Chapter 2
Proposed Action and Alternatives

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Changes to Chapter 2 between draft and final EIS:

- Developed separate BLM and Forest Service Proposed Plan Amendments
- Added additional references to support the management decisions
- Updated maps and habitat category acreages based on USGS-*A Spatially Explicit Modeling of Greater Sage-Grouse Habitat in Nevada and Northeastern California: A Decision Support Tool for Management (Coates et al. 2014) (see Appendix A)*
- Updated Alternative E based on the State of Nevada's revised Greater Sage-Grouse Plan submitted during the public comment period
- Updated Alternative language, as appropriate, based on public comments received on the Draft LUPA/EIS.
- Chapter 2 has been reorganized for consistency between all sub-regional GRSG LUPAs/EISs.
- The GRSG habitat objectives table has been updated.
- See additional changes in Section 2.1

CHAPTER 2
PROPOSED ACTION AND ALTERNATIVES

2.1 CHANGES BETWEEN THE DRAFT LUPA/EIS AND THE PROPOSED LUPA/FINAL EIS

As a result of public comments, best science, cooperating agency coordination, and internal review of the Draft LUPA/EIS, the BLM and Forest Service have developed the Proposed LUPA/Final EIS for managing BLM-administered and National Forest System lands in the Nevada and northeastern California GRSG sub-region. The Proposed LUPA/Final EIS focuses on addressing public comments, while continuing to meet the BLM's and Forest Service's legal and regulatory mandates. The Proposed LUPA/Final EIS is a variation of the preferred alternative (Alternative D) and is within the range of alternatives analyzed in the DEIS.

Changes made to the Proposed LUPA/Final EIS from the preferred alternative (Alternative D) in Draft LUPA/EIS are the following:

- Revised GRSG map—Updated PHMA and GHMA delineations based on best available science, i.e., USGS Open File Report 2014-1163; delineated unmapped areas identified in the DEIS based on the USGS report. With the adoption of the USGS habitat suitability map (2014), the unmapped habitat is now mapped and identified in the Proposed LUPA/Final EIS as OHMA. A description of the mapping change was analyzed in the Draft LUPA/EIS and an explanation can be found in **Appendix A** (Habitat Mapping Process).
- Allocations for PHMA and GHMA—allocations in the Proposed LUPA/Final EIS provide more opportunities for uses in GHMA,

while still maintaining conservation management by establishing screening criteria for project/activity review in GRSG habitat. Allocations that were changed between the Preferred Alternative and the Proposed Plan are as follows:

- Minor ROWs in GHMA went from avoidance to open. This proposed management allocation was analyzed in the Draft LUPA/EIS Alternatives A and E.
- Wind ROWs in GHMA went from exclusion to avoidance. This proposed management allocation was analyzed in the Draft LUPA/EIS Alternatives B and E.
- Utility corridors designated through previous planning efforts were undesignated or reduced in width. The effects in the undesignated areas would be similar to those analyzed under Alternatives C and F, which propose GRSG habitat as exclusion areas for ROWs.
- Oil and Gas and geothermal leasing stipulations in GHMA changed from major constraints to moderate constraints. This proposed management allocation was analyzed in the Draft LUPA/EIS Alternative E.
- Non-energy leasable and salable minerals in GHMA went from closed to open. This proposed management allocation was analyzed in the Draft LUPA/EIS Alternatives B, E and F.
- Certain areas within PHMA were recommended for locatable mineral withdrawal. This proposed management allocation was analyzed in the Draft LUPA/EIS in Alternative C.

- Sagebrush Focal Areas (SFAs)—BLM and Forest Service will manage these areas, totaling approximately 2,797,400 acres within the NV/CA sub-region, as SFAs because of the importance of these areas to the conservation of the species range-wide. Specifically, SFAs include characteristics such as existing high-quality sagebrush habitat; highest breeding densities; have been identified as essential to conservation and persistence of the species; represent a preponderance of current federal ownership and in some cases are adjacent to protected areas that serve to anchor the conservation importance of the landscape. In light of the landscape level approach to GRSG conservation provided through this planning effort and as defined by the characteristics set forth above, as well as additional considerations, including potential for impacts from climate change, fire and invasives, these areas have been identified as SFAs.

As noted in the DEIS, one of the goals/objectives of this planning effort is to protect both the habitat and the species. (see, for example, the LUPA/DEIS Goal B-SSS 1, Goal D-SSS 1, Goal E-SSS 1, Goal F-SSS 1, and Objective D-SSS 4. Further, as noted by the USGS Report/Coates which supports the delineation of habitat mapping for this planning effort, the potential presence of bird in these areas of the SFAs is acknowledged (see USGS Open File Report 2014-1163; page page28, habitat definitions). The DEIS and the NDOW map it referenced defined the qualitative characteristics of habitat in terms of its importance to the species and as the intersection of the suitability of habitat for the species and the level of use by the bird (see NDOW document entitled *Greater Sage-Grouse Habitat Categorization White Paper,* December 2012 and **Appendix A**, Greater Sage-Grouse Habitat Map for Nevada and Northeastern California Land Use Plan Amendment). The habitat in the SFAs exhibits these characteristics – i.e., areas of high-quality sagebrush habitat, areas with highest breeding densities, and areas identified as essential to conservation and persistence of the species. In addition, the DEIS noted that among the issues brought forward for analysis was the use of "sound science to determine habitat requirements and restrictions needed to protect GRSG habitat." NV/CA DEIS, Chapter 1 at p.16. The DEIS also stated that mapped habitat would be adjusted and refined based upon the best scientific tools available. NV/CA DEIS, Chapter 2, Table 2-4 at p. 61 (Goal D-SSS-AM) Table 2-5 at pages 93 (Action D-SSS-AM1), 100 (Action D-SSS-AM 9) and 119 (Action D-SSS-OPM 3).

The management of these areas as SFAs would be consistent with the management direction for PHMAs, with the additional recommendations for withdrawal from mineral location and entry, NSO without exception for fluid mineral leasing, and prioritization for conservation actions, including processing of grazing permits. In the Draft LUPA/EIS, Alternative C proposed a recommended withdrawal for all GRSG habitat and Alternative D proposed NSO for fluid mineral leasing in all habitat. In the Proposed LUPA/DEIS, Alternative F proposed prioritization for livestock grazing. Chapter 4 analyzed the impacts of those decisions. See DEIS Chapters 2 and 4. As such, the management of these areas as SFAs and the impacts of the associated management decisions was addressed in the DEIS and is qualitatively within the spectrum of alternatives analyzed.

- USGS Buffer Study—Included a management action to incorporate the lek buffer-distances identified in the USGS report titled Conservation Buffer Distance Estimates for Greater Sage Grouse—A Review: USGS Open File Report 2014-1239 (Manier et al. 2014) during NEPA analysis at the implementation stage. Although the buffer report was not available at the time of the DEIS release,

applying these buffers was addressed in the DEIS and is qualitatively within the spectrum of alternatives analyzed. Specifically, (Alternatives C and F) identified and analyzed allocation restrictions such as closure to fluid minerals, recommendation for withdrawal, elimination of grazing. For example, Alternative C proposed closure to fluid, salable, and non-energy leasable minerals in all GRSG habitat. It also included elimination of grazing in all habitat. In Alternative C, all GRSG habitat was excluded for ROW development. Alternative D proposed exclusion for solar and wind development in PHMA and GHMA and also proposed closures for salable and non-energy leasable minerals. Alternative F proposed closure to fluid and salable minerals in PHMA and GHMA. Alternative F also proposed exclusion areas in PHMA and GHMA for solar, wind and all ROWs.

The management decision to require lek buffers for development within certain habitat types is within the range of alternatives analyzed. Alternative D proposed a seasonal 4-mile lek buffer RDF consistent with applicable law (**Appendix D**) along with 1.2-mile fencing restriction RDF consistent with applicable law (**Appendix D**) and a 0.5 mile riparian restriction (Action D-LG 20). For any surface disturbing activity, proponents were also required to survey within a 3-mile buffer of a lek (**Appendix D**).

- Adaptive management—Identification of hard and soft adaptive management triggers for population and habitat and identified appropriate management responses. Chapter 2 of the DEIS identified that the BLM and Forest Service would further develop the adaptive management approach by identifying hard and soft triggers and responses. All of the adaptive management hard trigger responses were analyzed within the range of alternatives. For example, if a hard trigger is reached in GHMA, and GHMA would be managed as open to saleable minerals in the Proposed Plan, the response would be to manage it as closed to saleable minerals. This closure was analyzed under Alternatives C D, and F in the Draft EIS.
- Monitoring and Disturbance—The monitoring framework (**Appendix E**) was further refined in the Proposed LUPA/Final EIS, and further clarification as to how disturbance cap calculations would be measured were developed for the Proposed LUPA/ Final EIS. During the public comment period, BLM received comments on how monitoring and disturbance cap calculations would occur at implementation. The DEIS outlined the major components of the monitoring strategy, as well as provided a table portraying a list of anthropogenic disturbances that would count against the disturbance cap (**Appendix F**). A BLM Disturbance and Monitoring Sub-team further enhanced the two Appendices (**Appendices E and F**) in the Proposed LUPA/Final EIS.

- Mitigation Strategy; Net Conservation Gain –The net conservation gain strategy is in response to the overall landscape-scale goal which is to enhance, conserve, and restore GRSG and its habitat. All of the action alternatives provided management actions to meet the landscape-scale goal. The overarching goal in the DEIS was to "Maintain and/or increase abundance and distribution of GRSG on BLM- and Forest Service-administered lands by conserving, enhancing, or restoring the sagebrush ecosystem upon which populations depend, in cooperation with other conservation partners. Manage activities and authorizations on public lands to reduce predation of GRSG on public lands" (see Goal D-SSS 1).
- WAFWA Management Zone Cumulative Effects Analysis on GRSG – a quantitative cumulative effects analysis for GRSG is included in the Proposed LUPA/ Final EIS. This analysis was completed to analyze the effects of management actions on GRSG at a biologically significant scale which as determined to be at the WAFWA Management Zone. The DEIS, in Chapter 5, included a qualitative analysis at the WAFWA Management Zone scale and identified that a quantitative analysis would be completed for the Proposed LUPA/ Final EIS at the WAFWA Management Zone.
- Forest Service Plan Amendment—Chapter 2 separates the Forest Service Proposed Plan and the BLM Proposed Plan. This is because the Forest Service has different guidance for writing planning language; however, the actions are basically the same for both the BLM and Forest Service under the Proposed Plan.
- Public Comment on DEIS—Updated the Proposed LUPA/Final EIS based on public comment received on the DEIS (see **Appendix C**)
- The GRSG wildfire, invasive annual grasses and conifer expansion assessment (FIAT) method has been incorporated (**Appendix G**). The FIAT is not a management action, but rather an approach to assessing lands for restoration and fire suppression activities, which was introduced in the Draft LUPA/EIS.
- Final VDDT modeling results have been incorporated into an objective for annual treatment rates of juniper or pinyon encroachment and cheatgrass. VDDT modeling is not a management action, but rather an approach to modeling lands to maintain appropriate sagebrush cover through the removal of conifer and annual grasses, which was introduced in the Draft LUPA/EIS.
- The "avoid, minimize, and apply compensatory mitigation" strategy has been incorporated into the management actions under the Proposed Plan.
- Some elements and concepts from the Nevada State Plan have been incorporated into the Proposed Plan management actions.

- Selected management actions that were analyzed in the Draft LUPA/EIS were consolidated into screening criteria that would be applied to all new human disturbances in GRSG habitat and have been incorporated Proposed Plan under the special status species section.
- One overarching goal was incorporated: Resource-specific goals were made into objectives, and some objectives were made into management actions.
- WHB actions were updated to be consistent throughout the Great Basin. Although management actions were updated, impacts are similar to those analyzed in the Draft LUPA/EIS. For example, language was clarified to indicate that gathers in HMAs would be prioritized in SFAs, PHMA, and then in GHMA.

NEPA requires agencies to prepare a supplement to the draft EIS: 1) the agency makes substantial changes in the proposed action that are relevant to environmental concerns; or 2) if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. A supplement is not necessary if a newly formulated alternative is a minor variation of one of the alternatives is qualitatively within the spectrum of alternatives analyzed in the Draft EIS.

The Proposed LUPA/Final EIS includes components of the alternatives analyzed in the Draft LUPA/EIS. Taken together, these components present a suite of management decisions that present a minor variation of the Preferred Alternative identified in the Draft LUPA/EIS and are qualitatively within the spectrum of alternatives analyzed.

As such, the BLM has determined that the Proposed LUPA is a minor variation of the Preferred Alternative and that the impacts of the Proposed LUPA would not affect the human environment in a substantial manner or to a significant extent not already considered in the EIS. The impacts disclosed in the Proposed LUPA/Final EIS are similar or identical to those described Draft LUPA/EIS.

2.2 INTRODUCTION

The BLM and Forest Service developed this LUPA/EIS to provide management direction for over 55 million acres of land that they administer in the Great Basin. This Proposed LUPA/ Final EIS analyzes alternatives that address threats to GRSG habitat identified in the USFWS listing decision and COT report (USFWS 2010 and 2013a).

The Proposed LUPA/Final EIS complies with NEPA, which directs the BLM and Forest Service to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources…" (NEPA Section 102[2][e]). At the heart of the alternative development process is the required

development of a reasonable range of alternatives. Public and internal BLM and Forest Service scoping (see **Section 1.5.2**, Development of Draft LUPA/EIS Alternatives Including the Preferred Alternative; Subsection-Scoping and Identification of Issues for Developing the Preferred Plan and Draft Alternatives) identified issues that present opportunities for alternative courses of action, while the purpose and need for action provides sideboards for determining reasonableness (see **Section 1.3**, Purpose and Need0.

This chapter introduces and details the Proposed Plan. It is a mix of management actions selected from the range of alternatives in the Draft LUPA/EIS. The Proposed Plan is based on best science, public scoping comments, public comments on the Draft LUPA/EIS, and internal and interagency discussion. The alternatives that were in the Draft LUPA/EIS are also included in this chapter. These include the No Action Alternative, which would continue the existing management of the BLM and Forest Service, six action alternatives, and the alternatives considered but eliminated from detailed analysis.

The identification of the Preferred Alternative in the Draft LUPA/EIS did not constitute a commitment or decision in principle, and there is no requirement to select the Preferred Alternative or any of the separate alternatives presented in the Draft LUPA/EIS in the Proposed LUPA/Final EIS as the Proposed Plan. The BLM and Forest Service have the discretion to select any of the alternatives as their Preferred Alternative in the Draft LUPA/EIS. The agencies also have the discretion to modify the Preferred Alternative between the Draft LUPA/EIS and the Proposed LUPA/ Final EIS into the Proposed Plan. The modifications are allowable as long as the actions presented in the Proposed Plan in the Proposed LUPA/Final EIS are within the range of alternatives analyzed in the Draft LUPA/EIS. The various parts of the separate alternatives that were analyzed in the Draft LUPA/EIS can be mixed and matched to develop an alternative—known as the Proposed Plan—in the Proposed LUPA/Final EIS, as long as the reasons for doing so are explained (40 CFR, Part 1506.2[b]).

This chapter includes the alternatives from the Draft LUPA/EIS, as follows:

- The No Action Alternative, which would continue the existing management of the BLM and Forest Service
- Six action alternatives
- The alternatives considered but eliminated from detailed analysis

Maps that depict allocations from the range of alternatives are in **Appendix H**. The alternatives respond to the Purpose and Need for this LUPA/EIS as well as the USFWS-identified issues and threats to GRSG and its habitat.

2.3 INTRODUCTION TO LUP ALTERNATIVES

LUP decisions consist of identifying and clearly defining goals and objectives (desired outcomes) for resources and resource uses, followed by developing allowable uses and management actions necessary for achieving the goals and objectives. These critical determinations guide future land management actions and subsequent site-specific implementation actions to meet multiple use and sustained yield mandates while sustaining land health.

2.3.1 Components of Alternatives

Goals are broad statements of desired (LUP-wide and resource- or resource use-specific) 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. Forest Service objectives are also time specific.

