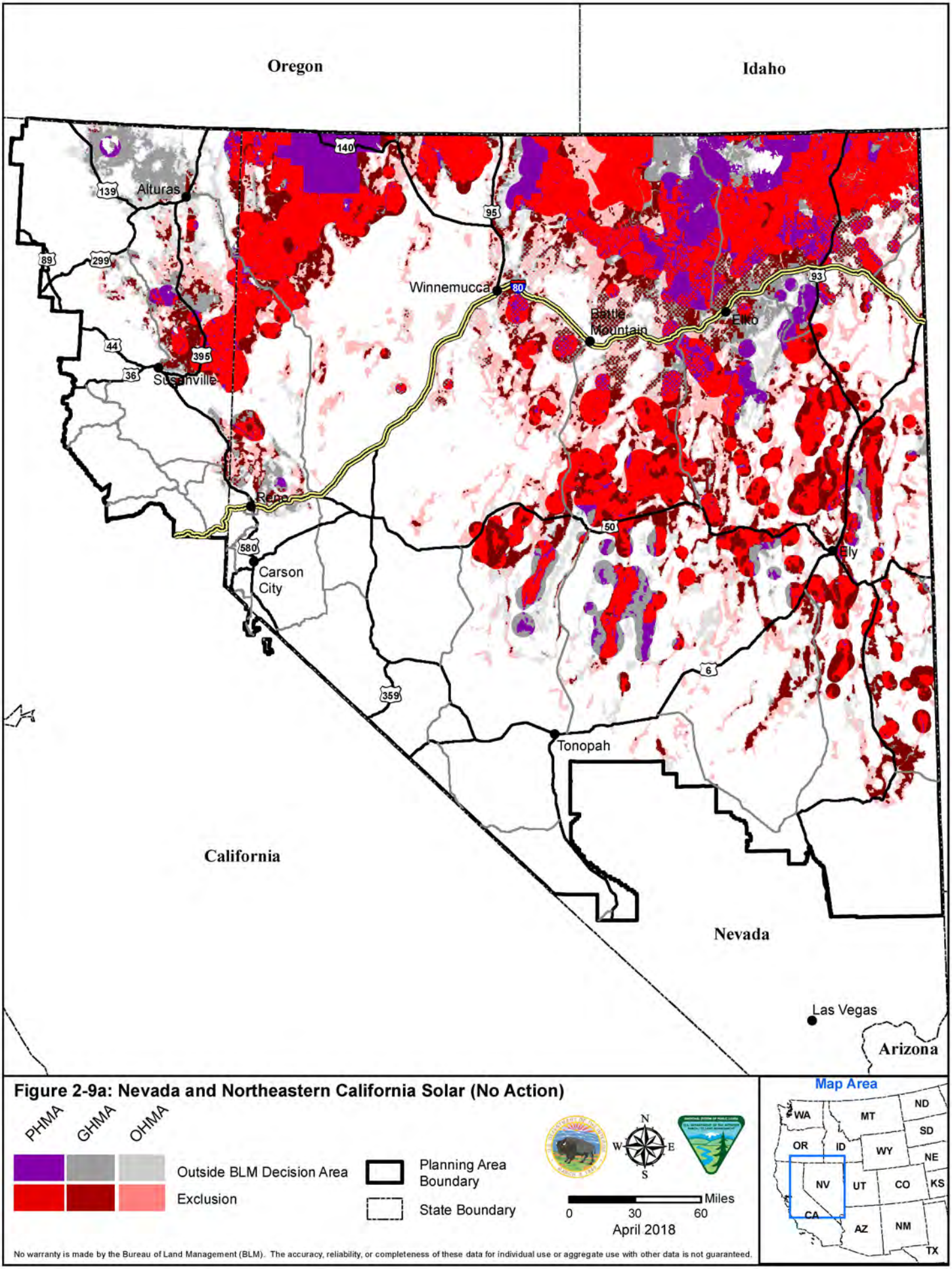


Figure 2-9a: Nevada and Northeastern California Solar (No Action)

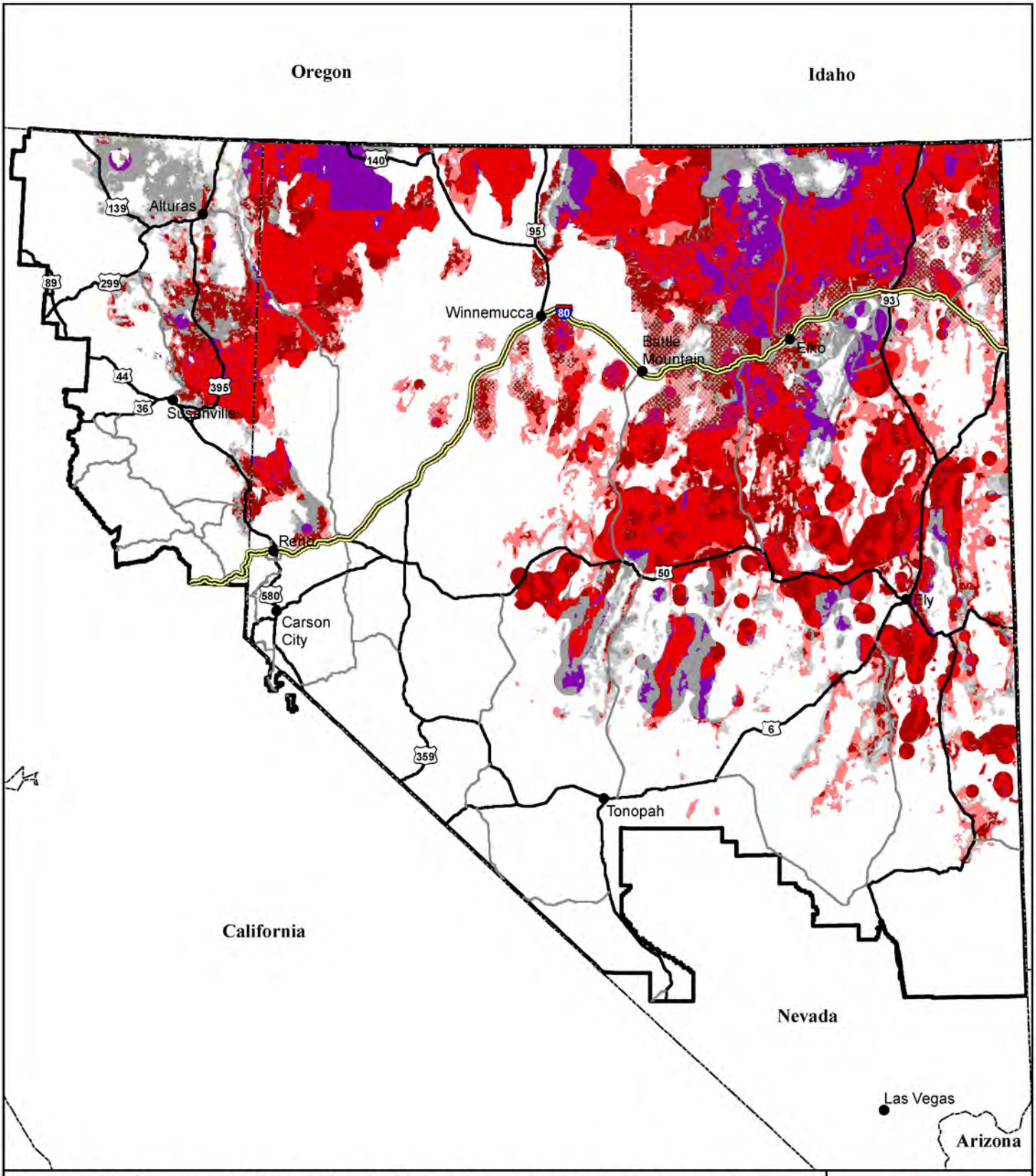


Figure 2-9b: Nevada and Northeastern California Solar (Management Alignment)

PHMA GHMA OHMA

Outside BLM Decision Area

Exclusion

Planning Area Boundary

State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

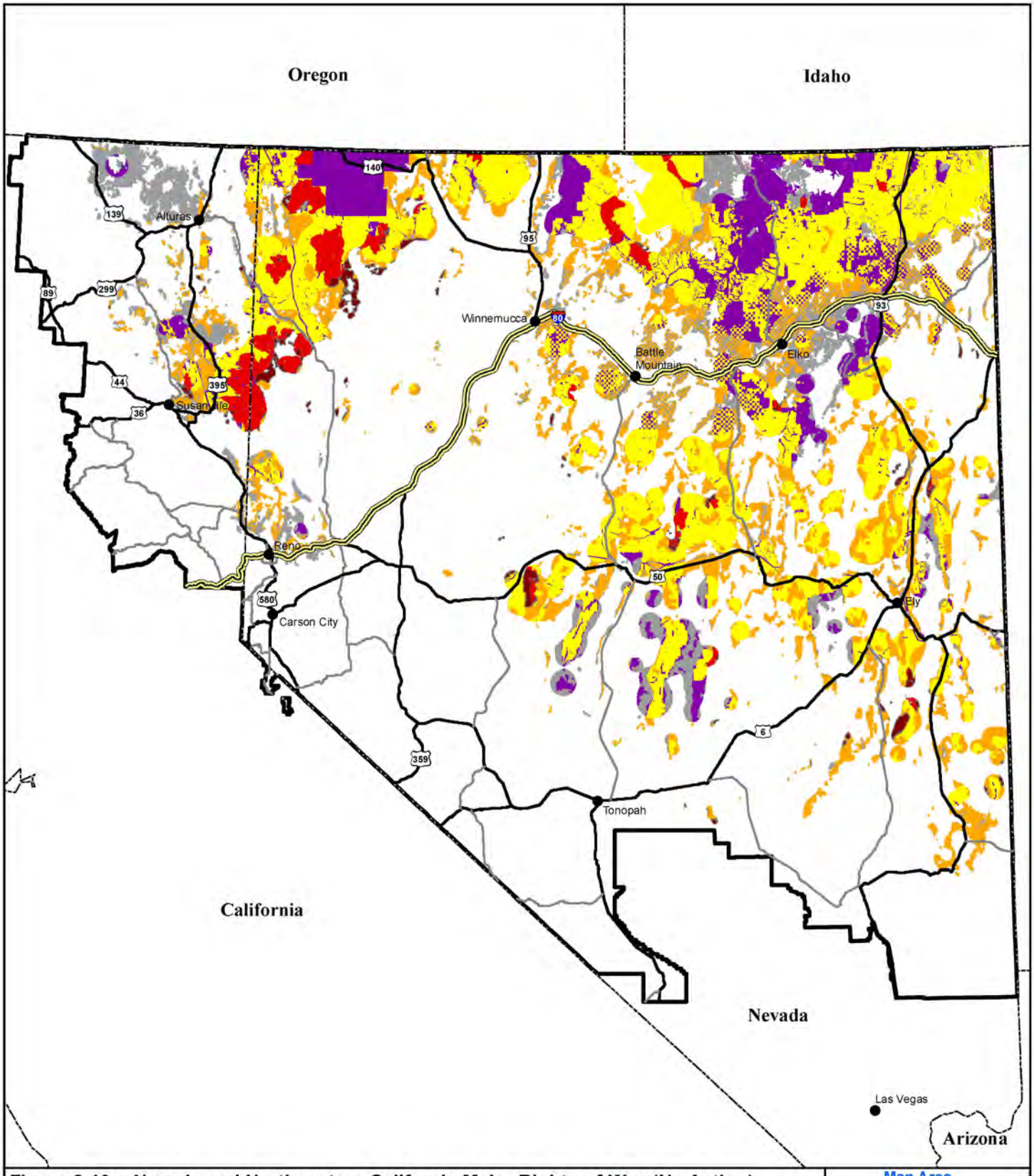


Figure 2-10a: Nevada and Northeastern California Major Rights-of-Way (No Action)

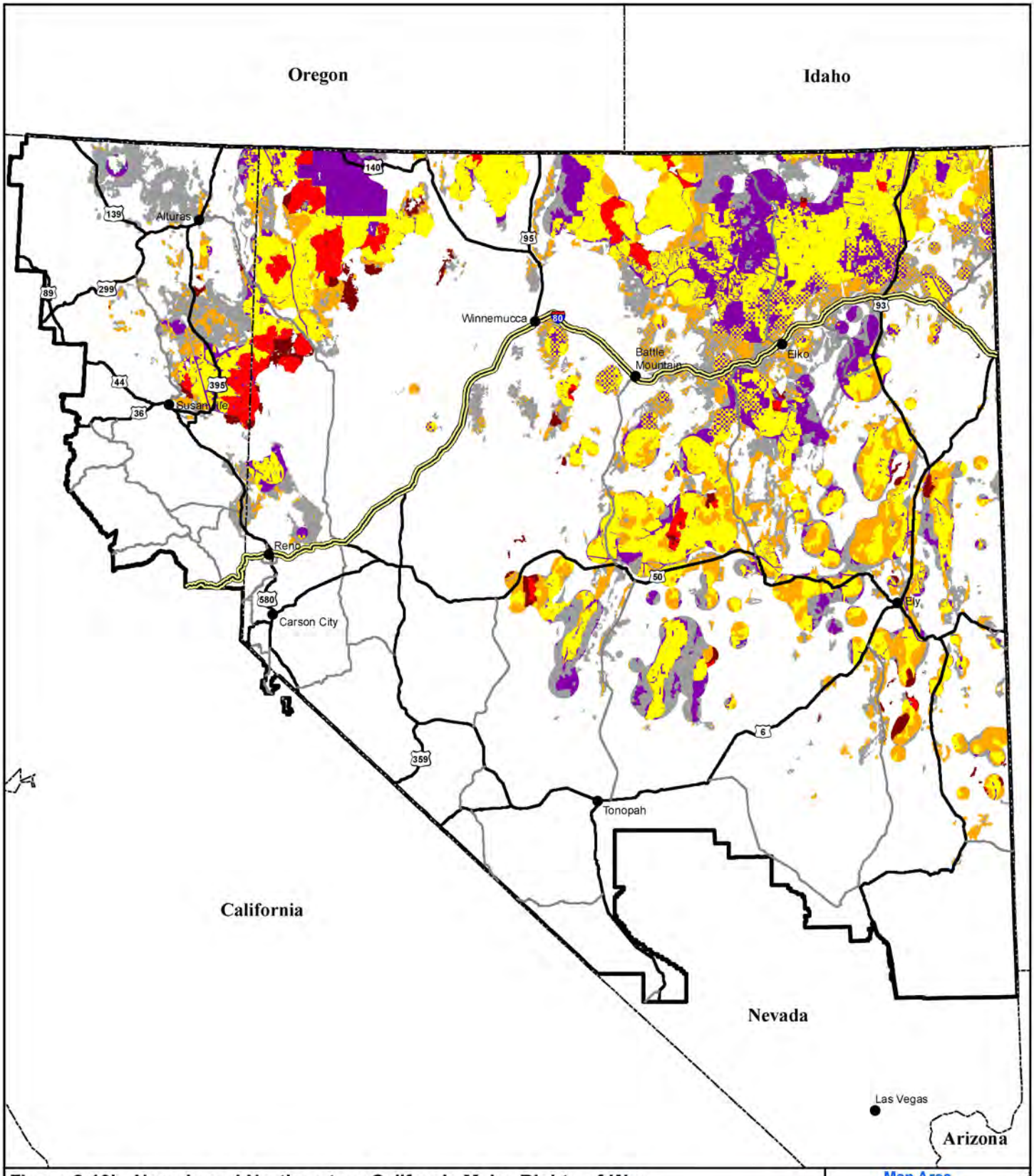


Figure 2-10b: Nevada and Northeastern California Major Rights-of-Way (Management Alignment)

PHMA GHMA

- Outside BLM Decision Area
- Exclusion
- Avoidance

- Planning Area Boundary
- State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

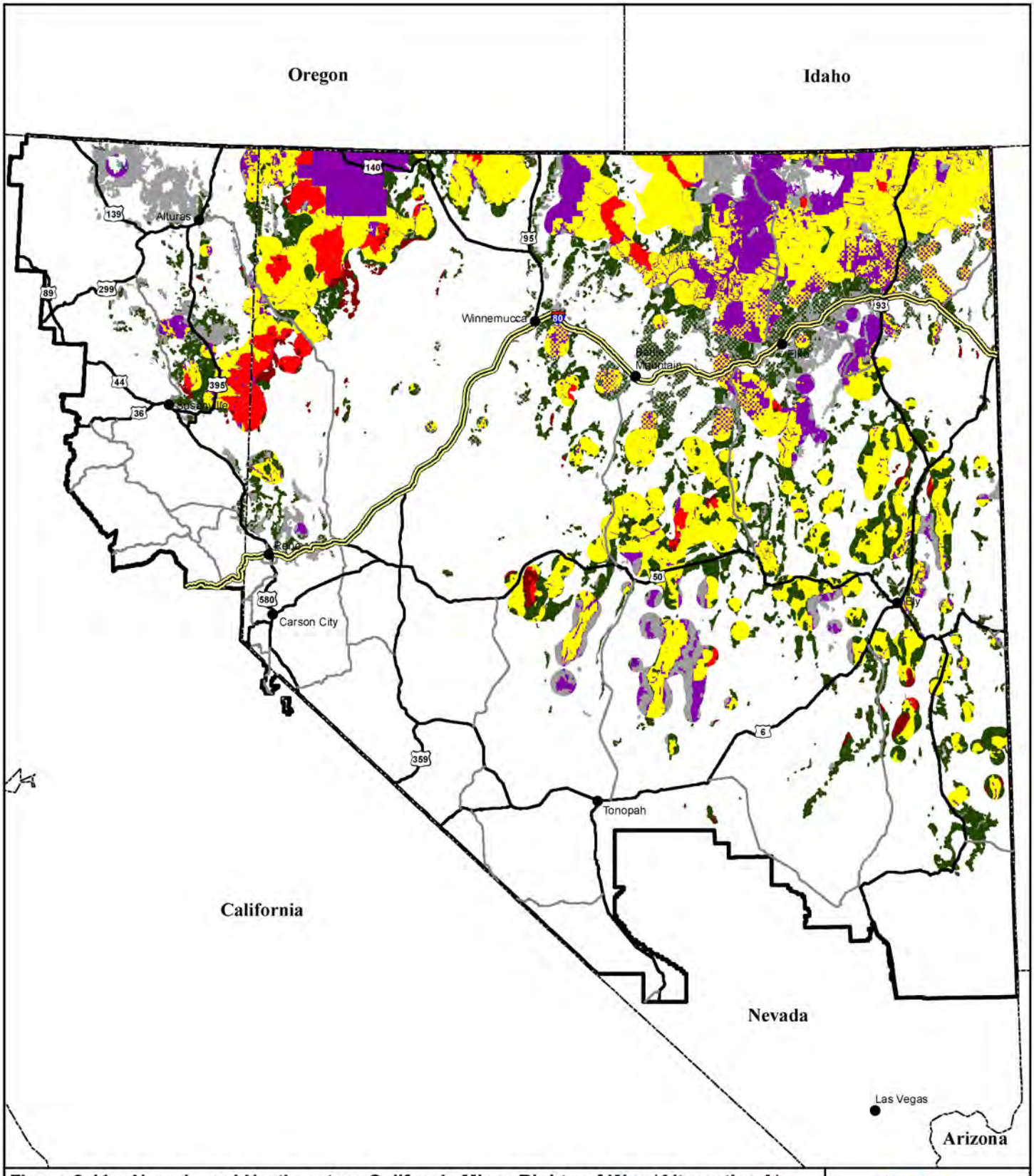


Figure 2-11a: Nevada and Northeastern California Minor Rights-of-Way (Alternative A)

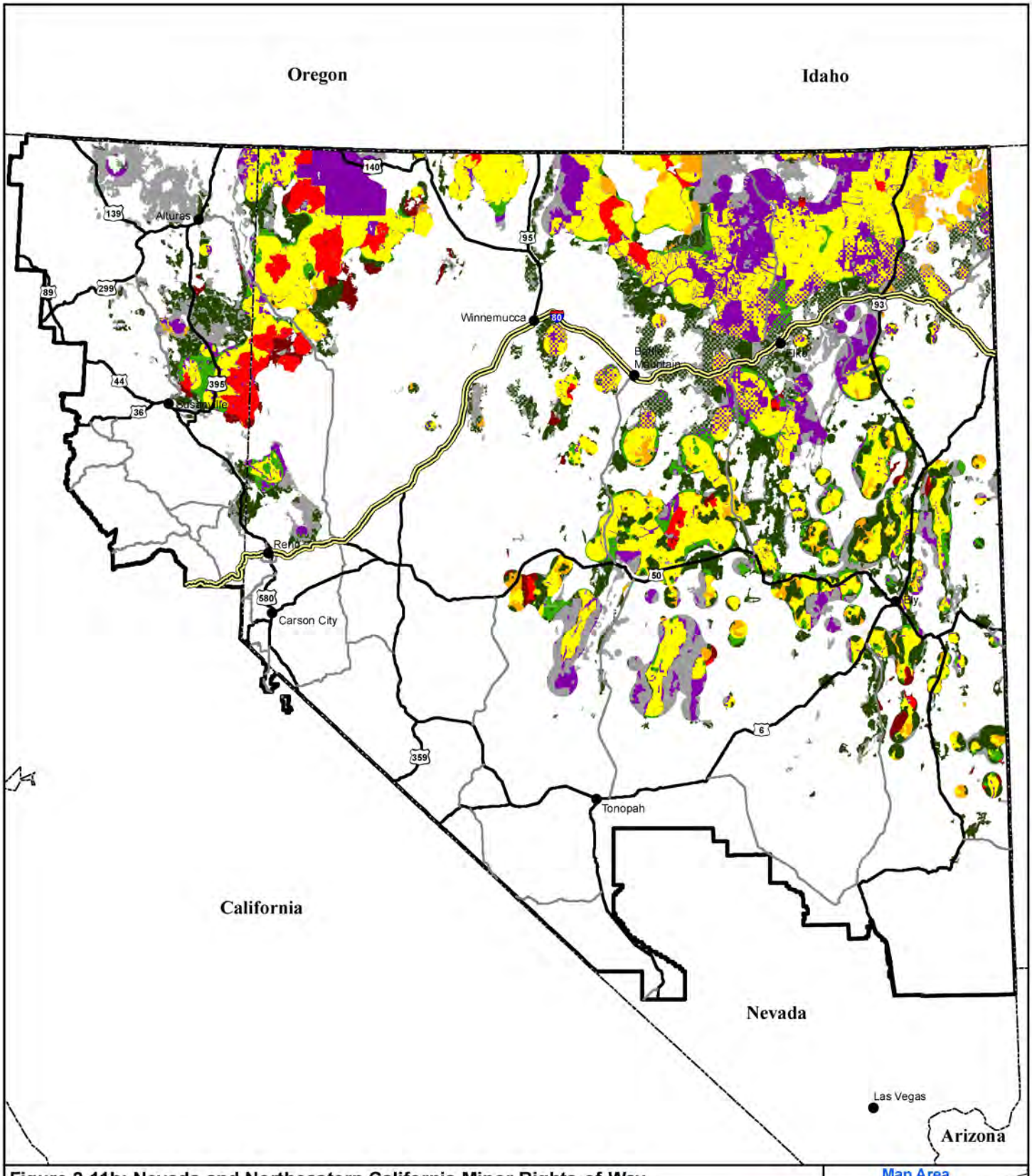


Figure 2-11b: Nevada and Northeastern California Minor Rights-of-Way (Management Alignment)