Management actions and allowable uses are designed to achieve objectives. Management actions are measures that guide day-to-day and future activities. Allowable uses delineate which uses 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 on-the-ground actions and are typically not addressed in LUPs.

On National Forest System lands, forest plans guide management activities and may contain goals and objectives as well as standards and guidelines (S&Gs) that provide direction for project planning and design. Standards are mandatory constraints on decision-making. Not meeting a standard would require a site-specific forest plan amendment. A guideline is a constraint on decision-making that allows for departure from its terms, so long as the purpose of the guideline is met.

2.3.2 Purpose of Alternative Development

Land use planning and NEPA regulations require the BLM and Forest Service to formulate a reasonable range of alternatives. Alternatives development is guided by established planning criteria (as outlined for the BLM at 43 CFR, Part 1610; described in **Section 1.3**, Purpose and Need, **Chapter 1**).

The NEPA regulations at 40 CFR, Part 1501.2(c) state that federal agencies must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflict concerning alternative uses of available resources…."

The basic goal of alternative development is to produce distinct potential management scenarios that do the following:

- Address the identified major planning issues
- Explore opportunities to enhance management of resources and resource uses
- Resolve conflicts among resources and resource uses
- Meet the purpose of and need for the LUP or LUPA

Pursuit of this goal provides the BLM, Forest Service, and the public with an appreciation for the diverse ways in which conflicts over resources and resource uses might be resolved. It offers the BLM State Directors and Forest Service Forest Supervisors a reasonable range of alternatives to make an informed decision. The components and broad aim of each alternative considered for the Nevada and Northeastern California Sub-region GRSG Proposed LUPA/Final EIS are discussed below.

2.4 ALTERNATIVES DEVELOPMENT PROCESS FOR THE NEVADA AND NORTHEASTERN CALIFORNIA GREATER SAGE-GROUSE LAND USE PLAN AMENDMENT/EIS

The planning team used the BLM planning process (outlined in **Section 1.4**, Planning Process) to develop a reasonable range of alternatives for the LUPA/EIS. The BLM and Forest Service complied with NEPA and CEQ implementing regulations at 40 CFR, Part 1500, in developing alternatives for this Proposed LUPA/Final EIS, including seeking public input and analyzing reasonable alternatives.

Where necessary to meet the planning criteria, to address issues and comments from cooperating agencies and the public, or to provide a reasonable range of alternatives, the alternatives include management options for the planning area that would modify or amend decisions made in the applicable LUP. Since this Proposed LUPA/Final EIS will specifically address GRSG conservation, many decisions in existing LUPs that do not impact GRSG are acceptable and reasonable; in these instances, there is no need to develop alternative management prescriptions.

Public input received during the scoping process was considered to identify significant issues deserving of detailed study to help identify alternatives. The planning team developed planning issues to be addressed in the LUPA/EIS, based on broad concerns or controversies related to conditions, trends, needs, and existing and potential uses of planning area lands and resources. All comments were reviewed to determine whether they identified significant issues or unresolved conflicts.

2.4.1 Develop a Reasonable Range of Alternatives

Based on scoping and collaboration efforts, the BLM and Forest Service finalized their planning criteria and identified 13 key planning issues to help frame the alternatives development process. Following the close of the public scoping period in March 2012, the BLM and Forest Service began the alternatives

development process. Between May and September 2012, the planning team (BLM, Forest Service, and cooperating agencies) met to develop management goals and to identify objectives and actions to address the goals. The various groups met numerous times throughout this period to refine their work. As outcomes of this process, the planning team did the following:

- Developed a No Action Alternative (Alternative A) and two preliminary action alternatives. The first, Alternative B, is based on A Report on National Greater Sage-Grouse Conservation Measures (NTT 2011), and the second, Alternative C, is based on a proposed alternative submitted by conservation groups.
- Customized the goals, objectives, and actions from the NTT-based Alternative B to develop a third action alternative, Alternative D, for balance among competing interests.
- Incorporated proposed GRSG protection measures recommended by state government as a fifth alternative, Alternative E.
- Separated Alternative C into two distinct alternatives and developed Alternative F, the sixth alternative, which includes similar goals, objectives, and actions as Alternative B; however, it also contains distinct elements submitted by the conservation groups.

Each of the preliminary action alternatives was designed to do the following:

- Address the 13 planning issues (identified in Section 1.5.2, Development of Draft EIS Alternatives Including the Preferred Alternative, Subsection- Issues Identified for Consideration in the Nevada and Northeastern California Greater Sage-Grouse LUPA)
- Fulfill the purpose and need for the LUPA (outlined in **Section 1.3**, Purpose and Need)
- Meet the multiple use mandates of the FLPMA (43 CFR, Part 1716), the Multiple Use and Sustained Yield Act, and NFMA

2.4.2 Resulting Range of Alternatives in the Draft LUPA/EIS

Alternatives B, C, D, E, and F in the Draft LUPA/EIS offer a range of management approaches to maintain or increase GRSG abundance and distribution of GRSG. They do this by conserving, enhancing, or restoring the sagebrush ecosystem that GRSG populations depend on, in collaboration with other conservation partners. While the goal is the same across alternatives, each alternative contains a discrete set of objectives and management actions constituting a separate LUPA. The goal is met in varying degrees, with the potential for different long-range outcomes and conditions.

The relative emphasis given to particular resources and resource uses differs as well, including allowable uses, restoration measures, and specific direction

pertaining to individual resource programs. When resources or resource uses are mandated by law or are not tied to planning issues, there are typically few or no distinctions between alternatives. The meaningful differences among the alternatives are described in **Section 2.8**, Draft LUPA/EIS Alternatives. **Section 2.10**, Detailed Description of Draft Alternatives, also provides a complete description of the proposed decisions for each alternative, including the project goals and objectives, management actions, and allowable uses for individual resource programs.

Allocation Maps and Figures in **Appendix H** provide a visual representation of differences between alternatives. In some instances, varying levels of management overlap a single area, or polygon, due to management prescriptions from different resource programs. In instances where varying levels of management prescriptions overlap a single polygon, the stricter of the management prescriptions would apply.

2.4.3 GRSG Habitat in the Alternatives

The habitat nomenclature between the Draft LUPA/EIS and the Proposed LUPA/Final EIS has changed. The draft LUPA/EIS used the terms preliminary priority habitat (PPH) and preliminary general habitat (PGH) to describe GRSG habitat and as a basis for proposed management in the action alternatives. The Proposed LUPA/Final EIS uses the terms priority habitat management areas (PHMAs), general habitat management areas (GHMAs) and other management areas (OHMA). These areas are based on USGS (2014) habitat mapping, as described in **Section 1.1.2**, Nevada and Northeastern California Sub-regional Strategy, subsection- Habitat Delineation.

Also in the proposed plan, there is GRSG habitat mapped as other habitat management areas (OHMAs). This habitat was referenced in the Draft LUPA/EIS as unmapped habitat outside of PHMAs and GHMAs but in the planning area. With the adoption of the USGS habitat suitability map (2014), the unmapped habitat is now mapped and identified in the Proposed LUPA/Final EIS as OHMA.

On October 27, 2014, the USFWS provided the BLM and Forest Service a memorandum titled "Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes". The memorandum and associated maps provided by the USFWS identify areas that represent recognized "strongholds" for GRSG that have been noted and referenced as having the highest densities of GRSG and other criteria important for the persistence of the species. Within these areas, the BLM and Forest Service identified Sagebrush Focal Areas (SFAs), which are PHMAs with the following additional management (**Figure 2-5**):

- 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 management and conservation actions in these areas, including review of livestock grazing permits and leases (see livestock grazing actions in Section 2.6)

Finally, Alternative E covers one sage-grouse management area (SGMA), which includes core, priority, general, and non-habitat management areas.

2.5 BLM AND FOREST SERVICE RESOURCE PROGRAMS FOR ADDRESSING GRSG THREATS

Managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS in its 2010 "warranted but precluded" finding on listing the GRSG, as well as its COT report (USFWS 2010 and 2013a). The USFWS threats do not necessarily align with BLM and Forest Service resource program areas, and they are often integrated into several different agency resource program areas.

Table 2-1 provides a cross-walk between each of the 2010 warranted but precluded findings and COT-identified threats; the table compares these to the BLM and the Forest Service program areas addressing these threats, with references to the specific sections of the LUPA/Proposed Plan.

Table 2-1
USFWS Threats to GRSG and Its Habitat, Applicable BLM and Forest Service Proposed Plan Resource Program Areas Addressing these Threats

USFWS-Identified Threats to GRSG and Its Habitat (2010 "Warranted but Precluded" Finding)	COT-Identified Threats to GRSG and Its Habitat (2013)	Applicable BLM and Forest Service Proposed Plan Resource Program Addressing Threat
Wildfire	Fire	BLM: Wildland Fire Management Forest Service: Fire Management
Invasive species	Nonnative, invasive plant species	BLM: Vegetation Management, Range Management , Wildland Fire Management and Recreation Forest Service: GRSG Habitat , Fire Management, and Roads and Transportation
Oil and gas (for wind energy development, see Infrastructure—Power Lines/Pipelines, Roads, below)	Energy development	BLM: Lands and Realty and Fluid Minerals Forest Service: Lands and Realty and Fluid Minerals
Prescribed fire	Sagebrush removal	BLM: Vegetation Management and Wildland Fire Management Forest Service: GRSG Habitat and Fire Management
Grazing	Grazing	BLM: Range Management, Wild Horse and Burro Management, Special Status Species , and Vegetation Management Forest Service: Livestock Grazing and Wild Horse and Burro Management
See grazing management (above)	Range management structures	BLM: Range Management Forest Service: Livestock Grazing
No similar threat identified	Free-roaming equid management	BLM: Wild Horse and Burro Management Forest Service: Wild Horse and Burro Management
Conifer encroachment	Pinyon or juniper expansion	BLM: Wildland Fire Management and Vegetation Management Forest Service: Fire Management and GRSG Habitat

Table 2-1
USFWS Threats to GRSG and Its Habitat, Applicable BLM and Forest Service Proposed Plan Resource Program Areas Addressing these Threats

USFWS-Identified Threats to GRSG and Its Habitat (2010 "Warranted but Precluded" Finding)	COT-Identified Threats to GRSG and Its Habitat (2013)	Applicable BLM and Forest Service Proposed Plan Resource Program Addressing Threat
Agriculture and urbanization	Agricultural conversion and ex-urban development	BLM: Lands and Realty Forest Service: Lands and Realty/Landownership Adjustments
Hard rock mining	Mining	BLM: Lands and Realty , Locatable Minerals, Salable Minerals, and Nonenergy Leasable Minerals Forest Service: Coal Mines, Locatable Minerals, Nonenergy Leasable Minerals and Mineral Materials
See Infrastructure, roads	Recreation	BLM: Recreation and Trails and Travel Management Forest Service: Recreation and Roads/Transportation
Infrastructure - Power lines/pipelines - Roads - Communication sites - Railroads Range improvements (see below)	Infrastructure	BLM: Lands and Realty and Trails and Travel Management Forest Service: Lands and Realty and Roads/Transportation
Infrastructure—range improvements	Range management structures	BLM: Range Management Forest Service: Livestock Grazing
Water developments	No similar threat identified	All applicable programs
Climate change	No similar threat identified	There is no BLM or Forest Service resource program in the proposed plan addressing this threat.
Weather	No similar threat identified	There is no BLM or Forest Service resource program in the proposed plan addressing this threat.
Predation	No similar threat identified	BLM: All applicable programs Forest Service: GRSG Habitat, Land and Realty, and Minerals

Table 2-1
USFWS Threats to GRSG and Its Habitat, Applicable BLM and Forest Service Proposed Plan Resource Program Areas Addressing these Threats

USFWS-Identified Threats to GRSG and Its Habitat (2010 "Warranted but Precluded" Finding)	COT-Identified Threats to GRSG and Its Habitat (2013)	Applicable BLM and Forest Service Proposed Plan Resource Program Addressing Threat
Disease	No similar threat identified	BLM: All applicable programs Forest Service: Minerals/Fluid Mineral Operations
Hunting	No similar threat identified	There is no BLM or Forest Service resource program in the proposed plan addressing this threat.
Contaminants	No similar threat identified	BLM: Public Health and Safety Forest Service: Minerals

Sources: USFWS 2010, 2013

2.6 PROPOSED PLAN AMENDMENT

2.6.1 Development of the Proposed LUPA

In developing the Proposed LUPA/ Final EIS, the BLM and Forest Service made modifications to the Preferred Alternative identified in the Draft LUPA /EIS. The modifications are based on public comments received on the Draft LUPA /EIS, internal BLM and Forest Service review, new information and best available science, the need for clarification in the plans, and ongoing coordination with stakeholders across the range of the GRSG. As a result, the Proposed LUP Amendments provide consistent GRSG habitat management across the range, prioritize development outside of GRSG habitat, and focus on a landscape-scale approach to conserving GRSG habitat. The BLM and Forest Service also received many substantive public comments on the Draft LUPA/EIS (see **Appendix C**), which greatly informed the BLM and Forest Service development of the Proposed LUPA/FEIS.

The BLM and Forest Service Proposed Plan Amendment considers documents related to the conservation of GRSG that have been released since the publication of the Draft LUPA/EIS. For example, this Proposed Plan Amendment considers the USFWS's October 27, 2014, memorandum, Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes, and the USGSs' November 21, 2014, report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review (USGS 2014). Based on these documents, the BLM is proposing to designate SFAs to further protect highly valuable habitat. It is also proposing to include lek buffer-distances when authorizing activities near leks. The BLM and Forest Service also updated the Proposed Plan Amendment to reflect new GRSG state conservation strategies, including recent state executive orders.

The BLM and Forest Service have refined the Proposed Plan Amendment to provide a layered management approach that offers the highest level of protection for GRSG in the most valuable habitat. Land use allocations in the Proposed Plan would limit or eliminate new surface disturbance in PHMAs, while minimizing disturbance in GHMAs. In addition to establishing protective land use allocations, the Proposed Plan Amendment would implement a suite of management tools, such as disturbance limits (see **Appendix F**), GRSG habitat objectives and monitoring (see **Appendix E**), mitigation approaches (see **Appendix I**), adaptive management triggers and responses (see **Section 2.7**), and lek buffer-distances (see **Appendix B**) throughout the range. These overlapping and reinforcing conservation measures will work in concert to improve and restore GRSG habitat condition and provide consistency on how the BLM and Forest Service will manage activities in GRSG habitat.

For the sake of clarity, BLM and Forest Service decisions have been separated into two sections (**Sections 2.6.2** and **2.6.3**, respectively) in the Proposed Plan Amendment.

In considering the allocation decisions identified in the Proposed Plan below, where more restrictive land use allocations or decisions are made in existing RMPs, those more restrictive land use allocations or decisions will remain in effect and will not be amended by this LUPA.

2.6.2 BLM Proposed Plan Amendment

Greater Sage-Grouse

Goal SSS 1: Conserve, enhance, and restore the sagebrush ecosystem upon which GRSG populations depend in an effort to maintain and/or increase their abundance and distribution, in cooperation with other conservation partners

Objective SSS 1: Manage land resource uses to meet GRSG habitat objectives, as described in **Table 2-2**. The habitat objectives would be used to evaluate management actions that are proposed in GRSG habitat. Managing for habitat objectives would ensure that habitat conditions are maintained if they are currently meeting objectives or if habitat conditions move toward these objectives in the event that current conditions do not meet these objectives.

The habitat objectives in **Table 2-2** summarize the characteristics that research has found represent the seasonal habitat needs for GRSG. The specific seasonal components identified in the Table were adjusted based on local science and monitoring data to define the range of characteristics used in this sub-region. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the landscape that indicate the seasonal habitats used by GRSG. These habitat indicators are consistent with the rangeland health indicators used by the BLM.

The habitat objectives will be part of the GRSG habitat assessment to be used during land health evaluations (see **Appendix E**). These habitat objectives are not obtainable on every acre within the designated GRSG habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.

All BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. If monitoring data show the habitat objectives have not been met nor progress being made towards meeting them, there will be an evaluation and a determination made as to the cause. If it is determined that the authorized use is a cause, the use will be adjusted by the response specified in the instrument that authorized the use (Stiver et. al 2015, in press).