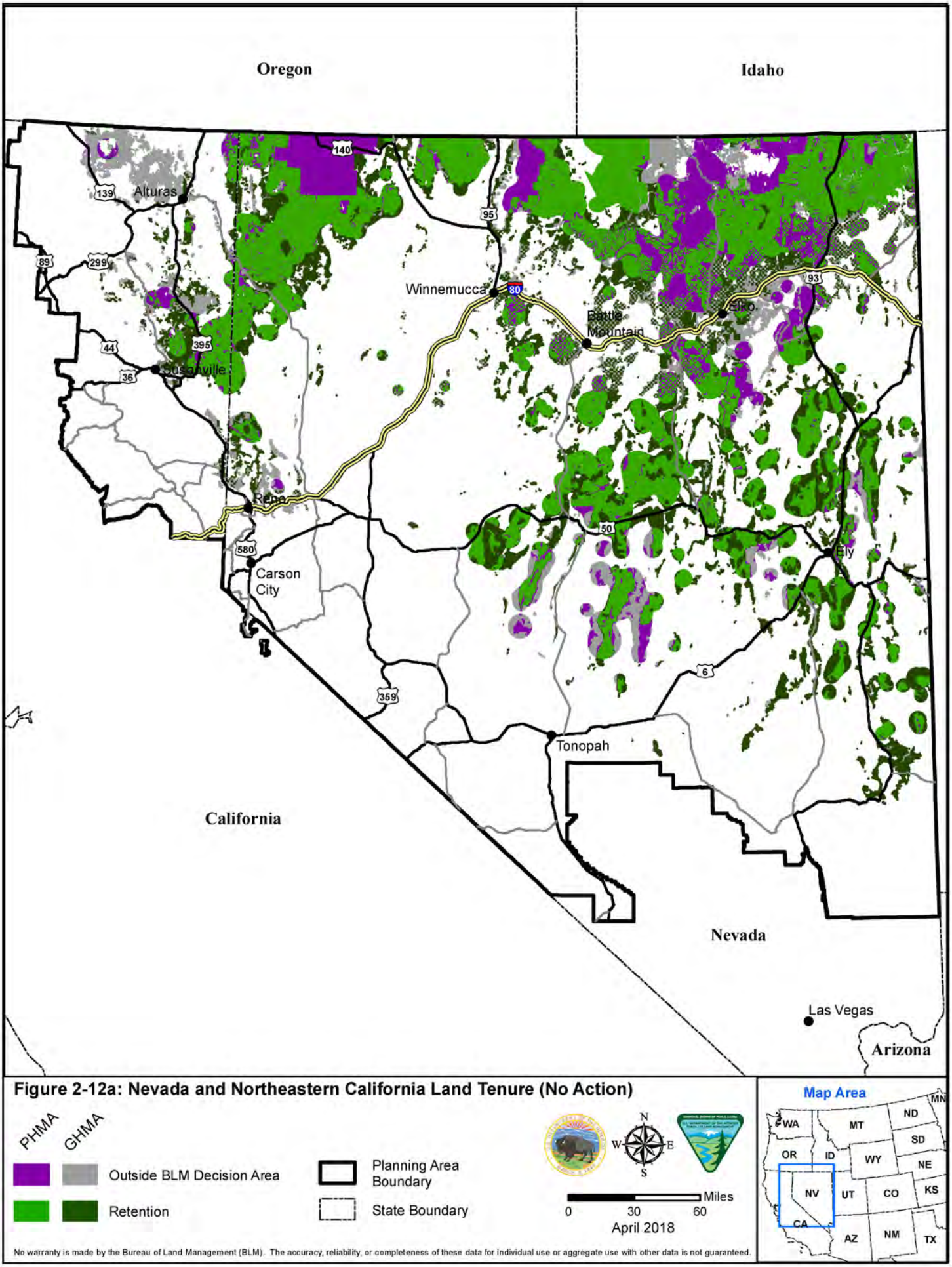


Figure 2-12a: Nevada and Northeastern California Land Tenure (No Action)

No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.

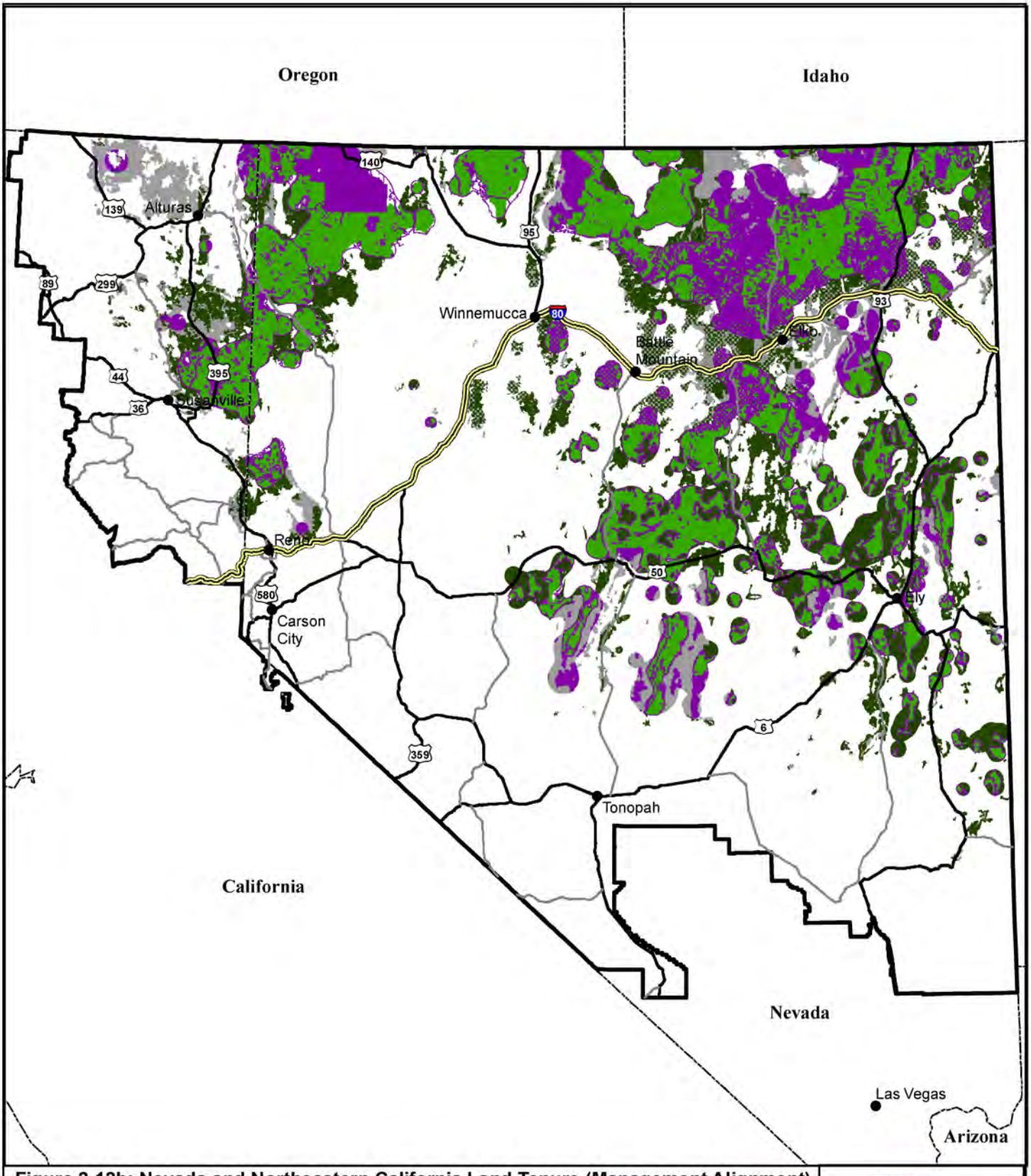


Figure 2-12b: Nevada and Northeastern California Land Tenure (Management Alignment)

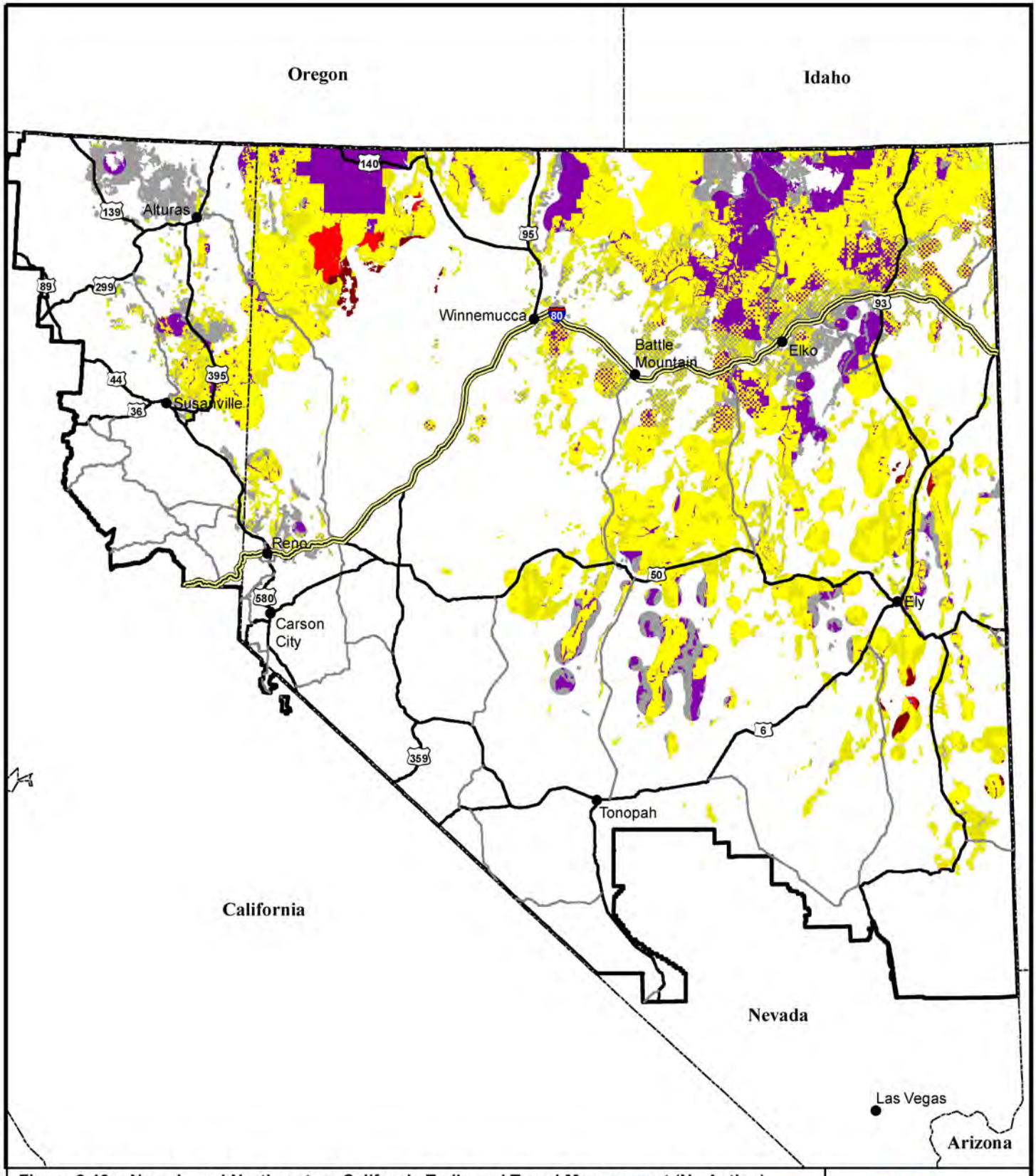


Figure 2-13a: Nevada and Northeastern California Trails and Travel Management (No Action)