Table 2-2
Proposed Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
GENERAL/LANDSCAPE-LEVEL			
All life stages	Rangeland health assessments	Meeting all standards[1]	
Cover (nesting)	Seasonal habitat needed	>65% of the landscape in sagebrush cover	Aldridge and Boyce 2007
	Annual grasses	<%5	Blomberg et al. 2012
Security (nesting)	Conifer encroachment	<3% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50% cover)	Casazza et al. 2011 USGS (in prep A)
Cover and food (winter)	Conifer encroachment	<5% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50%)	USGS (in prep A) USGS (in prep B)
	Sagebrush extent	>85% sagebrush land cover	USGS (in prep A) Doherty et al. 2008
LEK (Seasonal Use Period: March 1 to May 15)			
Cover	Availability of sagebrush cover	Has adjacent sagebrush cover	Blomberg et al. 2012 Connelly et al. 2000 Stiver et al. 2015 (in press) HAF
Security[2]	Pinyon or juniper cover	<3% landscape cover within .6 mile of leks	Connelly et al. 2000 (modified) Stiver et al. 2015 (in press) HAF Baruch-Mordo et al. 2013
	Proximity of tall structures[3]	Use Manier et al. 2014-Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles	Coates et al. 2013 Manier et al. 2014
NESTING (Seasonal Use Period: April 1 to June 30)			
Cover	Sagebrush cover	≥20%	Kolada et al. 2009a, 2009b
	Residual and live perennial grass cover	≥10% if shrub cover is <25%[4]	Coates et al. 2013 Coates and Delehanty 2010 Kolada et al. 2009a, 2009b
	Annual grass cover	<5%	Lockyer et al. (in press)
	Total shrub cover	≥30%	Coates and Delehanty 2010 Kolada et al. 2009a Lockyer et al. (in press)
	Perennial grass height	Provide overhead and lateral concealment from predators[7]	Connelly et al. 2000, 2003 Hagen et al. 2007; Stiver et. al. 2015 (in press) HAF

Table 2-2
Proposed Habitat Objectives for GRSG

Attribute	Indicators	Desired Condition (Habitat Objectives)	Reference
Security[2]	Proximity of tall structures[3] (3 feet [1 meter] above shrub)	Use Manier et al. 2014, Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles	Coates et al. 2013 Gibson et al. 2013 Manier et al. 2014
BROOD-REARING/SUMMER (Seasonal Use Period: May 15 to September 15; Early: May 15 to June 15; Late: June 15 to September 15)			
UPLAND HABITATS			
Cover	Sagebrush cover	10 to 25%	Connelly et al. 2000
	Perennial grass Cover and forbs	>15% combined perennial grass and forb cover	Connelly et al. 2000 Hagen et al. 2007
	Deep rooted perennial bunchgrass	7 inches[5, 6]	Hagen et al. 2007
Cover and food	Perennial forb cover	≥5% arid ≥15% mesic	Casazza et al. 2011 Lockyer et al. (in press)
RIPARIAN/MEADOW HABITATS			
Cover and food	Riparian areas/meadows	PFC	Dickard et al. 2014 Prichard et al. 1998, 1999 Stiver et al. 2015 (in press) HAF
Security	Upland and riparian perennial forb availability and understory species richness	• Preferred forbs are common with several species present[5] • High species richness (all plants)	Stiver et al. 2015 (in press) HAF
	Riparian area/meadow interspersion with adjacent sagebrush	Has adjacent sagebrush cover	Casazza et al. 2011 Stiver et al. 2015 (in press) HAF
WINTER (Seasonal Use Period: November 1 to February 28)			
Cover and Food	Sagebrush cover	≥10% above snow depth	Connelly et al. 2000 USGS (in prep C)
	Sagebrush height	>9.8 inches above snow depth	Connelly et al. 2000 USGS (in prep C)

[1]Upland standards are based on indicators for cover, including litter, live vegetation, and rock, appropriate to the ecological potential of the site.
[2] Applicable to Phase I and Phase II pinyon and/or juniper.
[3] Does not include fences.
[4]In addition, if upland rangeland health standards are being met.
[5]Relative to ecological site potential.
[6] In drought years, 4-inch perennial bunchgrass height with greater than 20 percent measurements exceeding 5 inches in dry years.
[7] Specific height requirements needed to meet the objective will be set at the time of HAF assessments.

Objective SSS 2: Maintain or improve connectivity between, to, and in PHMAs and GHMAs to promote movement and genetic diversity for GRSG population persistence and expansion.

Objective SSS 3: Identify and implement GRSG conservation actions that can augment, enhance, or integrate program conservation measures established in agency and state land use and policy plans.

Objective SSS 4: In PHMAs and GHMAs, apply the concept of "avoid, minimize, and compensatory mitigation" for all human disturbance not already excluded or closed, so as to avoid adverse effects on GRSG and its habitat. The first priority would be to avoid new disturbance; where this is not feasible, the second priority would be to minimize and mitigate any new disturbance (**Appendix J**).

Action SSS 1: In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat:[1]

- First priority—locate project/activity outside PHMAs and GHMAs
- Second priority—if the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG
  - In non-habitat, ensure the project/activity would not create a barrier to movement or connectivity between seasonal habitats and populations
- Third priority—collocate the project/activity next to or in the footprint of existing infrastructure

Action SSS 2: In PHMAs, the following conditions would be met in order to minimize and mitigate any effects on GRSG and its habitat from the project/activity:[2]

- Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) biologically significant units (BSUs; total PHMA area associated with a GRSG population area) and 2) in a proposed project analysis area. See **Appendix F** (Disturbance Cap Guidance) for additional information on implementing the disturbance cap, including what is

[1]The screening criteria would not be applicable to vegetation treatments being conducted to enhance GRSG habitat.
[2]The conditions would not be applicable to vegetation treatments being conducted to enhance GRSG habitat, with the exceptions of seasonal restrictions and noise.

and is not considered disturbance and how to calculate the proposed project analysis area, as follows:

- If the 3 percent human disturbance cap is exceeded on all lands (regardless of ownership) in PHMAs in any given BSU, then no further discrete human disturbances (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, and valid existing rights) will be permitted, by BLM within GRSG PHMA in any given BSU until the disturbance has been reduced to less than the cap (see Nevada exception under SSS 2 a. 3. **Appendix F**).
- If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, valid existing rights; see Nevada exception under SSS 2 a. 3. **Appendix F**).
- For BLM land in the state of Nevada only, the following disturbance management protocol (DMP) is intended to provide for a 3 percent limitation on disturbance, except in situations where a biological analysis indicates a net conservation gain to the species.
    - Such discretionary activities that would cause disturbances in excess of 3 percent at the project or BSU scale (see **Appendix F**) would be prohibited, unless a technical team described below determines that new or site-specific information indicates the project could be modified to result in a net conservation gain at the BSU level. Factors considered by the team will include GRSG abundance and trends, habitat amount and quality, extent of project disturbance, location and density of existing disturbance, project design options and other biological factors.
    - Any exceptions to the 3 percent disturbance limitation 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 NDOW, the USFWS, and the BLM unanimously find that the proposed action satisfies the conditions stated in the above paragraph. Such finding shall initially be made by the

technical team, which consists of a field biologist or other GRSG experts from each respective agency. In the event the initial finding is 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 finding is not unanimous, the exception will not be granted (**Appendix F**).

- For BLM land in the state of California only, subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in the PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is co-located into an existing disturbed area.

- The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) would result in an overall net conservation gain to GRSG (see **Appendix I**).
- Authorized/permitted activities are implemented by adhering to the RDFs described in **Appendix D**, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:
  - A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the 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.
  - A specific RDF will provide no additional protection to GRSG or its habitat.
- In management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File-Report 2014-1239 (Manier et al. 2014), in accordance with **Appendix B**.

- Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods:
  - In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30
    - Lek—March 1 to May 15
    - Lek hourly restrictions—6 p.m. to 9 a.m.
    - Nesting—April 1 to June 30
  - Brood-rearing habitat from May 15 to September 15
    - Early—May 15 to June 15
    - Late—June 15 to September 15
  - 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 CDFW, in order to better protect GRSG and its habitat.
- Authorizations and permits would limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See **Appendix K**, Summary of Noise-Monitoring Recommendations.

Action SSS-3: In GHMAs, the following conditions would be met in order to minimize and mitigate any effects on GRSG or its habitat from the project/activity:[3]

- The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) in GHMAs would result in an overall net conservation gain to GRSG (see **Appendix I**, Mitigation Framework).
- Authorized/permitted activities are implemented adhering to the RDFs described in **Appendix D**, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

[3]The conditions would not be applicable to vegetation treatments being conducted to enhance GRSG habitat, with exceptions for seasonal restrictions and noise.

  - A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the 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.
  - A specific RDF will provide no additional protection to GRSG or its habitat.

- In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File Report 2014-1239 (Manier et.al 2014]), in accordance with **Appendix B**.
- Seasonal restrictions would be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbing GRSG during seasonal life cycle periods, as follows:
  - In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30:
    - Lek—March 1 to May 15
    - Lek hourly restrictions—6 p.m. to 9 a.m.
    - Nesting—April 1 to June 30
  - Brood-rearing habitat from May 15 to September 15
    - Early—May 15 to June 15
    - Late—June 15 to Sept 15
  - 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 climactic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW and CDFW, in order to better protect GRSG.
- Authorizations and permits would limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See **Appendix K**, Summary of Noise-Monitoring Recommendations.

Action SSS 4: In OHMAs, authorized/permitted activities are implemented adhering to the RDFs described in **Appendix D,** consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the 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.
- A specific RDF will provide no additional protection to GRSG or its habitat.

Action SSS 5: Designate SFAs, as shown on **Figure 2-5** (2,797,400 acres). SFAs 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 management and conservation actions in these areas, including review of livestock grazing permits/leases (see LG actions below)

Action SSS 6: Cooperate with federal and state agencies, universities, and other organizations to establish and maintain a GRSG telemetry database.

Action SSS 7: Work with project proponents to limit project-related noise, seasonally or annually (see Actions SSS 2 and SSS 3), in GRSG habitat where it would be expected to reduce functionality of habitats that support associated GRSG populations. Support the establishment of ambient baseline noise levels for leks in PHMAs and GHMAs.

As additional noise-related research and information emerge, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize the potential for noise impacts on GRSG populations.

Action SSS 8: For any surface-disturbing activities proposed in PHMAs and GHMAs, the proponent will use the services of a qualified biologist approved by the BLM to conduct surveys for GRSG breeding activity during the GRSG breeding season before project activities begin. The surveys must encompass all

suitable GRSG habitats within a minimum of 4 miles of the proposed activities. Surveys will be conducted following protocols established by state fish and wildlife agencies during planning operations and during project activities. GRSG seasonal habitat delineations will also be required within a minimum of 4 miles of project activities.

Action SSS 9a: In Nevada only, the BLM would consult with the Sagebrush Ecosystem Technical Team (SETT) for application of the "avoid, minimize, and compensatory mitigation" strategy and the Conservation Credit System developed by the Nevada Natural Heritage Program and the SETT (2014a, 2014b) or other applicable mitigation system such as outlined in Appendix I. This would be to ensure that a net conservation gain of GRSG habitat occurs due to human disturbances in PHMAs and GHMAs (see **Appendix L**) on all agency-authorized activities. The specifics of the coordination will be identified in a MOU between the agencies.

Action SSS 9b: In California only, the BLM would follow the BLM mitigation strategy outlined in **Appendix I**.

Action SSS 10: Site-specific NEPA analysis on use authorizations would include project level adaptive management responses to address changed conditions in GRSG habitat and population trends, when necessary or as new data becomes available (see **Section 2.7.1**, Adaptive Management Plan).

Action SSS 11: Design and construct fences consistent with BLM H-1741-1, Fencing Standards Manual (BLM 1990), and apply the Sage-Grouse Fence Collision Risk Tool to Reduce Bird Strikes (NRCS 2012). Bring existing fencing into compliance as opportunities arise.

Disease

Objective SSS-DIS 1: Coordinate with state agencies to monitor trends of diseases, such as West Nile virus, in the sub-region to determine if mitigation or additional RDFs need to be applied (consistent with applicable law) to use authorizations.

Action SSS-DIS 1: When developing or modifying water developments on BLM-administered lands in PHMAs, GHMAs, and OHMAs and in accordance with state water law and subject to valid existing rights, use applicable RDFs consistent with applicable law to mitigate potential impacts from West Nile virus. Bring existing water developments into compliance as opportunities arise.

Predation

Objective PR 1: Manage human uses on public lands to reduce the effects of predation on GRSG.

Action PR 1: Require authorizations to include stipulations and RDFs consistent with applicable law to reduce or eliminate opportunities to attract and provide nesting, cover, or perches for predators in PHMAs and GHMAs.

Action PR 2: Coordinate with other federal, state, county, and tribal governments and local working groups to reduce GRSG deaths due to predation where it is determined to be additive or is a limiting factor influencing GRSG populations.

Action PR 3: Reduce and eliminate artificial hunting perches and nesting surfaces for aerial predators (e.g., remove fences, nonworking fences, and power lines and install anti-perch devices on existing and new power lines).

Action PR 4: Manage landfills and transfer stations on public lands by reducing opportunities for predator feeding and nesting.

Vegetation Management

Sagebrush-steppe

Objective VEG 1: In all SFAs and PHMAs, the desired condition is to maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).

Objective VEG 2: On public lands, establish, maintain, and enhance a resistant and resilient sagebrush vegetative community and restore sagebrush vegetation communities to reduce GRSG habitat fragmentation and maintain or reestablish GRSG habitat connectivity over the long term (Chambers et al. 2014).

Objective VEG 3: Manage PHMAs and GHMAs for vegetation composition and structure, consistent with ecological site potential and to achieve GRSG habitat objectives (**Table 2-2**).

Action VEG 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action VEG 2: Incorporate GRSG habitat objectives (**Table 2-2**) in the design of habitat restoration projects and manage treated areas to meet GRSG habitat objectives.

Action VEG 3: Use BLM GRSG habitat maps, habitat objectives (**Table 2-2** for GRSG habitat objectives), ecological site potential, state and transition models, and concepts of resistance and resilience (**Appendix G**) to prioritize habitat restoration projects, including those following wildfire, to address the most limiting GRSG habitat vegetation components and to connect seasonal ranges.

Habitat restoration includes the following:

i. Restoring sagebrush canopy in PHMAs and GHMAs to meet GRSG habitat objectives (**Table 2-2**)

ii. Reestablishing perennial grasses and native forbs in PHMAs and GHMAs

iii. Reducing or removing pinyon or juniper in PHMAs and GHMAs to enhance seasonal range connectivity and to maintain sagebrush canopy and understory integrity

iv. Restore areas affected by wildfire and the continuing invasive annual fire cycle to meet GRSG habitat objectives (**Table 2-2**)

v. Prioritize restoration in areas that have not crossed an ecological threshold

Action VEG 5: Plan vegetation treatments (including GRSG habitat treatments) in a landscape-scale context to address habitat fragmentation, effective patch size, invasive species presence, and intact sagebrush community protection, consistent with the GRSG habitat objectives identified in **Table 2-2**.

Action VEG 6: For Wyoming, mountain, and basin big sagebrush communities in PHMAs and GHMAs:

vi. Prioritize treatments that focus on enhancing, reestablishing, or maintaining the most limiting GRSG habitat component

vii. Reestablish sagebrush to meet GRSG habitat objectives (**Table 2-2**)

viii. Manage sagebrush communities to achieve age-class, structure, cover, and species composition objectives in GRSG habitat (**Table** 2-2)

ix. Restore herbaceous understory in brush-dominated areas to meet GRSG habitat objectives (**Table 2-2**)

x. Treat areas with cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species (**Table 2-2**)

xi. Treat disturbed areas in accordance with FIAT (see **Appendix G**), including implementation-level assessments

Action VEG 7: Manage for establishment of sagebrush in unmaintained nonnative seedings (e.g., crested wheatgrass seedings) in or next to GRSG habitat to meet habitat objectives (**Table 2-2**).