PHMA GHMA

Outside BLM Decision Area
Closed
Limited

Planning Area Boundary
State Boundary

N W E S

Miles
0 30 60

April 2018

Map Area

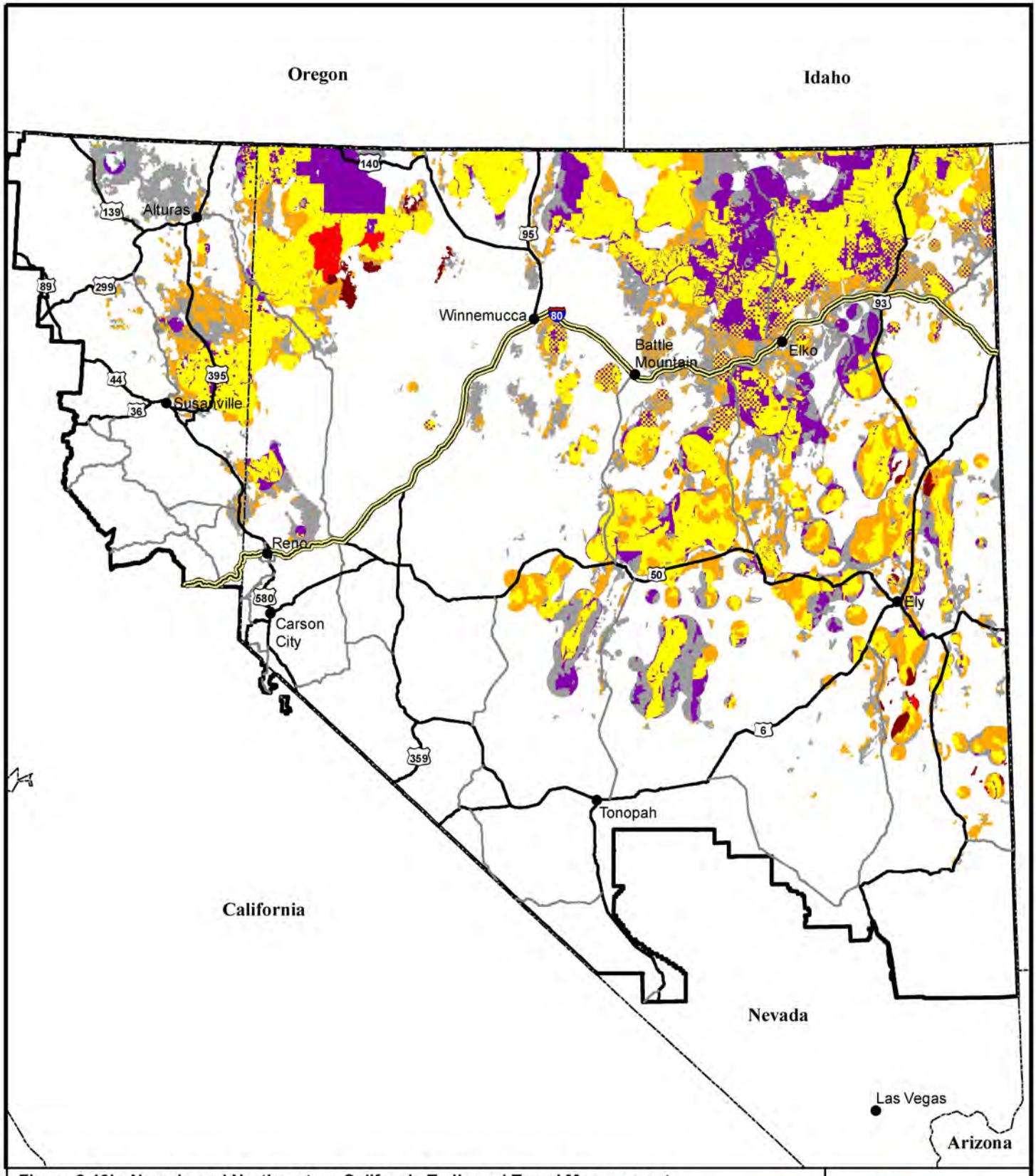


Figure 2-13b: Nevada and Northeastern California Trails and Travel Management (Management Alignment)

PHMA GHMA

Outside BLM Decision Area
Closed
Limited

Planning Area Boundary
State Boundary

N W E S

0 30 60 Miles

April 2018

Map Area

Appendix B

Lek Buffer-Distances (Evaluating Impacts on Leks)

Appendix B. Lek Buffer-Distances (Evaluating Impacts on Leks)

In addition to any other relevant information determined to be appropriate (e.g., state wildlife agency plans), the BLM, through project-specific NEPA analysis, will assess and address impacts from the following activities using the lower end of the interpreted range of lek buffer-distances as identified in the *USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239). Project-specific analysis should use the lower end of the interpreted range in the report as the basis for effects determination unless justifiable departures are determined to be appropriate (see below). The lower end of the interpreted range of the lek buffer-distances is as follows:

- linear features (roads) within 3.1 miles of leks
- infrastructure related to energy development within 3.1 miles of leks
- tall structures (e.g., communication or transmission towers, transmission lines) within 2 miles of leks
- low structures (e.g., fences and rangeland structures) within 1.2 miles of leks
- surface disturbance (continuing human activities that alter or remove the natural vegetation) within 3.1 miles of leks
- noise and related disruptive activities, including those that do not result in habitat loss (e.g., motorized recreational events), at least 0.25 miles from leks

Justifiable departures to decrease or increase from these distances from the lek where impacts are anticipated, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations and state regulations), may be appropriate. The USGS report recognized "that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the sage-grouse range." The USGS report also states, "various protection measures have been developed and implemented… [which have] the ability (alone or in concert with others) to protect important habitats, sustain populations, and support multiple-use demands for public lands." All departures from the lek buffer-distances identified above for impact assessments will require appropriate analysis and disclosure as part of NEPA.

The BLM will use the most recent active or occupied lek data available from the state wildlife agency to assess project-specific impacts.

B.1 For Actions in GHMA

The BLM, through NEPA analysis, should avoid or minimize actions in GHMA that are within the applicable lek buffer-distance identified above. If it is not possible to avoid or minimize impacts by relocating the project outside of the identified lek buffer-distance(s), the BLM may approve the project if:

- Based on best available science, landscape features, and other existing protections (e.g., land use allocations and state regulations), the BLM determines that a lek buffer-distance other than the applicable distance identified above offers the same or a greater level of protection to Greater Sage-Grouse and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area;
- The BLM determines that impacts on Greater Sage-Grouse and its habitat are minimized such that the project will cause minor or no new disturbance (e.g., collocation with existing authorizations);
- Range improvements do not impact Greater Sage-Grouse, or range improvements provide a conservation benefit to Greater Sage-Grouse such as fences for protecting important seasonal habitats;
- Mitigation has been developed and implemented that has the ability (alone or in concert with others) to protect the important habitats within the buffer area, and any residual impacts within the lek buffer-distances have been addressed.

B.2 FOR ACTIONS IN PHMA

The BLM, through NEPA analysis, should avoid actions in PHMA that are within the applicable lek buffer distance identified above. If it is not possible to avoid impacts by relocating the project outside of the identified lek buffer-distance(s), the BLM may approve the project if it is in accordance with actions identified above for GHMA, and with input from the state fish and wildlife agency.

The BLM will explain its justification for the analysis of buffer distances in its project decision record.

Appendix C

Required Design Features Worksheet

The worksheet below includes a list of design features that would be implemented for all authorized/permitted activities, consistent with applicable law (and consistent with the 2015 BLM Nevada and Northeastern California's Approved Resource Management Plan Amendment, MD SSS 2(C), SSS 3(B), and SSS 4. At the site-specific scale, BLM will document when an RDF is or is not applied to a particular project. If an RDF is not applied, this worksheet provides the BLM an opportunity to consistently document its rationale as to why that RDF if not applicable. This document will be placed in the project record and/or referenced in the project's NEPA analysis.

Project Name: **NEPA #:**

General RDFs		Applied	If RDF not applied, select reason:	
RDF Gen 1:	Locate new roads outside of GRSG habitat to the extent practical.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 2:	Avoid constructing roads within riparian areas and ephemeral drainages. Construct low water crossings at right angles to ephemeral drainages and stream crossings (note that such construction may require permitting under Sections 401 and 404 of the Clean Water Act).	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 3:	Limit construction of new roads where roads are already in existence and could be used or upgraded to meet the needs of the project or operation. Design roads to an appropriate standard, no higher than necessary, to accommodate intended purpose and level of use.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 4:	Coordinate road construction and use with ROW holders to minimize disturbance to the extent possible.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 5:	During project construction and operation, establish and post speed limits in GRSG habitat to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

Project Name: **NEPA #:**

RDF Gen 6:	Newly constructed project roads that access valid existing rights would not be managed as public access roads. Proponents will restrict access by employing traffic control devices such as signage, gates, and fencing.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF Gen 7:	Require dust abatement practices when authorizing use on roads.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
NO RDF 8 Identified			
RDF Gen 9:	Upon project completion, reclaim roads developed for project access on public lands unless, based on site-specific analysis, the route provides specific benefits for public access and does not contribute to resource conflicts.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF Gen 10:	Design or site permanent structures that create movement (e.g., pump jack/ windmill) to minimize impacts on GRSG habitat.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF Gen 11:	Equip temporary and permanent aboveground facilities with structures or devices that discourage nesting and perching of raptors, corvids, and other predators.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	

Project Name: **NEPA #:**

RDF Gen 12:	Control the spread and effects of nonnative, invasive plant species (e.g., by washing vehicles and equipment, minimize unnecessary surface disturbance; Evangelista et al. 2011). All projects would be required to have a noxious weed management plan in place prior to construction and operations.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 13:	Implement project site-cleaning practices to preclude the accumulation of debris, solid waste, putrescible wastes, and other potential anthropogenic subsidies for predators of GRSG.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 14:	Locate project related temporary housing sites outside of GRSG habitat.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 15:	When interim reclamation is required, irrigate site, in accordance with state laws, to establish seedlings more quickly if the site requires it.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 16:	Utilize mulching or other soil amendment techniques to expedite reclamation and to protect soils if the site requires it.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

Project Name: **NEPA #:**

RDF Gen 17:	Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 18:	When authorizing ground-disturbing activities, require the use of vegetation and soil reclamation standards suitable for the site type prior to construction.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 19:	Instruct all construction employees to avoid harassment and disturbance of wildlife, especially during the GRSG breeding (e.g., courtship and nesting) season. In addition, pets shall not be permitted on site during construction (BLM 2005b).	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 20:	To reduce predator perching in GRSG habitat, limit the construction of vertical facilities and fences to the minimum number and amount needed and install anti-perch devices where applicable.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Gen 21:	Outfit all reservoirs, pits, tanks, troughs or similar features with appropriate type and number of wildlife escape ramps (BLM 1990; Taylor and Tuttle 2007).	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

Project Name: **NEPA #:**

RDF Gen 22:	Load and unload all equipment on existing roads to minimize disturbance to vegetation and soil.	☐ Yes	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	

In addition to the General RDFs, apply Lands and Realty RDFs to PHMA, GHMA, and OHMA as appropriate and consistent with applicable law:

Project Name: **NEPA #:**

Lands and Realty RDFs*		Applied	If RDF not applied, select reason:	
RDF LR-LUA 1:	Where new ROWs associated with valid existing rights are required, co-locate new ROWs within existing ROWs or where it best minimizes impacts in GRSG habitat. Use existing roads or realignments of existing roads to access valid existing rights that are not yet developed.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF LR-LUA 2:	Do not issue ROWs to counties on newly constructed energy/mining development roads, unless for a temporary use consistent with all other terms and conditions included in this document.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF GEN (LR-LUA) 3:	Where necessary, fit transmission towers with anti-perch devices (Lammers and Collopy 2007) in GRSG habitat.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

***These RDFs also apply to other land use authorizations such as leases and permits**

In addition to the General RDFs, apply Fuels and Fire Management RDFs to PHMA, GHMA, and OHMA as appropriate and consistent with applicable law:

Project Name: **NEPA #:**

Fuels and Fire Management RDFs		Applied	If RDF not applied, select reason:	
RDF WFM 1:	Power-wash all firefighting vehicles, including engines, water tenders, personnel vehicles, and all-terrain vehicles (ATVs), prior to deploying in or near GRSG habitat to minimize the introduction and spread of undesirable and invasive plant species. (This is not applicable to initial attach vehicles.)	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF WFM 2:	Protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreational areas.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF WFM 3:	Reduce the risk of vehicle or human-caused wildfires and the spread of invasive species by planting perennial vegetation (e.g., green-strips) paralleling road rights-of-way.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

In addition to the General RDFs, apply Fluid Minerals RDFs to PHMA, GHMA, and OHMA as appropriate and consistent with applicable law:

Project Name: **NEPA #:**

Fluid Minerals RDFs		Applied	If RDF not applied, select reason:	
RDF Lease FM 1:	Co-locate power lines, flow lines, and small pipelines under or immediately adjacent to existing roads (Bui et al. 2010) in order to minimize or avoid disturbance.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Lease FM 2:	Cover, create barriers, or implement other effective deterrents (e.g., netting, fencing, birdballs, and sound cannons) for all ponds and tanks containing potentially toxic materials to reduce GRSG mortality.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Lease FM 3:	Require installation of noise shields to comply with noise restrictions (see Action SSS 7) when drilling during the breeding, nesting, brood-rearing, and/or wintering season. Require applicable GRSG seasonal timing restrictions when noise restrictions cannot be met (see Action SSS 6).	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF Lease FM 4:	Ensure habitat restoration meets GRSG habitat objectives (Table 2-2) for reclamation and restoration practices/sites (Pyke 2011).	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

Project Name: **NEPA #:**

RDF Lease FM 5:	Maximize the area of interim reclamation on long-term access roads and well pads, including reshaping, topsoil management, and revegetating cut-and-fill slopes.	☐ Yes	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF Lease FM 6:	Restore disturbed areas at final reclamation to the pre-disturbance landforms and meets the GRSG habitat objectives (Table 2-2).	☐ Yes	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF Lease FM 7:	Use only closed-loop systems for drilling operations and no reserve pits within GRSG habitat.	☐ Yes	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF Lease FM 8:	Place liquid gathering facilities outside of GRSG habitat. Have no tanks at well locations within GRSG habitat to minimize vehicle traffic and perching and nesting sites for aerial predators of GRSG.	☐ Yes	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF Lease FM 9:	In GRSG habitat, use remote monitoring techniques for production facilities and develop a plan to reduce vehicular traffic frequency of vehicle use (Lyon and Anderson 2003).	☐ Yes	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐ No	☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	

Project Name: **NEPA #:**

RDF Lease FM 10: Use dust abatement practices on well pads.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
	☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
		☐	A specific RDF will provide no additional protection to GRSG or its habitat.
	Rationale if RDF is not applied:		
RDF Lease FM 11: Cluster disturbances associated with operations and facilities as close as possible, unless site-specific conditions indicate that disturbances to GRSG habitat would be reduced if operations and facilities locations would best fit a unique special arrangement.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
	☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
		☐	A specific RDF will provide no additional protection to GRSG or its habitat.
	Rationale if RDF is not applied:		
RDF Lease FM 12: Apply a phased development approach with concurrent reclamation.	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
	☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
		☐	A specific RDF will provide no additional protection to GRSG or its habitat.
	Rationale if RDF is not applied:		
RDF Lease FM 13: Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus (Dougherty 2007).	☐ Yes	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
	☐ No	☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
		☐	A specific RDF will provide no additional protection to GRSG or its habitat.
	Rationale if RDF is not applied:		

Project Name: **NEPA #:**

RDF Lease FM 14: In GRSG habitat, remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues, use the following steps for reservoir design to limit favorable mosquito habitat (Doherty 2007): • Overbuild size of ponds for muddy and non-vegetated shorelines • Build steep shorelines to decrease vegetation and increase wave actions • Avoid flooding terrestrial vegetation in flat terrain or low lying areas • Construct dams or impoundments that restrict down slope seepage or overflow • Line the channel where discharge water flows into the pond with crushed rock • Construct spillway with steep sides and line it with crushed rock. • Treat waters with larvicides to reduce mosquito production where water occurs on the surface	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
		☐	A specific RDF will provide no additional protection to GRSG or its habitat.
	Rationale if RDF is not applied:		
RDF Lease FM 15: Consider using oak (or other material) mats for drilling activities to reduce vegetation disturbance and for roads between closely spaced wells to reduce soil compaction and maintain soil structure to increase likelihood of vegetation reestablishment following drilling.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
		☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
		☐	A specific RDF will provide no additional protection to GRSG or its habitat.
	Rationale if RDF is not applied:		

In addition to the General RDFs, apply Locatable Minerals RDFs to PHMA, GHMA, and OHMA as appropriate and consistent with applicable law:

Project Name: **NEPA #:**

Locatable Minerals RDFs		Applied	If RDF not applied, select reason:	
RDF LOC 1:	Install noise shields to comply with noise restrictions (see Action SSS 7) when drilling during the breeding, nesting, brood-rearing, and/or wintering season. Apply GRSG seasonal timing restrictions when noise restrictions cannot be met (see Action SSS 6).	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF LOC 2:	Cluster disturbances associated with operations and facilities as close as possible, unless site-specific conditions indicate that disturbances to GRSG habitat would be reduced if operations and facilities locations would best fit a unique special arrangement.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF LOC 3:	Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus (Dougherty 2007).	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable.
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

Project Name: **NEPA #:**

RDF LOC 4:	Remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues, use the following steps for reservoir design to limit favorable mosquito habitat (Doherty 2007): • Overbuild size of ponds for muddy and non-vegetated shorelines • Build steep shorelines to decrease vegetation and increase wave actions • Avoid flooding terrestrial vegetation in flat terrain or low lying areas • Construct dams or impoundments that restrict down slope seepage or overflow • Line the channel where discharge water flows into the pond with crushed rock • Construct spillway with steep sides and line it with crushed rock. • Treat waters with larvicides to reduce mosquito production where water occurs on the surface	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF LOC 5:	Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve sage-grouse habitat needs.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF LOC 6:	Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, topsoiling and revegetating cut and fill slopes.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	
RDF LOC 7:	Cover (e.g., fine mesh netting or use other effective techniques) all pits and tanks regardless of size to reduce sage-grouse mortality.	☐ Yes ☐ No	☐ A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. ☐ An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____ ☐ A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:	

In addition to the General RDFs, apply Comprehensive Travel and Transportation Management RDFs to PHMA, GHMA, and OHMA as appropriate and consistent with applicable law:

Project Name: **NEPA #:**

Comprehensive Travel and Transportation Management RDFs		Applied	If RDF not applied, select reason:	
RDF CTTM 1:	Rehabilitate roads, primitive roads, and trails not designated in approved travel management plans.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		
RDF CTTM 2:	Reclaim closed duplicate roads by restoring original landform and establishing desired vegetation in GRSG habitat in accordance with GRSG habitat objectives (Table 2-2) as identified in travel management planning.	☐ Yes ☐ No	☐	A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that
			☐	An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. Alternative RDF # _____
			☐	A specific RDF will provide no additional protection to GRSG or its habitat.
		Rationale if RDF is not applied:		

Appendix D
Adaptive Management Plan

Appendix D. Adaptive Management Plan

D.1 Introduction

Adaptive management is a decision process that promotes flexible resource management decision-making. These decisions can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Carefully monitoring these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative learning process.

On February 1, 2008, the Department of the Interior published its Adaptive Management Implementation Policy (522 DM 1). The adaptive management strategy presented in this RMPA/EIS complies with this policy and direction, as well as the DOI's Adaptive Management Technical Guide (DOI 2009).

Adaptive management would help identify if Greater Sage-Grouse conservation measures presented in this RMPA/EIS contain the needed level of certainty for effectiveness. Principles of adaptive management are incorporated into the conservation measures in the LUPA to lessen threats to Greater Sage-Grouse and its habitat, thereby increasing the likelihood that the conservation measures and plan would be effective in reducing threats to them.

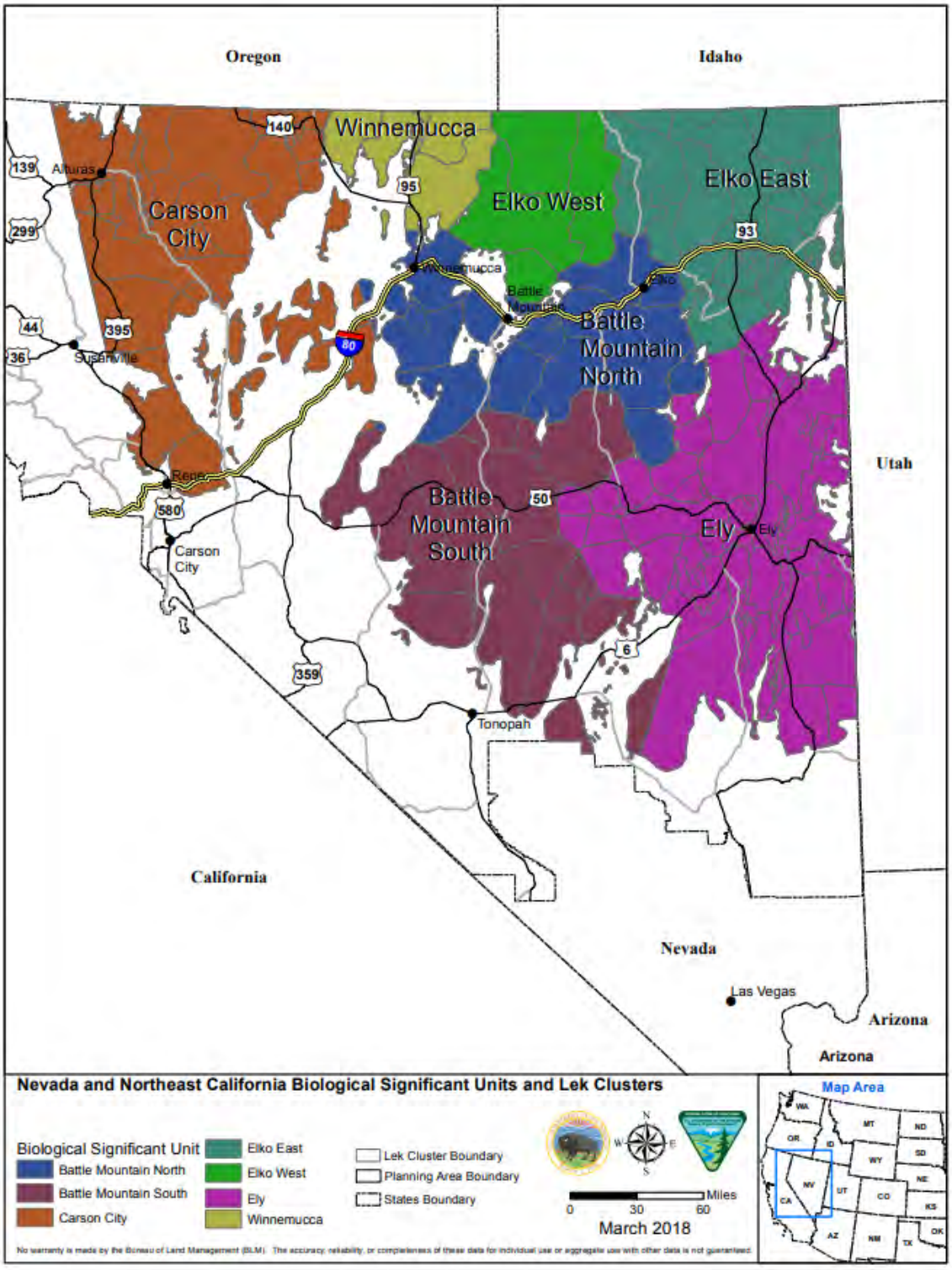
The following provides the BLM's adaptive management strategy for the Nevada and Northeastern California Greater Sage-Grouse Sub-region LUPA.

The adaptive management strategy includes soft and hard triggers (signals) and responses. The triggers (signals) are not specific to any particular project, but identify Greater Sage-Grouse population and habitat thresholds outside of natural fluctuations or variations. Triggers (signals) are based on the two key metrics that are being monitored: population declines and habitat loss. Adaptive management, with specific triggers (signals), provide additional certainty that the regulatory mechanisms included in the LUPA are robust and able to respond to a variety of conditions and circumstances quickly and effectively to conserve Greater Sage-Grouse habitat and populations. Tripping a soft and/or hard trigger (signal) will initiate a local-state-federal interagency dialogue to evaluate causal factors and recommend adjustments to implementation-level activities to reverse the trend.

D.2 Adaptive Management Analysis Scales

The scales used to analyze adaptive management triggers (signals) and apply adaptive management responses are at the lek, lek cluster, and biologically significant units (BSU) as defined below. The boundaries of the BSU and lek clusters may be adjusted over time, based on the understanding of local Greater Sage-Grouse population interactions, genetic sampling, and climate variation. Population and habitat monitoring methods may be updated based on new science and advances in technology (e.g., integrated population models).

Map D-1. Biologically Significant Units and Lek Clusters for Greater Sage-Grouse in the Nevada and Northeastern California Sub-region



The hierarchy of Greater Sage-Grouse population and habitat scales is as follows:

- Lek—Individual breeding display sites where male and female Greater Sage-Grouse congregate, with males performing courtship displays to gain mating opportunities with females
- Lek cluster—A group of leks in the same vicinity, between which Greater Sage-Grouse may interchange over time and representing a group of closely related individuals
- BSU—Represents nested lek clusters with similar climates and vegetation conditions

D.3 Definitions of Adaptive Management Soft and Hard Triggers (Signals)

D.3.1 Soft Triggers (Signals)

Soft triggers (signals) represent an intermediate threshold indicating that management changes are needed at the project or implementation level to address Greater Sage-Grouse population and habitat declines. If a soft trigger (signal) is reached, the BLM would apply additional implementation-level management responses to alleviate the known or probable causes in the decline of Greater Sage-Grouse habitat or populations with consideration of local knowledge and conditions.