Action VEG 8: In PHMAs and GHMAs, give preference to native seeds for restoration, based on availability, adaptation (ecological site potential), and probability of success. Where the probability of success or adapted seed availability is low, nonnative seeds may be used, as long as they support GRSG habitat objectives. Choose native plant species outlined in Ecological Site Descriptions (ESDs), where available, to revegetate sites. Emphasize use of local seed collected from intact stands or greenhouse cultivation. If the commercial supply of appropriate native seeds and plants is limited, work with the BLM Native Plant Materials Development Program, NRCS Plant Material Program, or State Plant Material Programs. If currently available supplies are limited, use the materials that provide the greatest benefit for GRSG. In all cases, seed must be certified as weed free.

Action VEG 9: To increase seeding success and to ensure effective soil and seed contact, consider the use of specialized seed drills or other proven and effective methods that may become available based on new science.

Action VEG 10a: For Nevada BLM-managed lands, before implementation, establish project monitoring sites where vegetation treatment is planned. Treatment areas would be monitored both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved.

Action VEG 10b: For California BLM-managed lands, before implementation, establish project monitoring sites where vegetation treatment is planned. Treatment areas would be monitored both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved. Juniper treatments would be monitored in accordance with the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Action VEG 11: On public lands, where the attributes, quality, or lack of GRSG winter habitat has been identified as a limiting factor, emphasize vegetation treatments in known winter habitat to enhance quality or reduce wildfire risk around or in winter habitat.

Action VEG 12: In perennial grass, invasive annual grass, and conifer-invaded cover types, restore sagebrush steppe with local sagebrush seedings or planted seedlings where feasible.

Action VEG 13: Continue to coordinate with NDOW, CDFW, and NRCS for all development or habitat restoration proposals in PHMAs and GHMAs. Also, coordinate with the Nevada SETT, tribes, and local working groups on projects proposed in sagebrush ecosystems.

Conifer encroachment

Objective VEG-WD 1: In accordance with the vegetation dynamic development tool (VDDT; **Appendix M**), improve GRSG habitat by removing invading

conifers in the number of acres shown in **Table 2-3** by decade for the next 50 years.

Table 2-3
Conifer Treatment Acres per Decade

State	Mechanical Treatment[1]	Prescribed Fire[2]
Nevada	649,000	8,000
California[3]	34,000	10,0000
Total	**683,000**	**18,000**

[1]Removal of conifers that have invaded sagebrush, generally phase one juniper that is 10 percent or less.
[2]Acres are those that are greater than 30 percent sagebrush canopy cover and/or invaded by 10 percent or greater conifer.
[3]BLM California-managed lands will be consistent with annual acres of treatment specified in the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Action VEG-WD 1: Remove conifers encroaching into sagebrush habitats. Prioritize treatments closest to occupied GRSG habitats and near occupied leks and where juniper encroachment is phase 1 and phase 2. Use of site-specific analysis and tools like VDDT and FIAT (see **Appendices M** and **F**) will help refine the location for specific areas to be treated.

Action VEG-WD 2: Do not construct or create new roads (temporary or permanent), skid trails, or landings in phase I pinyon or juniper removal areas during project implementation for vegetation treatments. Administrative access, including off-road travel with heavy equipment and vehicles, would be allowed during implementation.

Action VEG-WD 3: Only treat habitats in late phase II or phase III pinyon or juniper condition to create movement corridors, connect habitats, or reduce the potential for catastrophic fire (see **Table 2-2**).

Invasive Species
Objective VEG-ISM 1: Reduce the amount of GRSG habitat loss due to wide-spread wildfires and invasion by nonnative species.

Objective VEG-ISM 2: Control invasive species infestations in GRSG habitat already compromised by invasion.

Objective VEG-ISM 3: In accordance with the VDDT (**Appendix M**), improve GRSG habitat by treating annual grasses in the number of acres shown in **Table 2-4** by decade.

Action VEG-ISM 1: Prevent the establishment of invasive species into uninvaded areas in PHMAs and GHMAs through properly managed grazing and by conducting systematic and strategic detection surveys, collecting data, mapping

Table 2-4
Annual Grass Treatment by Decade for 50 Years

State	Grass Restoration[1]
Nevada	1,354,000
California	257,000
Total	**1,611,000**

[1]Acres presently dominated by annual grasses that could be improved by herbicide application or seeding of perennial vegetation

these areas, and engaging in early response to contain and eradicate invasion if it occurs.

Action VEG-ISM 2: Control the spread and introduction of noxious weeds listed by the Nevada Department of Agriculture and California Department of Food and Agriculture (NAC 555.010, Classes A through C, inclusive and 3 CCR 4500, Noxious Weed Species Pest Rating A, B, C, and Q) and undesirable nonnative plant species (Gelbard and Belnap 2003; Bergquist et al. 2007). Work with federal, state, local, and tribal groups, such as Weed Control Districts, Cooperative Weed Management Areas, and Conservation Districts, in detecting and treating nonnative species.

Action VEG-ISM 3: Where scientific support is lacking, carefully construct treatments to rigorously assess the value or detriment of untested methods to determine their value for future application to GRSG habitats.

Action VEG-ISM 4: The BLM would cooperate with other federal, state, tribal and local agencies along with academia in researching the development of biological control agents and deploying emerging technologies as they become available.

Action VEG-ISM 5: Monitor and adjust treatment sites and methods as needed to ensure effectiveness of efforts to prevent and control invasive species and restore GRSG habitat.

Action VEG-ISM 6: Assess invasive annual grass presence and distribution before implementing vegetation restoration projects to determine if treatments are required to treat invasive annual grasses.

Action VEG- ISM 7: Treat sites in PHMAs and GHMAs that contain invasive species infestations through an integrated pest management (IPM) approach, using fire, chemical, mechanical, and biological (e.g., targeted grazing) methods, based on site potential and in accordance with FIAT (**Appendix G**).

Riparian and Wetlands Habitat
Objective VEG-RH 1: Manage riparian areas in PHMAs and GHMAs for vegetation composition and structure, consistent with ecological site potential and to achieve GRSG habitat objectives (**Table 2-2**).

Objective VEG-RH 2: Manage upland habitat associated with riparian areas to promote cover relative to site potential to facilitate brood-rearing habitat (**Table 2-2**).

Objective VEG-RH 3: Where riparian function has been compromised or lost, manage to restore riparian function and meet GRSG habitat objectives (**Table 2-2**).

Objective VEG-RH 4: In riparian and wet meadow areas, inventory, monitor, and control invasive species in PHMAs and GHMAs.

Action VEG-RH 1: Design and implement vegetation treatments in PHMAs and GHMAs to restore, enhance, and maintain riparian areas (**Table 2-2**).

Action VEG-RH 2: Consider an array of vegetation treatments to increase edge and expand mesic areas in PHMAs and GHMAs where riparian extent is limited by shrub encroachment (**Table 2-2**).

Action VEG-RH 3: Manage lotic riparian habitats in conjunction with adjacent terraces and valley bottoms as natural fuel breaks to reduce the size and frequency of wildfires in PHMAs and GHMAs.

Climate Change

Objective CC 1: Use the landscape approach and promote landscape-scale, ecosystem-based actions to enhance resiliency and sustainability of PHMAs and GHMAs to climate stress.

Objective CC 2: In PHMAs and GHMAs, manage risks of GRSG habitat degradation or loss from landscape stressors of drought, invasive species, and wildfire exacerbated by climate change to maintain existing GRSG populations and habitats.

Action CC 1: As climate change data become available through Rapid Ecoregional Assessments or other ecological studies, identify areas of unfragmented GRSG habitat and corridors that provide the life-cycle and genetic transfer needs for GRSG and adjust resource management practices, as needed.

Action CC 2: Cooperate with multiple agencies and stakeholders to establish and maintain a network of climate monitoring sites and stations.

Wildfire Management

Objective WFM 1: The safety of firefighters and the public is the highest priority. GRSG habitat would be prioritized commensurate with property values and other critical or sensitive habitats to be protected, with the goal to restore, enhance, and maintain areas suitable for GRSG.

Action WFM 1: Support the conservation of GRSG habitat objectives (**Table 2-2**) through appropriate wildfire management planning, coordination, staffing, resource allocations, training, equipment, and management oversight.

Action WFM 2: Prioritize fire operations and fuels management decisions in SFAs first, followed by PHMAs outside of SFAs in accordance with the implementation-level FIAT assessments, and then GHMAs for conservation and protection during fire operations and fuels management decision-making. When suppression resources are widely available, place maximum efforts on limiting fire growth in GHMAs as well.

Action WFM 3: BLM planning units (field offices and districts), in coordination with the USFWS and relevant state agencies, would annually review the GRSG landscape wildfire and invasive species habitat assessments. Based on this review, revised actions to ameliorate invasive species could be incorporated into the assessment.

Action WFM 4: Compile relevant field office- and district-level information into the statewide GRSG Annual Operating Handbook for use by resource advisors, wildfire crews, and agency administrators. The handbook would contain GRSG maps (including habitat and fuels treatment maps) and lists of state and local GRSG resource advisors and their contact information, local guidance, and other relevant information for each field office and district, aggregated into a statewide document.

Action WFM 5: Coordinate and collaborate with federal, tribal, state, and local governments and associations sanctioned through either California or Nevada that meet fire standards for effective and efficient wildfire response.

Action WFM 6: Strengthen and improve interagency wildfire prevention statewide through targeted wildfire prevention messages, including providing education on GRSG habitat loss, updating interagency agreements, and conducting wildfire prevention workshops and demonstration projects.

Pre-Suppression

Objective WFM-PSU 1: Use pre-suppression efforts to reduce the size and impact of wildfires in SFAs, PHMAs, and GHMAs.

Objective WFM-PSU 2: Protect post-fire treatments in PHMAs and GHMAs from subsequent wildfires.

Action WFM-PSU 1: Identify and prioritize areas that are vulnerable to wildfires and prescribe actions important for GRSG protection, in accordance with FIAT (see **Appendix G,** USDI 2015) and further refined in the implementation-level FIAT assessments.

Action WFM-PSU 2: Create fire management plans to guide wildfire suppression in order to protect PHMAs and GHMAs.

Action WFM-PSU 3: Before the fire season, train GRSG resource advisors on wildfire suppression organization, objectives, tactics, and procedures to develop a cadre of qualified individuals. Involve state wildlife agency experts in fire operations through the following:

- Instruction of resource advisors during preseason trainings
- Qualification as resource advisors
- Coordination with resource advisors before fire season
- Contribution to incident planning with information, such as habitat features or other key data useful in fire decision-making

Suppression

Objective WFM-SU 1: Use suppression to reduce the size and impact of wildfires in SFAs, PHMAs, and GHMAs.

Action WFM-SU 2: Provide local GRSG habitat maps to dispatch offices and extend attack incident commanders to prioritize wildfire suppression resources and design suppression tactics. Ensure GRSG habitat maps and suppression strategies are uploaded and updated in WFDSs.

Action WFM-SU 3: Assign a resource advisor with GRSG habitat expertise or with access to GRSG habitat expertise to all extended attack fires in or near SFAs, PHMAs, and GHMAs.

Action WFM-SU 4: In advance of critical fire weather, station additional federal fire suppression resources to optimize a quick and efficient response in SFAs, PHMAs, and GHMAs.

Action WFM-SU 5: During periods of multiple fires, ensure line officers prioritize decisions by coordinating with resource advisors.

Action WFM-SU 6: To the extent possible, locate wildfire suppression facilities (e.g., base camps, spike camps, drop points, staging areas, and helicopter bases) in areas to avoid disturbing PHMAs and GHMAs. These include disturbed areas, grasslands, roads and trails, or in other areas with existing disturbance or minimal sagebrush cover.

Action WFM-SU 7: Document fire operations (e.g., disturbance) in PHMAs and GHMAs for potential follow-up coordination and restoration.

Action WFM-SU 8: Use indirect attack tactics (including burn-out operations) when:

- Direct attack is not effective in stopping fires with the potential of becoming significantly larger due to fuel loading, weather conditions, and fire behavior.

- If firefighter and public safety would be threatened or compromised.

Action WFM-SU 9: Use retardant, mechanized equipment, and other available resources to minimize burned acreage during initial attack. As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.

Action WFM-SU 10: Minimize unnecessary cross-country vehicle travel during fire operations in GRSG habitat.

Fuels Management
Objective WFM-HFM 1: Protect and enhance PHMAs and GHMAs and areas of connectivity that support GRSG populations, including large contiguous blocks of sagebrush, through fuels management and incorporation of the FIAT assessment (**Appendix G**).

Action WFM-HFM 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action WFM-HFM 2: In PHMAs and GHMAs, apply fuels treatments on a landscape level to modify fire behavior, intensity, complexity (fire patchiness), size, and effects in which fire management efforts are enhanced.

Action WFM-HFM 3: Establish and maintain fuel breaks to protect GRSG and its habitat to limit fire size and mitigate fire behavior to increase suppression effectiveness. When possible, establish fuel breaks next to roads or other previously disturbed areas.

Action WFM-HFM 4: Use a full range of fuels management strategies and tactics within acceptable risk levels across the range of GRSG habitat consistent with land use plan direction.

Action WFM-HFM 5: If prescribed fire is used in GRSG habitat, the NEPA analysis for the Burn Plan will address:

- why alternative techniques were not selected as a viable option
- how GRSG goals and objectives would be met by its use
- how the COT report objectives would be addressed and met
- a risk assessment to address how potential threats to GRSG habitat would be minimized.

a) Allow prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the burn plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect GRSG habitat in PHMAs (e.g., creation of fuel breaks that would disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities).

b) Allow prescribed fire in known winter range shall only be considered after the NEPA analysis for the burn plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat would need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.

Action WFM-HFM 6: In coordination with the USFWS and relevant state agencies and in accordance with FIAT (see **Appendix G**), develop a fuels management strategy for the BLM with large blocks of GRSG habitat. The strategy should include an up-to-date fuels profile, land use plan direction, current and potential habitat fragmentation, sagebrush and GRSG ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity. When developing this strategy, consider the risk of increased habitat fragmentation from a proposed action versus the risk of large-scale fragmentation posed by wildfires if the action were not taken.

Action WFM-HFM 7: Design fuels treatments through an interdisciplinary team process to expand, enhance, maintain, and protect PHMAs and GHMAs. Fuel reduction techniques, such as prescribed fire and chemical, biological (including targeted grazing), and mechanical treatments, are acceptable. Use green strips and fuel breaks, where appropriate, to protect seeding from subsequent fires.

Action WFM-HFM 8: In coordination with the USFWS and relevant state agencies and in accordance with FIAT (see **Appendix G**), BLM Districts will identify treatment needs for wildfire and invasive species management. Ongoing treatment needs would be coordinated on state and regional scales and across jurisdictional boundaries for long-term conservation of GRSG and its habitat.

Action WFM-HFM 9: On project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and other treatment components. Control invasive vegetation post-treatment.

Action WFM-HFM 10: Design fuels treatments to protect sagebrush ecosystems, modify fire behavior, restore ecological function, and create landscape patterns that most benefit PHMAs and GHMAs and promote use by GRSG.

Action WFM-HFM 11: Train fuels treatment personnel on GRSG biology, habitat requirements, and identification of areas used locally.

Action WFM-HFM 12: Use burning prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize killing desirable perennial plant species and reduce risk of annual grass invasion) and incorporate FIAT assessment (Chambers et. al 2014) in PHMAs and GHMAs.

Action WFM-HFM 13: Ensure proposed sagebrush treatments are planned with interdisciplinary input from the BLM and coordinated with state fish and wildlife agencies to meet GRSG habitat objectives (**Table 2-2**).

Action WFM-HFM 14: Design vegetation treatments in areas of high fire frequency to facilitate firefighter safety, reduce the potential acres burned, and reduce the fire risk to GRSG habitat.

Action WFM-HFM 15a: For Nevada BLM-administered lands, before implementation, establish project monitoring sites where fuels management projects are planned. Monitor treatment areas both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved.

Action WFM-HFM 15b: For California BLM-managed lands, before implementation, establish project monitoring sites where fuels management projects are planned. Monitor treatment areas both pre- and post-treatment on a multiple-year basis to ensure that project objectives are achieved. Juniper treatments would be monitored in accordance with the Sage Steppe Ecosystem Restoration FEIS (BLM 2008).