D.3.2 Hard Triggers (Signals)

Hard triggers (signals) represent a threshold indicating that immediate action is necessary to stop a severe deviation from Greater Sage-Grouse conservation goals and objectives, as set forth in the LUPA.

D.4 Adaptive Management Population Analysis

D.4.1 Population Growth Rate Calculation for Triggers (Signals)

The Greater Sage-Grouse state-space model (Coates et al. 2017) will be used to estimate the rate of Greater Sage-Grouse population growth and the number of males at three hierarchically nested spatial scales: individual lek, lek cluster, and BSU. Lek count data collected by NDOW and CDFW will inform the state-space model, and are used to determine thresholds for population stability and decoupling from higher-order scales. Some lek clusters may need additional monitoring of leks to gain adequate sampling data in order to be modeled (Coates et al. 2017).

D.4.2 Population Soft and Hard Triggers (Signals)

Modeled growth rates from Greater Sage-Grouse population estimates will be calculated at the relevant management level annually as lek data are finalized by the state wildlife management agencies. The Greater Sage-Grouse state-space model will be used to establish population growth rates at the lek, lek cluster, and BSU levels. The rate at which population stability declines and decouples at the scale of interest from the specified higher-order scale dictates whether or not a soft or hard trigger (signal) is reached. Thresholds for stability and decoupling for soft and hard triggers (signals) were determined from simulation analyses that used 17 years of lek data (2000–2016). These simulations estimated the range of values where management actions would have an effect on stabilizing population growth or synchronizing decoupled scales. The threshold value for each criteria represents the most likely threshold value (from a range of values), that if crossed, would associate most strongly with continued decline or decoupling if management action is not taken (Coates et al. 2017).

Information on the methods used to determine if a soft or hard trigger (signal) has been tripped at the lek, lek cluster, or BSU can be found in Coates et al. 2017.

D.5 ADAPTIVE MANAGEMENT HABITAT ANALYSIS

D.5.1 Habitat Trends for Triggers (Signals)

Triggers (signals) for habitat trends would be evaluated at the lek cluster and BSU scales and would be based on changes in the percentage of sagebrush cover. Habitat triggers (signals) would be calculated using sagebrush cover data derived from imagery and compared with baseline data.

D.5.2 Habitat Soft and Hard Triggers (Signals)

1. At the lek cluster scale:

    a. In areas with 25 to 65 percent sagebrush cover, if there were a decline in sagebrush cover of 2 percent, then a soft trigger (signal) would be hit. A hard trigger (signal) would be hit if there were a decline of 5 percent or greater of sagebrush cover.

    b. In areas with greater than 65 percent landscape sagebrush cover, a soft trigger (signal) would be hit if there were a decline of 5 percent in landscape sagebrush cover. A hard trigger (signal) would be hit if there were a decline of 10 percent or greater in landscape sagebrush cover.

2. At the BSU:

    a. In areas with 25 to 65 percent sagebrush cover, if there were a decline in sagebrush cover of 2 percent, then a soft trigger (signal) would be hit. A hard trigger (signal) would be hit if there were a decline of 5 percent or greater of sagebrush cover.

    b. In areas with greater than 65 percent landscape sagebrush cover, a soft trigger (signal) would be hit if there were a decline of 5 percent in landscape sagebrush cover. A hard trigger (signal) would be hit if there were a decline of 10 percent or greater in landscape sagebrush cover.

    c. If soft triggers (signals) are hit for both Greater Sage-Grouse habitat and populations within a BSU in any given year, this would result in a hard trigger (signal) response for that BSU.

D.6 TRIGGER (SIGNAL) RESPONSES AND CAUSAL FACTOR ANALYSIS PROCESS

Step 1-Assessment of Greater Sage-Grouse Population and Habitat Baseline Conditions: In coordination with appropriate federal, state, and local partners (including local area conservation groups), the BLM will use the processes outlined above to evaluate population and habitat data to determine if the adaptive management soft and hard triggers (signals; addressed above) have been reached. This step should occur as soon as practicable after population data from the state wildlife agencies are available (fall of each year), and habitat data will be updated by the BLM and National Operations Center once imagery data are updated. A determination regarding whether a hard or soft trigger (signal) has been reached will be made before proceeding to Step 2. Once the annual population and habitat information has been assessed and hard or soft triggers (signals) have been identified, the BLM will notify the appropriate district and field offices. The offices will consider whether approval of pending authorizations within the affected adaptive management response area (lek cluster or BSU)

would exacerbate the trigger (signal) or would otherwise be inconsistent with the trigger (signal) responses.

Step 2-Determine the Causal Factor: Within 4 weeks (or sooner if possible) after Step 1 is completed and a finding has been made that a soft or hard trigger (signal) has been reached, the BLM will organize a group of federal, state, and local partners (including local area conservation groups) to conduct the causal factor analysis that will identify why a soft and/or hard trigger (signal) was reached at the lek cluster and/or BSU scale. The casual factor analysis area at each scale is as follows:

a. Lek cluster: Greater Sage-Grouse seasonal habitats associated with the lek cluster

b. BSU: Greater Sage-Grouse seasonal habitats associated with the BSU

Identifying the cause of reaching a trigger (signal) and appropriate responses requires answering a series of questions. These questions should examine the factors supporting the proximate cause in order to better identify the casual factors and determine the appropriate response(s) to reverse the trigger (signal). Questions to be answered may include, but are not limited to the following:

- What is the magnitude of the impact on Greater Sage-Grouse and/or its habitat?
- Is the impact temporary or permanent?
- Can Greater Sage-Grouse populations and/or habitat recover on their own without intervention?
- What is the expected length of the recovery period?
- Can the management actions already included in the plan accelerate recovery or are different actions necessary?
- What role, if any, did factors and events outside the affected area play in the event or activity outcomes?
- Did the event or outcome arise from the interaction of more than one potential causal factor?

Findings from this causal factor analysis process (including, but not limited to the responses to the above questions) should be documented in a report, which will be prepared by the BLM in cooperation with appropriate federal, state, and local partners (including local area conservation groups).

Step 3-Identify Appropriate Trigger (Signal) Responses: Within the same report identified in Step 2, the BLM will also identify the appropriate trigger (signal) responses that will be applied to the lek cluster and/or BSU that has tripped a trigger (signal) in coordination with the same agencies and partners identified in Step 2. Types of actions the BLM could evaluate or consider applying within a lek cluster and/or BSU during the analysis to address a soft trigger (signal) may include the following, but not be limited to:

- Halting or delaying planned prescribed fire
- Increasing fire prevention patrols
- Increasing fire prevention inspections of motorized equipment
- Prohibiting open campfires outside of established fire pits and outside of stoves in designated recreation areas

- Increasing inspections to ensure required design features for limiting the spread of invasive plants are being followed
- Increasing surveys to detect and treat new infestations of invasive plants, especially invasive annual grasses
- Delaying any planned vegetation treatments until after the breeding and brood-rearing season
- Halting or delaying planned fuels treatments in Greater Sage-Grouse winter habitat
- Delaying issuance of new permits and authorizations
- Installing anti-perching devices on tall structures
- Installing bird flight diverters on guy wires and fences
- Delaying issuance of new or pending ROWs outside of existing designated corridors
- Delaying planned construction of new recreation facilities (e.g., kiosks, toilets, and signs)
- Increasing litter patrols in and around heavily used recreation areas
- Increasing educational contacts with visitors concerning the role of litter and garbage in attracting Greater Sage-Grouse predators
- Increasing enforcement efforts on travel restrictions
- Limiting noise and/or light pollution

In addition, if a soft trigger (signal) has been tripped, the same group of federal, state, and local partners (including local area conservation groups) that helped define the casual factor(s) will also develop an emergency/contingency plan that will outline immediate management actions that will take place, in the event a hard trigger (signal) is reached. Such a plan should include goals, objective, management actions, and monitoring requirements developed specifically for the appropriate geographic area and/or population being affected (e.g., lek cluster, BSU).

If a hard trigger (signal) is reached, district and/or field offices will implement the site-specific actions outlined in the emergency/contingency response plan developed as part of the soft trigger (signal) response. If the hard trigger (signal) was reached, but not preceded by a soft trigger (signal) or the emergency/contingency response was not developed, the BLM (in coordination with federal, state, and local partners) may implement temporary closures (in accordance with 43 CFR Part 8364.1, and as directed under BLM Instruction Memorandum No. 2013-035) to respond to a causal factor(s) that has resulted in a catastrophic event (i.e., a wildfire). In addition, the BLM will also no longer permit exceptions to allocation decisions in areas (e.g., lek cluster, BSU) that have tripped a hard trigger (signal) and may delay issuance of new permits and authorizations until population and/or habitat levels fall below the trigger (signal) threshold and the trigger (signal) has been determined to be reversed by the process outlined below (longevity of trigger [signal] responses).

Step 4-Implement Trigger (Signal) Responses: District and/or field offices will implement project-specific management responses at the scale in which the trigger (signal) was reached (e.g., lek cluster, BSU), as contained in the report referenced in Steps 2 and 3.

Step 5-Monitor Responses: District and/or field offices will continue to monitor the lek cluster(s) and BSU(s) in which a trigger (signal) response is being applied to determine if the responses are adequately addressing the reason for the population and/or habitat decline. This information will be used in Step 1,

above ("Assessment of Greater Sage-Grouse Population and Habitat Baseline Conditions") the following year.

D.7 Longevity of Trigger (Signal) Responses (Removing the Trigger Response)

D.7.1 Population Trigger (Signal)

All trigger (signal) responses will remain in place until the following conditions are met:

Reversing the population trigger (signal) will be based on thresholds and upward trends for those Greater Sage-Grouse populations that have crossed a threshold at the lek cluster or BSU scale. The process to determine thresholds and upward trends will be developed by USGS in coordination with the BLM, Forest Service, NDOW, CDFW, and USFWS, which will incorporate and be compatible with "The Hierarchical Population Monitoring of Greater Sage-Grouse (*Centrocercus urophasianus*) in Nevada and California—Identifying Populations for Management at the Appropriate Spatial Scale (Coates et al. 2017).

Removal of the hard trigger (signal) responses for populations returns management direction in the affected lek cluster and/or BSU to the management directions that were in force within those lek clusters and/or BSUs prior to reaching a hard or soft trigger (signal).

D.7.2 Habitat Trigger (Signal)

All trigger (signal) responses will remain in place until the following condition is met:

The BLM will work with the Forest Service, USGS, NDOW, CDFW, and USFWS to develop a process to evaluate whether a lek cluster or BSU that reached a trigger (signal) has recovered sufficiently to reverse the trigger (signal). The process may include, but not be limited to, the following:

- Sagebrush cover data derived from satellite imagery
- Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool. Technical Reference 6710-1(Stiver et al., 2015)

Removal of the hard trigger (signal) responses for habitat returns management direction in the affected lek cluster and/or BSU to the management directions that were in force within those lek clusters and/or BSUs prior to reaching a hard or soft trigger (signal).

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Appendix E

Fluid Mineral Stipulations, Waivers, Modifications, and Exceptions

Appendix E. Fluid Mineral Stipulations, Waivers, Modifications, and Exceptions

This appendix lists by alternative surface use stipulations for new fluid mineral (oil and gas and geothermal) leases referred to throughout the 2015 FEIS that would be updated under the Management Alignment Alternative of the 2018 Proposed Plan Amendment. In addition to fluid mineral leases, these surface use stipulations would also apply, where appropriate and practical, to other surface-disturbing activities (and occupancy) associated with land use authorizations, permits, and leases issued on BLM-administered lands. Subject to valid existing rights and applicable law and policy, the stipulations would apply to uses and activities other than fluid mineral leasing. The intent is to manage other activities and uses in the same manner as fluid mineral leasing.