Post Fire Management

Objective WFM-PF 1: Retain, protect, and improve intact unburned sagebrush communities in burned areas by incorporating the FIAT assessment (Chambers et. al 2014).

Action WFM-PF 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action WFM-PF 2: Prioritize post-fire treatments in PHMAs and GHMAs to maximize benefits to GRSG and its habitat. Focus post-fire treatments on replacing or reestablishing burned sagebrush habitat with the appropriate cover and structure to support GRSG habitat objectives (**Table 2-2**).

Action WFM-PF 3: Design and implement post-fire treatments in PHMAs and GHMAs that emphasize stabilizing, rehabilitating, and restoring sagebrush ecosystems damaged by wildfires, including controlling invasive species.

Action WFM-PF 4: Increase post-fire treatment activities in PHMAs and GHMAs through the use of integrated funding opportunities with other resource programs and partners.

Action WFM-PF 5: In post-fire rehabilitation plans in PHMAs and GHMAs, design revegetation projects to accomplish the following:

- Maintain and enhance unburned intact sagebrush communities when at risk from adjacent threats
- Stabilize soils
- Reestablish hydrologic function
- Maintain and enhance biological integrity
- Promote plant resiliency
- Limit expansion or dominance or invasive species
- Reestablish native species

Action WFM-PF 6: Following post-fire treatments, monitor and implement management actions in PHMAs and GHMAs that promote healthy perennial grass, shrub and forb communities, and lentic (slow-moving freshwater) and lotic (rapid freshwater) riparian habitats so as to further restoration and ensure long-term persistence of seeded or pre-burn native plants, in accordance with GRSG habitat objectives (**Table 2-2**).

Action WFM- PF 7: Evaluate the potential for sagebrush island plantings based on ESDs in large burn areas that may lack sufficient sagebrush seed sources in order to ensure the reestablishment of sagebrush in GRSG habitat.

Action WFM-PF 8: Monitor post-fire rehabilitation treatments on a multiple-year basis to ensure that project objectives are achieved.

Action WFM-PF 9: Use GRSG habitat objectives (**Table 2-2**) and emphasize the use of native plant species in post-fire rehabilitation (e.g. reseeding), recognizing that nonnative species may be necessary, depending on the availability of native seed and prevailing site conditions. Selected species should maintain site ecological function based on pre-burn conditions and anticipated threat of invasive and noxious weed establishment. Use ESDs and state and transition models if available.

Livestock Grazing

Objective LG 1: Manage permitted livestock grazing to maintain and/or enhance PHMAs and GHMAs to meet or make progress towards meeting all GRSG life-cycle requirements and habitat objectives (**Table 2-2**), based on site potential.

Action LG 1: When renewing term grazing permits or leases, or when revising or developing new allotment management plans within PHMAs and GHMAs, if not meeting, or making progress towards meeting land health standards, as associated with not meeting GRSG habitat objectives, and grazing is a significant causal factor, adjust permits and take actions prior to the start of the next grazing season by implementing management strategies, including the addition of one or more of the following (not in priority order):

- Season or timing of use
- Numbers of livestock (includes temporary nonuse or livestock removal)
- Intensity of use
- Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas, and goats)
- Extended rest or temporary closure from grazing through BLM administrative actions
- Make allotment unavailable to grazing

Action LG 2: The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in SFAs followed by PHMAs outside of the SFAs. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting land health standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.

Action LG 3: The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFAs and PHMAs will include specific management thresholds based on GRSG Habitat Objectives Table, Land Health Standards (43 CFR 4180.2) and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis.

Action LG 4: Complete land health assessments in PHMAs and GHMAs to identify whether or not GRSG habitat objectives (**Table 2-2**) are being met. The priority order for completing land health assessments in GRSG habitat is:

- Allotments containing SFAs that have never been evaluated;
- Allotments containing SFAs that have not been re-evaluated in 10 or more years;
- Allotments containing PHMAs that have never been evaluated;

- Allotments containing PHMAs that have not been re-evaluated in 10 or more years;
- Allotments containing GHMAs that have never been evaluated;
- Allotments containing GHMAs that have not been re-evaluated in 10 or more years.

Action LG 5: If results from a land health assessment indicate that GRSG habitat objectives (**Table 2-2**) are not met in SFAs, PHMAs, or GHMAs and grazing is a causal factor, and until appropriate modifications (Action LG 1) are incorporated through the permit renewal process, implement management strategies that may include the following:

- Provide periods of rest or deferment during critical growth periods of key vegetation species
- Limit grazing duration and intensity to allow plant growth sufficient to meet GRSG habitat objectives (**Table 2-2**)
- Employ herd management techniques to minimize impacts of livestock on breeding, nesting, and brood-rearing habitat during the breeding season (March 1 to June 30; Lek—March 1 to May 15, and Nesting—April 1 to June 30)
- Consider any temporary projects that could mitigate livestock impacts (e.g., temporary fencing or temporary water hauling locations;
- Work with permittees to avoid concentrated turn-out locations for livestock within 4 miles of active and pending leks from March 1 to June 30
- Avoid domestic sheep use and bedding areas and herder camps within 2 miles of active and pending leks from March 1 to June 30
- Utilizing land features and roads on maps provided to the permittee to help delineate livestock use avoidance areas
- Considering no grazing from May 15 – Sept. 15 in riparian areas and wet meadows.
- Removing livestock within 3-7 days for the remainder of the grazing year once the allowable use levels are reached (BLM 1996, Burton et. al 2011, Cagney et. al, 2010, Connelly et. al 2000, France et. al 2008, Hagen et. al 2007, Holechek 1988, Platts 1990, and Tanaka et. al 2014):
  - In riparian areas and wet meadows the allowable percent utilization is 35% woody species, and a minimum stubble height of 4-6 inches (10-15 cm) for herbaceous riparian vegetation based on site.

  - In mountain big sage habitat, the allowable percent utilization is 40 % herbaceous key species and/or 35 % shrub key species.
  - In Wyoming Basin big sage habitat, the allowable percent utilization is 35% herbaceous key species and/or 35 % shrub key species.
  - In black sage habitat, the allowable percent utilization is 35% herbaceous key species and/or 35 % shrub key species.

Action LG 6: Appropriate allowable utilization levels will be defined through the grazing permit renewal process. At least one alternative in the NEPA process will consider the utilization levels identified in Action LG 5.

Action LG 7: In pastures where post livestock removal use monitoring results in utilization levels that exceed allowable use levels and livestock are identified as a causal factor, reduce AUMs grazed the following year accordingly. AUMs cannot be applied to another pasture.

Action LG 8: Within PHMAs and GHMAs, incorporate terms and conditions into grazing permits to meet GRSG habitat objectives (**Table 2-2**), specific terms and conditions would be based on rangeland health assessments (and subsequent monitoring data).

Action LG 9: When a transfer application is received for preference on an allotment within GRSG habitat:

- Transfer of Preference: A transfer of preference will be approved unless the applicant does not meet qualifications (43 CFR 4110.1 and 4110.2). A transfer will be approved to an unqualified applicant if 4110.2-3(e) applies.
- Issuing the permit: In accordance with Section 402(c)(2) of FLPMA, a new permit will be issued to the new preference holder with the same terms and conditions as the terminated permit unless:
  - A NEPA analysis of alternative terms and conditions has been completed. If changes in terms and conditions are needed to meet sage-grouse habitat needs or otherwise make progress toward meeting land health standards, issue a decision offering a permit with the new terms and conditions
- If a new permit is issued as required by Section 402(c)(2) of FLPMA, then determine priority for completing land health evaluations, habitat assessments and NEPA analysis as described in Action LG 1.

Action LG 10: In any allotment where land health standards were not met and livestock grazing was found to be a significant causal factor, compliance

monitoring will be conducted annually until GRSG habitat objectives (**Table 2-2**) are met. If compliance monitoring finds that the implemented management strategies identified in Action LG 5 are not achieving the desired results, a change in action would be required.

Action LG 11: Allotments within SFAs, followed by those within PHMAs, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.

Action LG 12: Grazing management strategies for riparian areas and wet meadows would, at a minimum, maintain or achieve proper functioning condition (PFC) and promote GRSG brood-rearing habitat objectives (**Table 2-2**) within PHMAs and GHMAs.

Action LG 13: For range improvement projects, review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LG 14: Build or modify livestock exclosures so that they are large enough to provide hiding cover to GRSG and other wildlife and to reduce the possibility of wildlife collisions with fences (Christiansen 2009; Stevens 2011; NRCS 2012).

Action LG 15: Subject to valid existing rights, remove or modify water developments that are negatively impacting GRSG habitats.

Action LG 16: Authorize new water developments for diversion from spring or seep source, in accordance with state water law and subject to valid existing rights when PHMAs and GHMAs would benefit from or not be negatively impacted by the new development. This includes developing new water sources for livestock as part of a grazing management plan to improve GRSG habitat.

Action LG 17: Modify water development projects to ensure riparian habitats in PHMAs and GHMAs are being maintained or improved in compliance with valid existing rights and in accordance with state water law.

Action LG 18: Locate salting and supplemental feeding locations, temporary or mobile watering, and new handling facilities (e.g., corrals and chutes) at least 1 mile from riparian areas, springs, and meadows. The distance can be greater based on site-specific conditions.

Action LG 19: In PHMAs and GHMAs, remove livestock ponds built in perennial channels that are negatively impacting riparian habitats, either directly or indirectly, unless riparian access is able to be controlled and negative impacts effectively mitigated (e.g.; water gap fence to pond), and do not permit new

ones to be built in these areas subject to valid existing rights. Prior to pond removal, offsite watering options would be examined and considered.

Action LG 20: In PHMA and GHMA, rest areas that have received vegetative treatments from livestock grazing until resource monitoring data verifies the treatment objectives are being met and an appropriate grazing regime has been developed. Any livestock grazing temporary suspended use or other management changes per 43 CFR 4110.3-2a for the purpose of a vegetation treatment would be done through the grazing decision, prior to treatment.

Action LG 21: At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments and fire breaks.

Action LG 22: After grazing rest associated with vegetation treatments in PHMAs and GHMAs, monitor annually for a minimum of 5 years to ensure project objectives are being maintained.

Action LG 23: Fences should not be constructed or reconstructed within 1.2 miles from the perimeter of occupied leks, unless the collision risk can be mitigated through design features or markings (e.g., mark, laydown fences, and design).

Wild Horses and Burros

Action WHB 1: For WHB management activities (e.g., gathers), review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action WHB 2: Manage herd management areas (HMAs) in GRSG habitat within established AML ranges to achieve and maintain GRSG habitat objectives (**Table 2-2**).

Action WHB 3: Complete rangeland health assessments for HMAs containing GRSG habitat using an interdisciplinary team of specialists (e.g., range, wildlife, and riparian). The priorities for conducting assessments are:

1. HMAs containing SFA;
2. HMAs containing PHMAs, which include riparian areas;
3. HMAs containing only GHMAs;
4. HMAs containing sagebrush habitat outside of PHMAs and GHMAs mapped habitat;
5. HMAs without GRSG habitat.

Action WHB 4: Prioritize gathers and population growth suppression techniques in HMAs in GRSG habitat, unless removals are necessary in other areas to address higher priority environmental issues, including herd health impacts. Place higher priority on herd areas not allocated as HMAs and occupied by wild horses and burros in SFAs, followed by PHMAs.

Action WHB 5: In SFAs and PHMAs outside SFAs, assess and adjust AMLs through the NEPA process within HMAs when wild horses or burros are identified as a significant causal factor in not meeting rangeland health standards, even if current AML is not being exceeded.

Action WHB 6: In SFAs and PHMAs outside of SFAs, monitor the effects of WHB use in relation to GRSG habitat objectives (**Table 2-2**) on an annual basis to help determine future management actions.

Action WHB 7: Develop or amend herd management area plans (HMAPs) to incorporate GRSG habitat objectives (**Table 2-2**) and management considerations for all HMAs within GRSG habitat, with emphasis placed on SFAs and PHMAs outside of SFAs.

Action WHB 8: Consider removals or exclusion of WHB during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives (**Table 2-2**) where HMAs overlap with GRSG habitat.

Action WHB 9: When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

Action WHB 10: Coordinate with professionals from other federal and state agencies, researchers at universities, and others to utilize and evaluate new management tools (e.g., population growth suppression, inventory techniques, and telemetry) for implementing the WHB program.

Lands and Realty Actions

Objective LR 1: Manage land use authorizations, including ROWs, leases, permits, and tenure adjustments, to maintain or enhance PHMAs and GHMAs and connectivity.

Land Tenure

Action LR-LT 1: Lands classified as PHMAs and GHMAs for GRSG will be retained in federal management, unless: (1) the agency can demonstrate that disposal of the lands will provide a net conservation gain to GRSG or (2) the agency can demonstrate that the disposal of the lands will have no direct or indirect adverse impact on conservation of the GRSG.

Action LR-LT 2: Where significant conservation actions could be achieved in PHMAs and GHMAs, seek to acquire lands with intact subsurface mineral estate by donation, purchase, or exchange in order to best conserve, enhance, or restore GRSG habitat.

Action LR-LT 3: Manage lands acquired by exchange, purchase or easement as either PHMAs or GHMAs, in consideration of surrounding habitat.

Withdrawals

Action LR-LW 1: Recommend SFAs for withdrawal from the General Mining Act of 1872, as amended; subject to valid existing rights (see **Appendix H, Figure 2-5**).

Land Use Authorizations and Corridors

Industrial Solar

Action LR-IS 1: Designate PHMAs and GHMAs as ROW exclusion for utility-scale solar energy facilities (those that generate 20 megawatts or more).

Action LR-IS 2: In PHMAs and GHMAs, consider approving solar facilities on existing industrial infrastructure (e.g., a mine site) to generate power on-site. Review Objective SSS 4 and apply Actions SSS 1 through SSS 3 when reviewing and analyzing projects and activities proposed in GRSG habitat. In OHMAs, apply Action SSS 4.

Wind Energy Development

Action LR-WD 1: Designate PHMAs as ROW exclusion for utility-scale commercial wind energy facilities (those that generate 20 megawatts or more).

Action LR-WD 2: Within PHMAs, wind facilities associated with existing industrial infrastructure (e.g., a mine site) to provide on-site power generation could be considered for approval, subject to a net conservation gain. Apply Actions SSS 1 through SSS 2 when reviewing and analyzing projects/activities proposed within GRSG habitat.

Action LR-WD 3: Designate GHMAs as ROW avoidance for utility-scale commercial wind energy facilities (i.e., facilities that generate 20 megawatts or more). Review Objective SSS 4 and apply Actions SSS 1 through SSS 3 when reviewing and analyzing projects/activities proposed within GRSG habitat. In OHMAs apply Action SSS 4.

Corridors

Action LR LUA 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LR LUA 2: Only utility corridors identified on **Figure 2-67** remain as designated corridors in PHMAs and GHMAs. All previously designated corridors in PHMAs and GHMAs not shown on the map that were designated through past land use planning efforts have been evaluated and undesignated.

Action LR LUA 3: On public lands, keep the designated corridors identified on **Figure 2-67** in PHMAs and GHMAs available to new uses, subject to a maximum corridor width of 3,500 feet, unless a narrow width is specified in an existing plan.

High-Voltage Transmission Lines and Major Pipeline ROWs

Action LR-LUA 4: PHMAs and GHMAs are designated as avoidance areas for high voltage transmission line ROWs (>100 kV), except for the TransWest Express transmission line. All authorizations in these areas, other than the excepted project, must comply with the conservation measures outlined in this proposed plan amendment, including the all of the requirements presented in Actions SSS 1 – SSS 4. The BLM is currently processing an application for the TransWest Express transmission line and the NEPA review for this project is well underway. The BLM is analyzing GRSG mitigation measures through the project's NEPA review process.

Action LR-LUA 5: PHMAs and GHMAs are designated as major pipeline (≥24-inch diameter) ROW avoidance areas. Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat. In OHMAs, apply Action SSS 4.

Action LR-LUA 6: Issue ROWs only after documenting that they would not adversely affect or disrupt GRSG habitat (independent of disturbance cap), except where such limitation would make accessing valid existing rights impracticable in PHMAs and GHMAs.