Surface-disturbing activities are those that normally result in more than negligible disturbance to public lands. These activities normally involve disturbance to soils and vegetation to the extent that reclamation is required. They include the following:

- The use of mechanized earth-moving and truck-mounted drilling equipment
- Certain geophysical exploration activities
- Off-road vehicle travel in areas designated as limited or closed to off-highway vehicle (OHV) use
- Placement of surface facilities, such as utilities, pipelines, structures, and geothermal and oil and gas wells
- New road construction
- Use of pyrotechnics, explosives, and hazardous chemicals

Surface-disturbing activities do not include livestock grazing, cross-country hiking, driving on designated routes, and minimum-impact filming.

E.1 Description of Surface Stipulations

Table E-1 shows the stipulations that would be carried forward or amended under the Management Alignment Alternative of the 2018 Proposed Plan, including exceptions, modifications, and waivers. All stipulations for other resources, besides Greater Sage-Grouse, included in the existing land use plans would still be applicable. Areas identified as no surface occupancy (NSO) would not allow surface-disturbing activities.

Areas identified as controlled surface use (CSU) would require proposed actions to be authorized in accordance with the controls or constraints specified. The controls would be applicable to all surface-disturbing activities.

Areas identified as timing limitation (TL) would not allow surface-disturbing activities during identified time frames. Timing limitation (TL) areas would remain open to operations and maintenance, including associated vehicle travel, during the restricted period, unless otherwise specified in the stipulation.

E.2 RELIEF FROM STIPULATIONS

With regards to fluid minerals, surface use stipulations could have exceptions, modifications, or waivers applied with approval by the Authorized Officer (State Director). **Table E-1** specifies the types of habitat where these stipulations would/not apply:

E.2.1 Exception

An exception to this stipulation may be granted by the Authorized Officer (State Director), in coordination with the appropriate state agency (NDOW and/or CDFW), if one the following conditions are met:

- The location of the proposed authorization is determined to be unsuitable as Greater Sage-Grouse habitat (by a qualified biologist with Greater Sage-Grouse experience using BLM-approved methods based on Stiver et al 2015 and compliant with current BLM policy) and would not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse and its habitat.
- Impacts from the proposed action could be offset through use of the mitigation hierarchy (avoid, minimize, mitigate) to achieve a net conservation gain and demonstrate that the individual and cumulative impacts of the project would not result in habitat fragmentation or other impacts that would cause Greater Sage-Grouse populations to decline.

E.2.2 Modification

The boundaries of the stipulated area may be modified by the Authorized Officer (State Director), in coordination with the appropriate state agency (NDOW and/or CDFW), if the criteria described above apply. The dates for seasonal timing limitations (restrictions) may be modified or waived in coordination with NDOW and/or CDFW based on site-specific information that indicates:

- A project proposal's NEPA analysis and/or project record, and correspondence from NDOW and/or CDFW, demonstrates that any modification (shortening/extending seasonal time frames or waiving the seasonal timing restrictions all together) is justified on the basis that it serves to better protect or enhance Greater Sage-Grouse and its habitat than if the strict application of seasonal timing restrictions are implemented. Under this scenario modifications can occur if:
  - A proposed authorization would have beneficial or negligible impacts on Greater Sage-Grouse.
  - There are documented local variations (e.g., higher/lower elevations) and/or annual climatic fluctuations (e.g., early/late spring, long/heavy winter) that indicate the seasonal life cycle periods are different than presented, or that Greater Sage-Grouse are not using the area during a given seasonal life cycle period.
- Modifications are needed to address an immediate public health and safety concern in a timely manner (e.g., maintaining a road impacted by flooding).

E.2.3 Waiver

The stipulation may be waived if the Authorized Officer, in consultation with the appropriate state agency (NDOW and/or CDFW), determines that the entire leasehold is within unsuitable habitat (see exceptions above) and would not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse and/or its habitat.

E.2.4 Inclusion in Environmental Analysis

The environmental analysis document prepared for site-specific proposals such as for fluid minerals (oil and gas and geothermal) development (i.e., operations plans for geothermal drilling permit or master development plans for applications for permit to drill or sundry notices) would need to address proposals to exempt, modify, or waive a surface use stipulation.

In order to exempt, modify, or waive a stipulation on BLM-administered lands, the environmental analysis would have to demonstrate that criteria from above apply such that: (1) the circumstances or relative resource values in the area had changed following issuance of the lease, (2) less restrictive requirements could be developed to protect the resource of concern, and (3) operations could be conducted without causing direct, indirect, or cumulative impacts.

With respect to granting relief from stipulations on other types of authorizations, such as solid mineral leases and land use authorizations, any changes to the contractual nature of these instruments would require environmental review and coordination with the lessee, permittee, or authorization holder. This would be the case when specific surface-disturbing activities are proposed via an operation plan, permitting action, or similar instrument.

E.3 STANDARD TERMS AND CONDITIONS

All surface-disturbing activities are subject to standard terms and conditions. These include the stipulations that are required for proposed actions in order to comply with the Endangered Species Act. Standard terms and conditions for fluid mineral leasing provide for relocating proposed operations up to 200 meters and for prohibiting surface-disturbing operations for a period not to exceed 60 days. The stipulations addressed in **Table E-1** that are within the parameters of 200 meters and 60 days are considered open to fluid mineral leasing, subject to standard terms and conditions.

Table E-1
Fluid Mineral Stipulations for Greater Sage-Grouse Habitat

Language from land use plan amendment	**Stipulation SG-01-NV-OG-NSO:** This stipulation is herein rescinded because Sagebrush Focal Areas (SFAs) are not included in the Management Alignment Alternative. SFAs—Managed as no surface occupancy (NSO), without waiver, exception, or modification, for fluid mineral leasing (oil, gas, and geothermal).
Objective	To protect Greater Sage-Grouse habitat within the SFA
Stipulation type	Major constraint
Stipulation	No Surface Occupancy (NSO)
Exception	
Modification	
Waiver	
Language from land use plan amendment	**Stipulation SG-02-NV-OG-NSO:** Priority habitat management areas (PHMA)—Manage oil and gas resources in Nevada as No Surface Occupancy (NSO), with the following exceptions.
Objective	To protect Greater Sage-Grouse in PHMA
Stipulation Type	Major constraint
Stipulation	No Surface Occupancy (NSO)

Table E-1
Fluid Mineral Stipulations for Greater Sage-Grouse Habitat

Exception	The Authorized Officer (State Director) may grant an exception to an oil and gas lease NSO stipulation only where one of the following apply: i. The location of the proposed authorization is determined to be unsuitable as Greater Sage-Grouse habitat (by a qualified biologist with Greater Sage-Grouse experience using BLM-approved methods based on Stiver et al 2015 and compliant with current BLM policy) and would not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse and its habitat. Management direction would not apply to those areas determined to be unsuitable. ii. Impacts from the proposed action could be offset through use of the mitigation hierarchy (avoid, minimize, mitigate) to achieve a net conservation gain and demonstrate that the individual and cumulative impacts of the project would not result in habitat fragmentation or other impacts that would cause Greater Sage-Grouse populations to decline.
Modification	The boundaries of the stipulated area may be modified by the Authorized Officer (State Director), in coordination with the appropriate state agency (NDOW and/or CDFW) if the criteria described above apply. The dates for seasonal timing limitations (restrictions) may be modified or waived in coordination with NDOW and/or CDFW based on site-specific information that indicates: • A project proposal's NEPA analysis and/or project record, and correspondence from NDOW and/or CDFW, demonstrates that any modification (shortening/extending seasonal time frames or waiving the seasonal timing restrictions all together) is justified on the basis that it serves to better protect or enhance Greater Sage-Grouse and its habitat than if the strict application of seasonal timing restrictions are implemented. Under this scenario modifications can occur if: – A proposed authorization would have beneficial or negligible impacts on Greater Sage-Grouse. – There are documented local variations (e.g., higher/lower elevations) and/or annual climatic fluctuations (e.g., early/late spring, long/heavy winter) that indicate the seasonal life cycle periods are different than presented, or that Greater Sage-Grouse are not using the area during a given seasonal life cycle period. • Modifications are needed to address an immediate public health and safety concern in a timely manner (e.g. maintaining a road impacted by flooding).
Waiver	The stipulation may be waived if the Authorized Officer, in consultation with the appropriate state agency (NDOW and/or CDFW), determines that the entire leasehold is within unsuitable habitat (see exceptions above) and would not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse and/or its habitat.
Language from land use plan amendment	**Stipulation SG-02-CA-NSO:** PHMA—Manage fluid mineral resources (oil, gas, and geothermal) in California as No Surface Occupancy (NSO), with the following exceptions.
Objective	To protect Greater Sage-Grouse in PHMA
Stipulation Type	Major constraint
Stipulation	No Surface Occupancy (NSO)
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**

Table E-1
Fluid Mineral Stipulations for Greater Sage-Grouse Habitat

Language from land use plan amendment	**Stipulation SG-02-NV-GEOT-NSO:** PHMA—Manage Nevada geothermal resources as No Surface Occupancy (NSO), with the following exceptions.
Objective	To protect Greater Sage-Grouse habitat in PHMA
Stipulation type	Major constraint
Stipulation	No Surface Occupancy (NSO)
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from land use plan amendment	In PHMA in California only, limit the density of energy and mining facilities during project authorization to an average of one type of energy per mineral facility per 640 acres.
Objective	To protect PHMA and the life history needs of Greater Sage-Grouse from habitat loss and Greater Sage-Grouse populations from disturbance and limit fragmentation in PHMA. This would be implemented as a lease notice associated with new leases, in addition to the No Surface Occupancy stipulations. This would be applicable only to new oil and gas leases if the exception criteria identified for the NSO stipulation above were granted.
Stipulation type	Lease notice
Stipulation	Lease notice
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from land use plan amendment	**Stipulation SG-03-TL:** Seasonal protection within 4.0 miles of active or pending Greater Sage-Grouse leks in general management habitat areas (GHMA)—Manage fluid mineral resources with timing limitations.
Objective	To protect Greater Sage-Grouse lekking habitat
Stipulation Type	Timing limitation
Stipulation	No Surface Occupancy (NSO) would be allowed within 4.0 miles of active or pending Greater Sage-Grouse leks from March 1 through May 15.
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from land use plan amendment	**Stipulation SG-04-TL:** Seasonal protection of Greater Sage-Grouse winter habitat from November 1 through February 28 in GHMA.
Objective	To protect Greater Sage-Grouse winter habitat
Stipulation Type	Timing limitation
Stipulation	No Surface Occupancy (NSO) would be allowed in Greater Sage-Grouse winter habitat from November 1 through February 28.
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from land use plan amendment	**Stipulation SG-05-TL:** Seasonal protection of Greater Sage-Grouse early brood-rearing habitat from May 15 through June 15 in GHMA.
Objective	To protect Greater Sage-Grouse early brood-rearing habitat
Stipulation type	Timing Limitation

Table E-1
Fluid Mineral Stipulations for Greater Sage-Grouse Habitat

Stipulation	No Surface Occupancy (NSO) would be allowed in Greater Sage-Grouse early brood-rearing habitat from May 15 through June15.
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from land use plan amendment	**Stipulation SG-06-TL:** Seasonal protection of Greater Sage-Grouse late brood-rearing habitat from June 15 through September 15 in GHMA.
Objective	To protect Greater Sage-Grouse late brood-rearing habitat
Stipulation type	Timing Limitation
Stipulation	No Surface Occupancy (NSO) would be allowed in Greater Sage-Grouse late brood-rearing habitat from June 15 through September 15.
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from land use plan amendment	**Stipulation SG-08-CSU:** Authorizations/permits would limit noise from discretionary activities (during construction, operation, or maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 miles from active and pending leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season from March 1 through May 15.
Objective	To protect Greater Sage-Grouse lek sites
Stipulation type	Controlled Surface Use (CSU)
Stipulation	Authorizations/permits would limit noise from discretionary activities (during construction, operation, or maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 miles from active and pending leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season from March 1 through May 15.
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from Land Use Plan Amendment	**Stipulation SG-9-CSU:** In all Greater Sage-Grouse habitat, the BLM will apply lek buffer-distances, as recommended in the United States Geological Service Report Conservation Buffer Distance estimates for Greater Sage Grouse—A Review Open File- Report 2014-1239 (Manier et al. 2014; see Appendix B).
Objective	To protect Greater Sage-Grouse leks
Stipulation type	Controlled Surface Use (CSU)
Stipulation	The BLM, through project-specific NEPA analysis, will assess and address impacts from the following activities using the lek buffer-distances as identified in the USGS Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239). Project-specific analysis should use the lower end of the interpreted range in the report as the basis for effects determination unless justifiable departures are determined to be appropriate (see below). The lower end of the interpreted range of the lek buffer-distances is as follows: • Linear features (roads) within 3.1 miles of leks • Infrastructure related to energy development within 3.1 miles of leks • Tall structures (e.g., communication or transmission towers and transmission lines) within 2 miles of leks • Low structures (e.g., fences and rangeland structures) within 1.2 miles of leks • Surface disturbance (continuing human activities that alter or remove the