Minor ROWs, Permits, and Leases

Action LR-LUA 7: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LR-LUA 8: Manage PHMAs as avoidance areas for ROWs (including permits and leases). These do not include the wind, solar, or high-voltage transmission line and major pipeline ROW actions, above.

Action LR-LUA 9: Manage GHMAs as open to ROWs (including for permits and leases). These do not include the wind, solar, or high-voltage transmission line and major pipeline ROW actions, above.

Action LR-LUA 10: In PHMAs, bury new distribution power and communication lines in existing disturbed areas, unless it would not be technically feasible or the cost would prohibit the proponent from providing the service. Where burying

transmission lines is not feasible, locate new transmission lines next to existing linear disturbances, when possible; additional mitigation would be required.

Action LR-LUA 11: When renewing or amending ROWs (including permits and leases), assess the impacts of ongoing use of the ROW on GRSGs and their habitat and minimize such impacts to the extent allowed by law.

Action LR-LUA 12: When renewing or amending ROWs that are undeveloped, work with ROW holders to bury or relocate authorized but undeveloped lines to minimize impacts on PHMAs, unless this would not be technically feasible or would be contrary to policy. Where burying transmission lines is not feasible, locate new transmission lines next to existing linear disturbances, when possible.

Action LR-LUA 13: In PHMAs and GHMAs where existing ROWs, permits, or leases are no longer in use, coordinate with the authorized holder to relinquish the authorization and reclaim the site by removing the infrastructure.

Action LR-LUA 14: Stipulate site relinquishment and reclamation in all new, amended or renewed ROWs, permits, and leases.

Action LR-LUA 15: When issuing new communication site management plans or amending existing plans, include GRSG habitat objectives (**Table 2-2**). Current authorizations would then be amended to reflect the updated communication site management plans.

Action LR-LUA 16: In PHMAs and GHMAs, site new linear features in designated corridors, as identified on **Figure 2-67**, or at a minimum, collocate with existing linear features. Construct new ROWs in designated corridors as close as technically feasible to existing linear ROW infrastructure to limit disturbance to the smallest footprint.

Action LR-LUA 17: Manage landfills and transfer stations on public lands to eliminate opportunities to attract and provide nesting, cover, or perches for predators.

Action LR-LUA 18: Within 4 miles of active and pending leks in GRSG habitat, require ROW, permit, and lease holders to retrofit those portions of power lines and other utility structures with nesting and perch-deterring devices. Do this during the renewal and amendment process if adverse effects, such as increased nest predation, on GRSG populations have been documented. This requirement should be predicated on research and monitoring studies specific to power lines or other utility structures.

Action LR-LUA 19: In PHMAs and subject to valid existing rights, authorize new road ROWs only when necessary for public safety or administrative access, or if it would create no new surface disturbance.

Action LR-LUA 20: Do not manage existing federal and state road easements as PHMAs or GHMAs and exempt them from the management actions associated with PHMAs and GHMAs. Any new modification or adjustments outside of the existing easement would be subject to Actions SSS 1 through SSS 4.

Action LR-LUA 21: In PHMAs and GHMAs, address access to valid existing rights to provide the minimum access necessary to exercise the right and maintain or enhance PHMAs and GHMAs.

Fluid Minerals

Objective FM 1: Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, that are subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 C.F.R. 3162.3-1(h).

Objective FM 2: Where a proposed fluid mineral development project on an existing lease could adversely affect GRSG populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to GRSG or its habitat and will ensure that the best information about GRSG and its habitat informs and helps to guide development of such federal leases.

Unleased Fluid Minerals

Action UFM 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action UFM 2: Manage SFAs as NSO without waivers, exceptions, or modifications (see **Appendix H, Figure 2-5**).

Action UFM 3: In PHMAs outside of SFAs, 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. Would not have direct, indirect, or cumulative effects on GRSG or its habitat; or,

ii. Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and would provide a clear conservation gain to GRSG.

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 N**).

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 GRSG 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.

Action UFM 4a: For BLM land in the state of Nevada only, in the portions of the PHMAs outside of SFAs, geothermal projects may be considered for authorization if all of the following conditions are met:

- A team comprised of BLM, FWS, 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 Action SSS 2 and **Appendix F**)

Action UFM 4b: For BLM lands in California only, manage geothermal leasing in PHMAs in accordance with Action UFM 3 (see **Appendix N**).

Action UFM 5: In GHMAs, manage oil and gas and geothermal fluid minerals with moderate constraints, timing limitations, and controlled surface use stipulations (see **Appendix N**).

Action UFM 6: In PHMAs and GHMAs, allow only geophysical exploration that does not crush sagebrush or create new or additional surface disturbance. Examples of technologies that may meet this requirement are drilling methods using helicopters, articulated rubber-tired vehicles that leave no trace, and vibroseis geophysical operations on roads and bladed shoulders.

Action UFM 7: Prohibit surface shot methods in PHMAs.

Leased Federal Fluid Mineral Estate Actions

Action FM 1: Review Objective SSS 4, and to the extent allowed by law, apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action Lease FM 2: Use directional and horizontal drilling to reduce surface disturbance.

Action Lease FM 3: On leased federal fluid mineral estate, where no APD or geothermal drilling permit (GDP) has been issued, apply RDFs consistent with applicable law and other conditions of approval (COAs) that conserve GRSG. Manage existing fluid mineral leases through COAs applied at the time APD or GDP is approved.

Action Lease FM 4: On leased federal fluid mineral estate in PHMAs, complete master development plans for oil and gas in lieu of APD-by-APD, or operations/utilization plans for geothermal processing for all but exploration wells.

Action Lease FM 5: On leased, federal, fluid mineral estate in PHMAs, require a full reclamation bond specific to the site. Ensure bonds are sufficient for reclamation costs for full restoration. Base the reclamation costs on the assumption that BLM contractors would perform the work.

Action Lease FM 6: In PHMAs and GHMAs, place infrastructure in already disturbed locations to the extent feasible.

Action Lease FM 7: Locate new compressor stations outside PHMAs and GHMAs and design them to reduce noise that may be directed toward PHMAs and GHMAs (see Actions SSS 2 and SSS 3 and **Appendix K**).

Locatable Minerals

Action LOC 1: Review Objective SSS 4, and to the extent allowed by law, apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action LOC 2: Recommend for withdrawal SFAs under the General Mining Act of 1872, as amended, subject to valid existing rights (see **Appendix H, Figure 2-5**).

Action LOC 3: On public lands, manage disturbances associated with notice-level activity in GRSG habitat on a landscape basis to avoid segmenting a project. Do this by encouraging operators and claimants to consolidate exploration into a plan of operations to reduce the proliferation of mining notices, in accordance with 43 CFR, Part 3809.21(b).

Action LOC 4: 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 GRSG habitat by applying the "avoid, minimize and compensatory mitigation" process through an applicable mitigation system, such as the Nevada Conservation Credit System. BLM and Forest Service mitigation is limited to the prevention of Unnecessary or Undue Degradation (UUD) of public lands as defined in 43 CFR 3809.5 and addressed in 43 CFR 3809.415.

Action LOC 5: Close or mitigate abandoned mine sites in PHMAs and GHMAs to reduce GRSG predation by eliminating physical structures that could provide nesting opportunities and perching sites for predators.

Salable Minerals

Action SAL 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action SAL 2: PHMAs are closed to new mineral material sales. However, these areas remain open to free use permits and the expansion of existing active pits, if requirements in Action SAL 1 can be met.

Action SAL 3: Manage GHMAs as open to existing and new mineral materials disposal sites.

Action SAL 4: Provide reasonable access and development opportunity to Federal Highway Administration, Nevada Department of Transportation (NDOT), California Department of Transportation (Caltrans), counties, tribes and the public for existing mineral material pits in PHMAs and GHMAs.

Nonenergy Leasable Minerals

Action NEL 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action NEL 2: Manage PHMAs as closed to new nonenergy leasable mineral leasing.

Action NEL 3: Expansion of existing leases would be considered in PHMA for development.

Action NEL 4: Manage GHMAs as open to new nonenergy leasable mineral leasing.

Mineral Split Estate
Action MSE 1: Review Objective SSS 4, and to the extent allowed by law, apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action MSE 2: Where the federal government owns the mineral estate in PHMAs and GHMAs, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied (consistent with applicable law) if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.

Action MSE 3: Where the federal government owns the surface and the mineral estate is in non-federal ownership in PHMAs and GHMAs, apply appropriate surface use COAs, stipulations, and mineral RDFs (consistent with applicable law) through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.

Comprehensive Travel and Transportation Management
Objective CTTM 1: Prioritize and complete transportation planning in PHMAs and GHMAs that provides for reasonable access to public lands for administration and recreation and that minimizes proliferation of user-created routes (e.g., roads, primitive roads, and trails).

Action CTTM 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat.

Action CTTM 2: In areas where travel planning has not been completed, limit OHV travel to existing routes in PHMAs and GHMAs until subsequent implementation-level travel planning is completed and a designated route system is established. In travel management plans that have been completed and are being implemented (e.g., northeastern California plans), continue to limit OHV travel to designated routes in PHMAs and GHMAs.

Action CTTM 3: Allow the goals, objectives, and actions in relevant national OHV guidance to guide subsequent implementation-level travel planning efforts, as well as by the following:

- Identify, prioritize, and update annually a timeline to complete travel planning in all relevant planning areas to accelerate data collection, route evaluation and selection, and on-the-ground implementation, including signing, monitoring, and rehabilitation.

- Consult with interested user groups, federal, state, county, and local agencies, local landowners, and other parties to provide an opportunity for the public to express itself and have its views considered. Consequently, incorporate a public outreach plan to fully engage all interested stakeholders into future travel management plans.
- Among other route evaluation criteria developed in this plan amendment, incorporate criteria from 43 CFR, Part 8342.1, and specifically section (b), "areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats."
- Evaluate all routes to determine the purpose and need and the potential resource or user conflicts from motorized travel. Where resource or user conflicts outweigh the purpose and need for the route, consider closing the route or relocating it outside of PHMAs and GHMAs. Evaluate for administrative access only routes not required for public access or recreation against current administrative/agency purpose or need.
- Consider closing routes that are duplicative, parallel, or redundant.
- Consider seasonal restrictions (see Actions SSS 2 and SSS 3) on motorized travel use PHMAs and GHMAs where motorized vehicle use is a threat. Consider limiting over snow vehicles (OSVs) designed for use on a track or tracks or a ski or skis, while in use to designated routes or consider seasonal closures in GRSG wintering areas from November 1 through February 28.
- Consider the need for restricting motorized vehicles, including their sound levels (Actions SSS 2 and SSS 3), speed and design (e.g., motorcycles, ATVs, and UTVs).
- Consider scheduling road maintenance to avoid disturbance during sensitive GRSG life-cycle periods to the extent practicable. Consider using time of day, seasonal, and noise restrictions (see Actions SSS 2 and SSS 3) to reduce impacts on GRSG seasonal habitat.
- In PHMAs and GHMAs, close to motorized travel those roads, primitive roads, and trails not designated in travel management plans.
- In PHMAs and GHMAs, prioritize restoring routes not designated in a travel management plan. Obliterate and seed roads, primitive roads, and trails not designated in travel management plans, with appropriate seed mixes and transplanted sagebrush when applicable.

Use fire-resistant species as fuel breaks where appropriate. Seed must be certified weed free.

Action CTTM 4: In PHMAs and GHMAs, where new roads are necessary for public safety, administration, or public need, consider limiting route construction to realignments of existing routes where possible.

Action CTTM 5: In PHMAs and GHMAs, work with local governments to minimize upgrading existing routes that would change route category (e.g., road, primitive road, or trail) or capacity, unless the upgrade would maintain or enhance GRSG habitat, provide a fuel break to protect native vegetation, would be necessary for public safety, or would eliminate the need to construct a new road.

Action CTTM 6: In PHMAs and GHMAs, temporary closures will be considered in accordance with 43 CFR, Subpart 8364 (Closures and Restrictions), 43 CFR, Subpart 8351 (Designated National Area), 43 CFR, Subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties), and 43 CFR, Subpart 8341 (Conditions of Use).

Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence (43 CFR 8341.2). A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.

Recreation and Visitor Services

Action REC 1: Review Objective SSS 4 and apply Actions SSS 1 through SSS 4 when analyzing projects and activities proposed in GRSG habitat.

Action REC 2: Allow special recreation permits in PHMAs and GHMAs only if their effects on GRSG and its habitat are neutral or result in a net conservation gain.

Action REC 3: In PHMA, do not construct new recreation facilities (e.g., campgrounds, trails, trailheads, staging areas) unless the development would have a net conservation gain to GRSG 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.

Action REC 4: Develop trail mapping and educational campaigns in PHMAs and GHMAs to reduce recreational impacts on GRSG and their habitat, including the effects of cross-country travel.

Tribal Interests

Action TI 1: Do not restrict tribal access to view GRSG breeding behavior for a tribe's traditional lifeways.

Action TI 2: Do not prohibit tribal access to traditional locations for cultural practices in PHMAs and GHMAs.

Action TI 3: Do not prohibit tribal collection of seeds, vegetation, or medicinal plants related to traditional cultural practices in PHMAs and GHMAs.

Required Design Features

RDFs are meant for certain activities in all GRSG habitats and are to be applied consistent with applicable law. They establish the minimum specifications for certain activities to help mitigate adverse impacts. However, the applicability and overall effectiveness of each RDF cannot be assessed at the project level until the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) or may require slight variations (e.g., a larger or smaller protective area). All variations in RDFs would require that at least one of the following be demonstrated in the NEPA analysis associated with the project or activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project or 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.
- A specific RDF will provide no additional protection to GRSG or its habitat.

The RDFs are presented in **Appendix D**.

2.6.3 Forest Service Proposed Plan Amendment

Forest Service Plan Components[4]

Desired conditions: A description of specific social, economic, and/or ecological characteristics of the plan area, or a portion of the plan area, toward which management of the land and resources should be directed. Desired conditions must be described in terms that are specific enough to allow progress toward their achievement to be determined, but do not include completion dates.

Guideline: A constraint on project and activity decision making that allows for departure from its terms, so long as the purpose of the guideline is met.. Guidelines are established to help achieve or maintain a desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

Objective: A concise, measurable, and time-specific statement of a desired rate of progress toward a desired condition or conditions. Objectives should be based on reasonably foreseeable budgets.

Standard: A mandatory constraint on project and activity decision making, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

The direction in the following standards and guidelines will be applied consistent with applicable valid existing rights, laws, and regulations.

General Greater Sage-grouse

GRSG-GEN-DC-001-Desired Condition: The landscape for GRSG encompasses large contiguous areas of native vegetation, approximately 6 to 62 square miles in area, to provide for multiple aspects of species life requirements. Within these landscapes, a variety of sagebrush-community compositions exist without invasive species, which have variations in subspecies composition, co-dominant vegetation, shrub cover, herbaceous cover, and stand structure, to meet seasonal requirements for food, cover, and nesting for GRSG.

GRSG-GEN-DC-002-Desired Condition: Anthropogenic disturbance is focused in non-habitat areas outside of PMHAs and GMHAs and SFAs[5]. Disturbance in general habitat management areas are limited, and there is little to no disturbance in priority habitat management areas and sagebrush focal areas except for valid existing rights and authorized uses.

[4] Plan component definitions are based on generally accepted meanings under the 1982 rule and the Forest Service Plan Wording Style Guide 2009, http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5260265.pdf.

[5] PHMAs and GHMAs may contain non-habitat, but management direction would not apply to those areas of non-habitat. However, management direction would apply to all areas within SFAs including non-habitat.

GRSG-GEN-DC-003-Desired Condition: In GRSG seasonal habitats, including all seasonal habitats, 70% of lands capable of producing sagebrush have 10 to 30% sagebrush canopy cover and less than 10% conifer canopy cover. In addition, within breeding and nesting habitat, sufficient herbaceous vegetation structure and height provides overhead and lateral concealment for nesting and early brood rearing life stages. Within brood rearing habitat, wet meadows and riparian areas sustain a rich diversity of perennial forb species relative to site potential. Within winter habitat, sufficient sagebrush height and density provides food and cover for GRSG during this seasonal period. Specific desired conditions for GRSGs based on seasonal habitat requirements are in **Table 2-5** and **Table 2-6**.

Table 2-5
Seasonal Habitat Desired Conditions for Greater Sage-grouse (Generally applies in ecoregion 342, although may be applied outside of ecoregion 342 based on local ecological site conditions).

Attribute	Indicators	Desired Condition
BREEDING AND NESTING [1,2,3] (Seasonal Use Period March 1 to June 30) Apply 4.0 miles from active leks. [4]		
Lek Security	Proximity of trees [5]	Trees to uncommon within 3 miles (5 km) leks [6,7]
	Proximity of sagebrush to leks [6]	Adjacent protective sagebrush cover within 328 feet of lek [6]
Cover	Seasonal habitat extent [7] (Percent of seasonal habitat meeting desired conditions.)	>80% of the breeding and nesting habitat
	Sagebrush canopy cover [6,7,8]	>15%
	Sagebrush height [7] Arid sites [,6,7,9] Mesic sites [,6,7,10]	 > 12 inches >16 inches
	Predominant sagebrush shape [6]	>50% in spreading [11]
	Perennial grass cover [,6,7] Arid sites [7,9] Mesic sites [7,10]	 ≥10% ≥15%
	Perennial grass height [,6,7,8]	Provide overhead and lateral concealment from predators [7,15]
	Perennial forb canopy cover [,6,7,8] Arid sites [9] Mesic sites [10]	 ≥5% [,6,7] ≥10% [,6,7]
BROOD-REARING/SUMMER [1] (Seasonal Use Period May 15 to September 15)		
Cover	Seasonal habitat extent [7] (Percent of seasonal habitat meeting desired conditions.)	>40% of the brood-rearing/summer habitat
	Sagebrush canopy cover [6,7,8]	10 to 25%
	Sagebrush height [7,8]	> 16 inches
	Perennial grass canopy cover and forbs [6,7]	>15%
	Riparian areas/mesic meadows	Proper Functioning Condition [12]
	Upland and riparian perennial forb availability [5,6]	Preferred forbs are common with several preferred species present [13]
Security	Riparian Area/Meadow Interspersion with adjacent sagebrush	Has adjacent sagebrush cover [5, 6]

Table 2-5
Seasonal Habitat Desired Conditions for Greater Sage-grouse (Generally applies in ecoregion 342, although may be applied outside of ecoregion 342 based on local ecological site conditions).

Attribute	Indicators	Desired Condition
WINTER/FALL[1] (Seasonal Use Period September 1 to February 28)		
Cover and Food	Seasonal habitat extent[6,7,8] (Percent of seasonal habitat meeting desired conditions.)	>80% of the winter habitat
	Sagebrush canopy cover above snow [6,7,8]	>10%
	Sagebrush height above snow [6,7,8]	>10 inches [14]

[1]Seasonal dates can be adjusted; that is, start and end dates may be shifted either earlier or later, but the amount of days cannot be shortened or lengthened by the local unit.
[2] Doherty, K. 2008. *Sage-grouse and Energy Development: Integrating Science with Conservation Planning to Reduce Impacts*. University of Montana. Missoula, MT.
[3] Holloran and Anderson. 2005. *Spatial Distribution of Greater Sage-grouse nests in relatively contiguous sagebrush habitats*. Condor 107:742-752.
[4] Buffer distance may be changed only if 3 out of 5 years of telemetry studies indicate the 4 miles is not appropriate.
[5] Baruch-Mordo, S. J.S. Evans, J.P Severson, D.E. Naugle, J. D. Maestas, J.M. Kiesecker, M.J. Falkowski. C.A. Hagen, and K.P. Reese. . 2013. *Saving sage-grouse from trees*: A proactive solution to reducing a key threat to a candidate species. Biological Conservation 167: 233-241.
[6]Stiver, S.J., E.T. Rinkes, D.E. Naugle, P.D. Makela, D.A. Nance, and J.W. Karl, eds. 2015 (in press). Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies, Denver, Colorado.
[7] Connelly, J. M. A. Schroweder, A. R. Sands, and C. E. Braun.2000. Guidelines to manage sage-grouse populations and their habitats. Wildlife Society Bulletin 28 (4): 967-985.
[8] Connelly, J. K. Reese, and M. Schroder. 2003. *Monitoring of Greater sage-grouse habitats and populations*. Station Bulletin 80, Contribution 979. University of Idaho, College of Natural Resources Experiment Station. Moscow, ID.
[9] 10–12 inch precipitation zone; *Artemisia tridentata wyomingensis* is a common big sagebrush sub-species for this type site (HAF 2014).
[10] ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush sub-species for this type site (HAF 2014).
[11] Sagebrush plants with a spreading shape provide more protective cover than sagebrush plants that are more tree- or columnar shaped (HAF 2014).
[12] Existing land management plan desired conditions for riparian areas/wet meadows (spring seeps) may be used in place of properly functioning conditions, if appropriate for meeting greater sage-grouse habitat requirements.
[13] Preferred forbs are listed in HAF Table III-2 (HAF 2014). Overall total forb cover may be greater than that of preferred forb cover since not all forb species are listed as preferred in Table III-2.
[14] The height of sagebrush remaining above the snow depends upon snow depth in a particular year. Intent is to manage for tall, healthy, sagebrush stands.
[15]Projects will be designed to provide overhead and lateral concealment of nests on a site specific basis.

Table 2-6
Seasonal Habitat Desired Conditions for Greater Sage-grouse (Generally applies in ecoregion 341, although may be applied outside of ecoregion 341 based on local ecological site conditions)

	Indicator	Desired Condition
GENERAL/LANDSCAPE-LEVEL		
Cover (Nesting)	Seasonal Habitat Needed	>65% of the landscape in sagebrush cover[1]
	Annual Grasses	< %5[3]
Security (Nesting)	Conifer encroachment	<3% phase I (>0% to <25% cover) No phase II (25 – 50% cover) No phase III (>50% cover)
Cover and Food (Winter)	Conifer encroachment	<5% phase I (>0% to <25% cover) No phase II (25 – 50% cover) No phase III (>50% cover)

Table 2-6
Seasonal Habitat Desired Conditions for Greater Sage-grouse (Generally applies in ecoregion 341, although may be applied outside of ecoregion 341 based on local ecological site conditions)

	Indicator	Desired Condition
	Sagebrush extent	>85% sagebrush land cover
BREEDING AND NESTING (Seasonal Use Period March 1-June 30; Apply 4.0 miles from pending and active leks [17])		
Security [4]	Tree cover	<3% landscape canopy cover within 1 km of leks[2]
	Proximity of tall structures (1 meter above shrub canopy, excluding fences)	None within 3 miles (5 kilometers)[16]
Cover	Availability of sagebrush cover	Has adjacent sagebrush cover[7,15]
	Sagebrush canopy cover	≥20%[11,12]
	Residual and live perennial grass cover	≥10% if shrub cover <25%[2,6,5]
	Annual grass cover [5]	<5%[13]
	Perennial grass height	Provide overhead and lateral concealment from predators[7]
	Total shrub cover	≥30%[5,11]
BROOD-REARING/SUMMER (Seasonal Use Period May 15 to September 15)		
Cover	Sagebrush canopy cover	10%-25%[7]
	Perennial grass canopy cover and forbs	>15% combined perennial grass and forb canopy cover[7]
	Perennial Grass Height	Provide overhead and lateral concealment from predators[7, 18]
Cover and Food	Perennial forb canopy cover	≥5% arid (<10 inches precipitation) ≥15% mesic (> 10 inches or meadow system)
Food	Riparian Areas/Meadows	Proper Functioning Condition[15]
	Understory species richness (in the vicinity of riparian areas/meadows)	≥ 5 preferred forb species present[3,4]
Security	Riparian Area/Meadow Interspersion with adjacent sagebrush	Has adjacent sagebrush cover[7,15]
FALL/WINTER (Seasonal Use Period September 1 to February 28)		
Cover and Food	Sagebrush canopy cover	≥10% above snow depth[7]
	Sagebrush height	>10 inches (25 centimeters) above snow depth[7]

[1]Aldridge, C. L.; Boyce, M. S. 2007. Linking occurrence and fitness to persistence: Habitat-based approach for endangered Greater Sage-Grouse. Ecological Applications, 17: 508 – 526.

[2]Baruch-Mordo, S., J. S. Evans, J. P. Severson, D. E. Naugle, J. D. Maestas, J. M. Kiesecker, M. J. Falkowski, C. a. Hagen, and K. P. Reese. 2013. Saving sage-grouse from the trees: a proactive solution to reducing a key threat to a candidate species. Biological Conservation 167:233–241.

[3]Blomberg, E.J., J.S. Sedinger, M.T. Atamian, and D.V. Nonne. 2012. Characteristics of climate and landscape disturbance influence the dynamics of greater sage-grouse populations. Ecosphere 3(6):55.

[4]Casazza, M.L., P.S. Coates, C.T. Overton. 2011. Linking habitat selection to brood success in greater sagegrouse. In: Sandercock, MK, K Martin, G Segelbacher (eds.). Ecology, Conservation, and Management of Grouse. University of California Press. Pp. 151-167.

[5]Coates, P.S., and D.J. Delehanty. 2010. Nest predation of greater sage-grouse in relation to microhabitat factors and

Table 2-6
Seasonal Habitat Desired Conditions for Greater Sage-grouse (Generally applies in ecoregion 341, although may be applied outside of ecoregion 341 based on local ecological site conditions)

	Indicator	Desired Condition

predators. Journal of Wildlife Management 74:240-248.

[6]Coates, P. S., M. L. Casazza, E. J. Blomberg, S. C. Gardner, S. P. Espinosa, J. L. Yee, L. Wiechman, and B. J. Halstead. 2013. Evaluating greater sage-grouse seasonal space use relative to leks: implications for surface use designations in sagebrush ecosystems. Journal of Wildlife Management 77: 1598–1609.

[7]Connelly, J.W., M.A. Schroeder, A.R. Sands, and C.E. Braun. 2000. Guidelines to manage sage-grouse populations and their habitats. Wildlife Society Bulletin 28:967-985.

[8]Connelly, J.W., Reese, K.P., M.A. Schroeder. 2003. Monitoring of Greater Sage-Grouse Habitats and Populations. Station Bulletin 80.

[9]Doherty, K.E., Naugle, D.E., Walker, B.L., and J.M. Graham. 2008. Greater Sage-Grouse Winter Habitat Selection and Energy Development. Journal of Wildlife Management: 72(1):187-195. 2008.

[10]Hagen, C.A., Connelly, J.W. & Schroeder, M.A. 2007: A meta-analysis of greater sage-grouse (Centrocercus urophasianus) nesting and brood-rearing habitats. - Wildlife Biology: 13 (Suppl. 1): 42-50.

[11]Kolada, E.J., J.S. Sedinger, M.L. Casazza. 2009a. Nest site selection by greater sage-grouse in Mono County, California. Journal of Wildlife Management 73:1333-1340.

[12]Kolada, E.J., J.S Sedinger, M.L. Casazza. 2009b. Ecological factors influencing nest survival of greater sage-grouse in Mono County, California. Journal of Wildlife Management 73:1341-1347.

[13]Lockyer, Z., P.S. Coates, M.L. Casazza, S. Espinosa, D.L. Delehanty. In review. Linking nest site selection to nest survival in greater sage-grouse.

[14]Nevada Governor's Sage-grouse Conservation Team. 2010. Nevada energy and infrastructure development standards to conserve greater sage-grouse populations and their habitats. Pp 9-11.

[15]Stiver, S.J., E.T Rinkes, and D.E. Naugle. 2015 (in press). Sage-grouse Habitat Assessment Framework. U.S. Bureau of Land Management. Unpublished Report. U.S. Bureau of Land Management, Idaho State Office, Boise, Idaho.

[16] Gibson, D., E. Blomberg, and J. Sedinger. 2013. Dynamics of Greater Sage-grouse (Centrocercus urophasianus) Populations in Response to Transmission Lines in Central Nevada. Progress Report: Final December 2013 of Land Management, Idaho State Office, Boise, Idaho.

[17] Buffer distance may be changed only if 3 out of 5 years of telemetry studies indicate the 4 miles is not appropriate.

[18] Projects will be designed to provide overhead and lateral concealment of nests on a site specific basis.

GRSG-GEN-ST-004-Standard: In PHMAs and SFAs, do not issue new discretionary written authorizations unless all existing discrete anthropogenic disturbances cover less than 3% of the total GRSG habitat within the Biologically Significant Unit and the proposed project area, regardless of ownership, and the new use will not cause exceedance of the 3% cap (Appendix F—Disturbance Cap Guidance). Discretionary activities that might result in disturbance above 3% at the Biologically Significant Unit and proposed project area would be prohibited unless approved by the forest supervisor with concurrence from the regional forester after review of new or site-specific information that indicates the project could occur without significant impacts to GRSG or that the project could be modified to result in a net conservation gain at the Biologically Significant Unit and proposed project area scale.

GRSG-GEN-ST-005-Standard: In PHMAs, GHMAs and SFAs, only allow new authorized land uses if the residual impacts to GRSG or their habitats are fully offset by compensatory mitigation projects that provide a net conservation gain to the species, subject to valid existing rights, which will be achieved by avoiding,

minimizing, and compensating for impacts by applying beneficial mitigation actions. Any compensatory mitigation will be durable, timely, and in addition to what would have resulted without the compensatory mitigation as addressed in the Mitigation Framework (**Appendix I**).

GRSG-GEN-GL-006-Standard: During lekking (March 1 to April 30) restrict surface disturbing and disruptive activities, including noise at 10dB above ambient (not to exceed 20-24 dB) measured at the perimeter of an occupied lek, to lekking birds from 6 pm to 9 am within a buffer distance[6] of 3.1 miles.

GRSG-GEN-GL-007-Guideline: During breeding and nesting (March 1 to June 30), surface disturbing and disruptive activities to nesting birds should be avoided.

GRSG-GEN-GL-008-Guideline: In PHMAs, GHMAs and SFAs, conduct surveys during the breeding season during pre-planning operations. Use protocols such as those established by State Fish and Wildlife agencies. The surveys should encompass all suitable GRSG habitats within 4 miles of the proposed activities.

GRSG-GEN-GL-009-Guideline: When breeding and nesting habitat overlaps with other seasonal habitats, habitat should be managed for breeding and nesting desired conditions in **Tables 2-5 and 2-6**.

GRSG-GEN-GL-010-Guideline: Development of tall structures within 3.0 miles from the perimeter of occupied leks, as determined by local conditions (e.g. vegetation or topography), with the potential to disrupt breeding or nesting by creating new perching/nesting opportunities for avian predators or by decreasing the use of an area, should be restricted within nesting habitat.

Adaptive Management

GRSG-AM-ST-011-Standard – If a hard trigger is identified, as described in Section 2.7.1, based on either population monitoring or habitat monitoring immediate action is necessary to stop a severe deviation from GRSG conservation objectives. The hard trigger responses are identified in Table 2-9 and Table 2-10 for both priority and general management areas.

GRSG-AM-ST-012-Standard – If a soft trigger is identified as described in Section 2.7.1, based on either population monitoring or habitat monitoring apply more conservative or restrictive implementation measures (e.g., extending seasonal restrictions for seasonal surface disturbing activities, modifying seasons of use for livestock grazing, and applying additional restrictions on discretionary activities) for the specific causal factor in the decline of populations and/or habitats, with considering local knowledge and conditions.

[6]Plan buffer distances reflect lower-interpreted range from Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H., 2014, Conservation buffer distance estimates for Greater Sage-Grouse—A review: U.S. Geological Survey Open-File Report 2014–1239, 14 p., http://dx.doi.org/10.3133/ofr20141239.

Lands and Realty

Special Use Authorizations (Non-Recreation)
GRSG-LR-SUA-O-013-Objective: In In brood rearing and nesting habitats, retrofit existing tall structures (e.g., power poles, cellular towers) with perch deterrents or other anti-perching devices within 2 years of signing the ROD.