Table E-1
Fluid Mineral Stipulations for Greater Sage-Grouse Habitat

	natural vegetation) within 3.1 miles of leks • Noise and related disruptive activities, including those that do not result in habitat loss (e.g., motorized recreational events), at least 0.25 miles from leks
Exception	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Modification	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Waiver	Same as described above in **Stipulation SG-02-NV-OG-NSO**
Language from land use plan amendment	**Stipulation SG-NV-10-CSU:** Nevada 3 Percent Disturbance Cap Protocol—New development/activity would not exceed the 3 percent disturbance cap protocol at either the biologically significant unit (BSU) or project scale in PHMA, unless a technical team (described under the exception) determines that new or site-specific information indicates the project could be modified to result in a net conservation gain at the BSU level.
Objective	To create a net conservation gain at the project and BSU level
Stipulation type	Controlled Surface Use (CSU)
Stipulation	New development/activity would not exceed the 3 percent disturbance cap protocol at either the BSU or project scale, unless a technical team (described under the exception) determines that new or site-specific information indicates the project could be modified to result in a net conservation gain at the BSU level.
Exception	Nevada lands only—Any exceptions to the disturbance cap would be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the NDOW, the USFWS, and the BLM unanimously find that the proposed action satisfies the conditions stated in the stipulation. Initially, the technical team would make such finding; the team consists of a field biologist or other Greater Sage-Grouse expert from each respective agency. In the event the initial finding were not unanimous, the finding may be elevated to the BLM State Director, USFWS State Ecological Services Director, and NDOW Director for final resolution. In the event their recommendation were not unanimous to grant the exception, the exception would not be granted.
Modification	None
Waiver	None
Language from land use plan amendment	**Stipulation SG-CA-11-CSU:** California 3 Percent Disturbance Cap—New development/activity would not exceed the 3 percent disturbance cap at either the BSU or project scale in PHMA.
Objective	To create a net conservation gain at the project and BSU level.
Stipulation type	Controlled Surface Use (CSU)
Stipulation	New development/activity would not exceed the 3 percent disturbance cap at either the BSU or project scale.
Exception	None
Modification	None
Waiver	None

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Appendix F

Nevada and Northeastern California Mitigation Strategy

Appendix F. Nevada and Northeastern California Mitigation Strategy

F.1 General

The BLM applies mitigation in a hierarchical manner: first seeking to avoid, then minimize, then rectify, then reduce or eliminate the impacts over time, and only then consider compensatory mitigation, if any is necessary, to address residual effects (sometimes called unavoidable impacts) that warrant compensatory mitigation.

Overall, application of the mitigation hierarchy and the development of compensatory mitigation would be done in close coordination with the proponent, cooperating agencies (e.g., NDOW, Sagebrush Ecosystem Technical Team [SETT], and local governments) and interested stakeholders in a transparent manner, based on the best available science and standardized metrics.

When authorizing third-party actions within Greater Sage-Grouse habitat management areas that would result in direct, indirect, or cumulative impacts on Greater Sage-Grouse or their habitat, the BLM would require and ensure mitigation, subject to valid existing rights and federal regulations governing the authorization, that provides a net conservation gain (net benefit) to the species. This would be achieved by following regulations from the White House Council on Environmental Quality (CEQ; 40 CFR 1508.20) regarding application of the mitigation hierarchy (i.e., avoid, minimize, compensate). Further guidance on avoidance, minimization, and compensation is described below in Section 1.2, which also incorporates the State of Nevada's conservation policies as described in Section 3.1.2 of the *Nevada Greater Sage-Grouse Conservation Plan* (2014).

If direct, indirect, or cumulative impacts from an authorized activity remain after applying avoidance and minimization measures, or cannot be rectified through reclamation (i.e., residual impacts), then compensatory mitigation would be used to provide a net conservation gain to the species. Any compensatory mitigation would be durable, timely, and in addition to that which would have resulted without the compensatory mitigation (see glossary).

F.2 Mitigation Principles and Guidance

The BLM would apply the following mitigation principles when evaluating third-party actions that result in impacts on Greater Sage-Grouse or their habitat. The BLM would also consider any state-level Greater Sage-Grouse mitigation guidance that is consistent with the requirements identified in this appendix.

The mitigation hierarchy would be the fundamental decision process followed by the BLM to avoid, minimize, and compensate for impacts on Greater Sage-Grouse and its habitat. Following the mitigation hierarchy would be a sequential process that would document efforts to avoid and minimize before going directly to compensatory mitigation. The process is as follows:

- Avoidance
  - Eliminate conflicts by relocating disturbance activities outside of Greater Sage-Grouse habitat in order to conserve Greater Sage-Grouse and their habitat. Avoidance of a disturbance within Greater Sage-Grouse habitat is the preferred option. If impacts are not avoided, the adverse effects would need to be both minimized and mitigated.
- Minimization
  - Impacts should be minimized by modifying proposed actions or incorporating measures that lessen the adverse effects on Greater Sage-Grouse and its habitat.
  - This would be accomplished through project-level, site-specific evaluation of minimization actions (e.g., required design features and best management practices), such as reducing the disturbance footprint, seasonal use limitations, and collocation of structures, etc., that would be applicable to the proposed activity.
  - Minimization would not preclude the need for compensatory mitigation, but could effectively reduce the severity of impacts and the degree to which compensatory mitigation was needed to offset those impacts.
- Compensation (also referred to as compensatory mitigation)
  - When impacts on Greater Sage-Grouse and its habitat remain after avoidance and minimization, compensatory mitigation could be considered with the applicant subject to the federal regulations governing the authorization and valid existing rights.
  - Compensatory mitigation actions would be developed and implemented commensurate with the impacts of the proposed project such that net conservation is achieved through replacement or enhancement of Greater Sage-Grouse habitat quality and quantity, as measured using consistent metrics for impacts and mitigation actions, such as those described in the Habitat Quantification Tool (HQT).
- Impact and Compensatory Mitigation Project Valuation Guidance
  - A common, standardized method should be used for quantifying the impacts of a proposed project and any pursuant compensatory mitigation projects.
    - The BLM would require use of the State of Nevada's HQT to ensure consistency in tracking/reporting changes to Greater Sage-Grouse habitat quality and quantity, except in California.
    - When already established in existing agreements, other quantification methods (e.g., The Barrick Enabling Agreement) would remain an acceptable quantification method for the life of the agreement.
  - For compensatory mitigation projects, consideration of durability (see glossary), timeliness (see glossary), and the potential for failure (e.g., uncertainty associated with effectiveness) may require an upward adjustment of the valuation.
- Compensatory Mitigation Options
  - Options for implementing compensatory mitigation include:
    - Utilizing the State of Nevada Conservation Credit System (CCS) or an established mitigation/conservation bank (e.g., Barrick).
    - Contributing to an established mitigation/conservation fund that can demonstrate how funds would be used to achieve net conservation gain.

        - Authorized user- (proponent-) conducted mitigation projects that demonstrate net conservation gain.
    - For any compensatory mitigation project, the investment must be additional (i.e., additionality means the conservation benefits of compensatory mitigation are demonstrably new and would not have resulted without the compensatory mitigation project).
- Compensatory Mitigation Siting
    - Sites should be in areas that have the potential to yield a net conservation gain to the Greater Sage-Grouse, regardless of landownership.
    - Sites should be durable (see glossary).
    - Sites identified by existing plans and strategies (e.g., fire restoration plans, invasive species strategies, and healthy land focal areas) should be considered, if those sites have the potential to yield a net conservation gain to Greater Sage-Grouse and are durable.
- Compensatory Mitigation Project Types and Costs
    - Projects should help reduce threats to Greater Sage-Grouse (e.g., protection, conservation, and restoration projects).
    - Each project type should have a goal and measurable objectives.
    - Each project type should have associated monitoring and maintenance requirements, for the duration of the impact.
- Compensatory Mitigation Compliance and Monitoring
    - Mitigation projects should be inspected to ensure they are implemented as designed, and if not, there should be methods to enforce compliance.
    - Mitigation projects should be monitored to ensure that the goals and objectives are met and that the benefits are effective for the duration of the impact.
- Compensatory Mitigation Reporting
    - Standardized, transparent, scalable, and scientifically defensible reporting requirements should be identified for mitigation projects.

F.3 INCORPORATING THE MITIGATION STRATEGY INTO NEPA ANALYSES

The BLM would include the avoidance, minimization, and compensatory mitigation approach outlined above in one or more of the NEPA analysis alternatives when analyzing projects that would result in impacts on Greater Sage-Grouse and its habitat. To ensure a standardized method is used for quantifying the impacts of a proposed project and evaluating any pursuant compensatory mitigation projects, the BLM would require that the State of Nevada's HQT be used to determine the net change in functional acres attributed to the proposed activity and resultant mitigation actions. Use of the HQT to quantify functional acre changes would only apply to BLM-administered lands in Nevada, unless California chooses to adopt this method of quantification.

When it is determined that an activity requires compensatory mitigation, or a proponent voluntarily offers to conduct compensatory mitigation, the BLM would coordinate with the SETT regarding use of the HQT and Conservation Credit System (CCS) and/or evaluation of other proponent-developed mitigation options. Subject to valid existing rights and the federal regulations governing a proposed authorization, the appropriate mitigation actions would be carried forward into the decision.

F.4 IMPLEMENTING A COMPENSATORY MITIGATION PROGRAM

The BLM would ensure that compensatory mitigation is strategically implemented to provide a net conservation gain to the species. In order to align with existing compensatory mitigation efforts in Nevada, the BLM would coordinate with Nevada Department of Natural Resources and Conservation (DCNR) and the SETT regarding use of the state-run HQT and CCS. These efforts would be done in collaboration with the BLM's partners (federal, tribal, state, and local government) to facilitate the success of the state-run program, recognizing that the BLM does not have the statutory authority to require use of the CCS as the only means of satisfying debit obligations and achieving net conservation.

The BLM remains responsible for making decisions affecting BLM-administered lands.

F.5 GLOSSARY TERMS

Additionality: The conservation benefits of compensatory mitigation are demonstrably new and would not have resulted without the compensatory mitigation project (adopted and modified from BLM Manual Section 1794).

Avoidance mitigation: Avoiding the impact altogether by not taking a certain action or parts of an action (40 CFR 1508.20(a)). This may also include avoiding the impact by moving the proposed action to a different time or location.

Compensatory mitigation: Compensating for the (residual) impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

Compensatory mitigation projects: The restoration, creation, enhancement, and/or preservation of impacted resources (adopted and modified from 33 CFR 332), such as on-the-ground actions to improve and/or protect habitats (e.g., chemical vegetation treatments, land acquisitions, and conservation easements; adopted and modified from BLM Manual Section 1794).

Compensatory mitigation sites: The durable areas where compensatory mitigation projects would occur (adopted and modified from BLM Manual Section 1794).

Durability (protective and ecological): The maintenance of the effectiveness of a mitigation site and project for the duration of the associated impacts, which includes resource, administrative/legal, and financial considerations (adopted and modified from BLM Manual Section 1794).

Minimization mitigation: Minimizing impacts by limiting the degree or magnitude of the action and its implementation (40 CFR 1508.20 (b)).

Net conservation: Maintaining or increasing the current quantity and quality of Greater Sage-Grouse habitat within the planning area by protecting existing Greater Sage-Grouse habitat or by compensating for loss due to anthropogenic disturbances in a manner that results in a net increase to the quantity and quality of Greater Sage-Grouse habitat.

Residual impacts: Impacts that remain after applying avoidance and minimization mitigation; also referred to as unavoidable impacts.

Timeliness: The lack of a time lag between impacts and the achievement of compensatory mitigation goals and objectives (BLM Manual Section 1794).

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