GRSG-LR-SUA-ST-014-Standard: In PHMAs, GHMAs and SFAs, restrict issuance of new lands special use authorizations that authorize infrastructure, such as high-voltage transmission lines, major pipelines, hydropower, distribution lines, and cellular towers. Exceptions must be limited and based on rationale (e.g., monitoring, modeling, or best available science) that explicitly demonstrates that adverse impacts to GRSG will be avoided by the exception. Existing authorized uses will continue to be recognized.

GRSG-LR-SUA-ST-015-Standard: In GHMAs new lands special use authorizations may be issued for infrastructure, distribution lines, and cellular towers, if they can be located within existing designated corridors or rights-of-way and the authorization includes stipulations to protect GRSG and their habitats. Existing authorized uses will continue to be recognized.

GRSG-LR-SUA-ST-016-Standard: In PHMAs, GHMAs and SFAs, do not authorize temporary lands special uses (i.e., facilities or activities) that result in loss of habitat or would have long-term (i.e., greater than 5 years) negative impact on GRSGs or their habitats.

GRSG-LR-SUA-ST-017-Standard: In PHMAs, GHMAs and SFAs, require protective stipulations (e.g., noise, tall structure, guy wire removal, perch deterrent installation) when issuing new authorizations or during renewing, amending, or reissuing authorizations that authorize infrastructure (e.g., high-voltage transmission lines, major pipelines, roads, distribution lines, and cellular towers).

GRSG-LR-SUA-ST-018-Standard: In PHMAs, GHMAs and SFAs, locate upgrades to existing transmission lines within the existing designated corridors or rights-of-way unless an alternate route would benefit GRSG or their habitats.

GRSG-LR-SUA-ST-019-Standard: In PHMAs, GHMAs and SFAs, when a lands special use authorization is revoked or terminated, and no future use is contemplated, require the authorization holder to remove overhead lines and other surface infrastructure in compliance with 36 CFR 251.60(i).

GRSG-LR-SUA-ST-020-Standard: In PHMAs, GHMAs and SFAs, if the potential long-term (greater than 5 years) impacts of mitigation (e.g., relocating or burying transmission lines and pipelines to GRSG or their habitats are greater than the potential impacts from infrastructure associated with a new lands special use authorization, do not pursue the mitigation. If mitigation is not feasible or would

result in short-term (i.e. less than 5 years) or long-term impacts, incorporate additional terms and conditions in the special use authorization for protection of GRSG or their habitats.

GRSG-LR-SUA-ST-021-Standard: In PHMAs, GHMAs and SFAs, co-locate new infrastructure (e.g., high-voltage transmission lines, major pipelines, roads, distribution lines, and cellular towers) in existing infrastructure to limit disturbance to the smallest footprint, or where it best limits impacts to GRSG or their habitats. When co-location of new infrastructure cannot be accomplished, locate it adjacent to existing infrastructure, roads, or already disturbed areas. New communication tower sites may be authorized for public safety.

GRSG-LR-SUA-GL-022-Guideline: In PHMAs and SFAs, outside of existing designated corridors and rights-of-way, new transmission lines and pipelines should be buried to limit disturbance to the smallest footprint unless explicit rationale is provided that the biological impacts to GRSG and its habitat are being avoided. If new transmission lines and pipelines are not buried, locate them adjacent to existing transmission lines and pipelines.

Land Ownership Adjustments

GRSG-LR-LOA-ST-023-Standard: In PHMAs, GHMAs and SFAs do not approve landownership adjustments unless the action results in a net conservation gain to GRSG or it will not directly or indirectly adversely impact GRSG conservation.

GRSG-LR-LOA-GL-024-Guideline: In PHMAs, GHMAs and SFAs with minority Federal ownership, consider landownership adjustments to achieve a landownership pattern (e.g., consolidation, reducing fragmentation) that supports improved GRSG population trends and habitats.

Land Withdrawal

GRSG-LR-LW-GL-025-Guideline: In PHMAs, GHMAs and SFAs, use land withdrawals as a tool, where appropriate, to prevent activities that will be detrimental to GRSG or their habitats.

Wind and Solar

GRSG-WS-ST-026-Standard: In PHMAs and SFAs, so not authorize new solar utility-scale and/or commercial energy development, except for on-site power generation associated with existing industrial infrastructure (e.g., mine sites).

GRSG-WS-ST-027-Standard: In PHMAs and SFAs do not authorize new wind energy utility-scale or commercial development.

GRSG-WS-GL-028- Guideline: In GHMAs, new wind energy utility-scale and/or commercial development should be restricted. If development cannot be restricted due to existing authorized uses, adjacent developments, or split estate

issues, then ensure that stipulations are incorporated into the authorization to protect GRSGs and their habitats.

Greater Sage-grouse Habitat

GRSG-GRSG-DC-029-Desired Condition: Sagebrush vegetation communities provide contiguous habitat for GRSG, which is resistant and resilient to disturbances, such as fire and invasive species. Appendix G - Using resistance and resilience concepts (Chambers et al, 2014) to reduce impacts of invasive annual grasses and altered fire regimes on the sagebrush ecosystem and GRSGs: A strategic multi-scale approach identifies the concepts of resistance and resilient.

GRSG-GRSGH-O-030-Objective: Every 10 years for the next 50 years, improve GRSG habitat by removing invading conifers and other undesirable species in the number of acres shown in **Table 2-7**.

Table 2-7
Treatment Acres per Decade[1]

Forest	Acres		
	Mechanical[2]	Prescribed Fire[3]	Grass Restoration[4]
Humboldt-Toiyabe total	202,000	0	43,000
Population area 15	200,000	0	26,000
Population area 26	2,000	0	17,000

[1]These are estimates of treatments required to achieve and/or maintain desired habitat conditions over a period of ten years. There are many dynamic and highly variable disturbances that may happen over that period of time that could have a significant effect on the amount, type, and timing of treatment needed. Those disturbances are factored into the ten-year simulation using stochastic, not deterministic, techniques. Probabilities of events such as large wildfires are used in the model to make the simulation as realistic as possible, given empirical data about such events in the past, but the results of the simulation cannot be used to predict the future occurrence of such events, including their timing, size, or location, which are essentially random.
[2]Removal of conifers that have invaded sagebrush, including phase 1 juniper that is 10 percent or less and reducing sagebrush cover in areas over 30 percent canopy cover
[3]Acres are those that are greater than 30 percent sagebrush canopy cover and/or invaded by 10 percent or greater conifer
[4]Acres presently dominated by annual grasses that could be improved by herbicide application and seeding of perennial vegetation

GRSG-GRSGH-ST-031-Standard: Design habitat restoration projects to move toward desired conditions (**Table 2-5** and **Table 2-6**) and incorporate the concepts outlined in **Appendix M**.

GRSG-GRSGH-GL-032-Guideline: sagebrush removal in GRSG breeding, nesting and wintering habitats should be restricted, unless necessary to support attainment of desired habitat conditions.

GRSG-GRSGH-GL-033-Guideline: When removing conifers that are encroaching into GRSG habitat, avoid persistent woodland (i.e. old growth relative to the site or more than 100 years old).

GRSG-GRSGH-GL-034-Guideline: In PHMAs and GHMAs and SFAs, actions and authorizations should include design features to limit the spread and effect of undesirable non-native plant species.

GRSG-GRSGH-GL-035-Guideline: To facilitate safe and effective fire management actions in PHMAs, GHMAs, and SFAs, fuel treatments in high-risk areas (i.e., areas likely to experience wildfire at an intensity level that might result in movement away from the GRSG desired conditions in **Table 2-5** and **Table 2-6**) should be designed to reduce the spread and/or intensity of wildfire or the susceptibility of GRSG values to move away from desired conditions (**Table 2-5** and **Table 2-6**).

GRSG-GRSGH-GL-036-Guideline: In PHMAs, GHMAs, and SFAs, native plant species should be used, when possible, to restore, enhance, or maintain desired habitat conditions (**Table 2-5** and **2-6**).

GRSG-GRSGH-GL-037-Guideline: In PHMAs and SFAs, vegetation treatment projects should only be conducted if they restore, enhance, or maintain desired habitat conditions (**Table 2-5** and **Table 2-6**).

GRSG-GRSGH-GL-038-Guideline: Vegetation treatment activities in lentic riparian areas (i.e., seeps, springs, and wet meadows) in PHMAs, GHMAs, and SFAs, should only be authorized if they maintain or improve conditions to meet GRSG desired conditions (**Table 2-5** and **Table 2-6**).

GRSG-GRSGH-GL-039-Guideline: When authorizing vegetation management treatments in PHMAs, GHMAs, and SFAs, priority should be given to treatments in phase I and early phase II pinyon and/or juniper stands in areas with a sagebrush component. Pinyon-juniper treatments in phase I and phase II condition should be designed to maintain or enhance sagebrush in the treatment areas. Treatments in late phase II or phase III condition should only be authorized to create movement corridors, to connect habitats, or to reduce the potential for catastrophic fire.

GRSG-GRSGH-GL-040-Guideline: In PHMAs, GHMAs, and SFAs, treatment methodologies should be based on the treatment area's resistance to annual invasive grasses and the resilience of native vegetation to respond after disturbance. Use mechanical treatments (i.e., do not use fire) in areas with relatively low resistance to annuals and treat areas in early- to mid-phase pinyon-juniper expansion.

Livestock Grazing

GRSG-LG-DC-041-Desired Condition: In PHMAs, GHMAs, and SFAs, livestock grazing is managed to ensure for adequate nesting, breeding, and winter cover and does not conflict with other vegetation attributes (**Table 2-5** and **Table 2-6**).

GRSG-LG-ST-042-Standard: In PHMAs, GHMAs, and SFAs, do not approve construction of water developments unless beneficial to GRSG habitat, and consistent with state-approved water rights.

GRSG-LG-ST-043-Standard: When vertical embankments in water troughs or open water facilities pose a drowning risk to birds, wildlife escape ramps should be installed and maintained.

GRSG-LG-GL-044-Guideline: Grazing guidelines should be applied in each of the seasonal habitats in **Table 2-8.** If values in **Table 2-8** guidelines cannot be achieved based upon a site-specific analysis using Ecological Site Descriptions, long-term ecological site capability analysis, or other similar analysis, adjust grazing management to move towards desired habitat conditions in **Table 2-5** and **Table 2-6** consistent with the ecological site capability. Do not use drought and degraded habitat condition to adjust values. Grazing guidelines in **Table 2-8** would not apply to isolated parcels of National Forest System lands that have less than 200 acres of GRSG habitat.

Table 2-8
Forest Service Grazing Guidelines for GRSG Seasonal Habitat

Seasonal Habitat	Grazing Guidelines
Breeding and nesting[1] within 4 miles of active or pending leks	Perennial grass height:[2] When grazing occurs during breeding and nesting season (March 1 to June 30), manage for upland perennial grass height of 7 inches[3, 4, 5] When grazing occurs post breeding and nesting season (July 1 to September 1), manage for 4 inches of perennial grass height.[4, 5, 6]
Brood rearing and summer[1]	Retain an average stubble height of 4 inches for herbaceous riparian/mesic meadow vegetation.[5, 7, 8]
Winter/fall[1]	≤35% utilization of sagebrush

[1]For descriptions of seasonal habitat and seasonal periods of GRSGs see **Tables 2-5** and **2-6**.
[2]Grass heights apply only in breeding and nesting habitat with ≥10 percent sagebrush cover to support nesting.
[3] Holloran, M. J., B. J. Heath, A. G. Lyon, S. J. Slater, J. L. Kuipers, and S. H. Anderson. 2005. "Greater sage-grouse nesting habitat selection and success in Wyoming." *Journal Wildlife Management* 69:638-649.
[4]Average droop height, assuming current vegetation composition has the capability to achieve these heights. Heights will be measured at the end of the nesting period (Connelly et al. 2000).
[5]Hagen C., J. W. Connelly, and M. A. Schroeder. 2007. A meta-analysis of greater sage-grouse Centrocercus urophasianus nesting and brood-rearing habitats.
[6]Stubble height to be measured at the end of the growing season.
[7] In riparian brood-rearing habitat, sage-grouse prefer the lower vegetation (5–15 cm vs. 30–50 cm; Oakleaf 1971, Neel 1980, Klebenow 1982, Evans 1986) and succulent forb growth stimulated by moderate livestock grazing (Neel 1980, Evans 1986); moderate use equates to a 10-cm residual stubble height for most grasses and sedges and 5-cm for Kentucky bluegrass (Mosley et al. 1997, Clary and Leininger 2000) (Crawford et al. 2004. Ecology and Management of sage-grouse grouse habitat).[8]Stubble height to be measured in the meadow areas used by GRSGs for brood-rearing (not on the hydric greenline).

GRSG-LG-GL-045-Guideline: In PHMAs, GHMAs, and SFAs, consider closure of grazing allotments, pastures, or portions of pastures or managing the allotment as a forage reserve as opportunities arise under applicable regulations, where

removal of livestock grazing would enhance the ability to achieve desired habitat conditions (**Table 2-5** and **Table 2-6**).

GRSG-LG-GL-046-Guideline: Bedding sheep and placing camps within 2.0 miles from the perimeter of a lek during lekking (March 1 to May 15) should be restricted.

GRSG-LG-GL-047-Guideline: During the breeding and nesting season (March 1 to June 30), trailing livestock through breeding and nesting habitat should be minimized. Specific routes should be identified, existing trails should be used, and stopovers on active leks should be restricted.

GRSG-LG-GL-048-Guideline: Fences should not be constructed or reconstructed within 1.2 miles from the perimeter of occupied leks, unless the collision risk can be mitigated through design features or markings (e.g., mark, laydown fences, or other design features).

GRSG-LG-GL-049-Guideline: New permanent livestock facilities (e.g., windmills, water tanks, corrals) should not be constructed within 1.2 miles from the perimeter of occupied leks.

Fire Management

GRSG-FM-DC-050-Desired Condition - In PHMAs, GHMAs, and SFAs, the extent and spread of wildfire resulting in loss of sagebrush is minimized, considering firefighter and public safety and other high priority values.

GRSG-FM-ST-051-Standard: In PHMAs, GHMAs, and SFAs, do not use prescribed fire, except for pile burning, in 12-inch or less precipitation zones, unless necessary to facilitate site preparation for restoration of GRSG habitat consistent with desired conditions in **Table 2-5** and **Table 2-6**.

GRSG-FM-ST-052-Standard: In PHMAs, GHMAs, and SFAs, if it is necessary to use prescribed fire to facilitate site preparation for restoration of GRSG habitat consistent with desired conditions in **Table 2-5** and **Table 2-6**, the associated NEPA analysis must identify how the project would move towards GRSG desired conditions, why alternative techniques were not selected, and how potential threats to GRSG habitat would be minimized.

GRSG-FM-GL-053-Guideline: In wintering or breeding and nesting habitat, sagebrush removal or manipulation, including prescribed fire, should be restricted unless the removal strategically reduces the potential impacts from wildfire.

GRSG-FM-GL-054-Guideline: In PHMAs, GHMAs, and SFAs, when reseeding in fuel breaks, fire resistant native plant species should be used if available, or consider using fire resistance non-native species to meet resource objectives, if

analysis demonstrates that non-native plants will not damage GRSG habitat in the long-term.

GRSG-FM-GL-055-Guideline: In PHMAs, GHMAs, and SFAs, fuel treatments should be designed to restore, enhance, or maintain GRSG habitat.

GRSG-FM-GL-056-Guideline: Locating temporary wildfire suppression facilities (e.g., incident command posts, spike camps, helibases, and mobile retardant plants) in PHMAs, GHMAs and SFAs should be avoided.

GRSG-FM-GL-057-Guideline: In PHMAs, GHMAs, and SFAs, cross-country vehicle travel during fire operations should be restricted whenever safe and practical to do so, as determined by fireline leadership, and incident commanders.

GRSG-FM-GL-058-Guideline: In PHMAs, GHMAs, and SFAs, use fire management tactics and strategies that seek to minimize loss of existing sagebrush habitat. The safest and most practical means to do so will be determined by fireline leadership and incident commanders.

GRSG-FM-GL-059-Guideline: In PHMAs, GHMAs, and SFAs, prescribed fire prescriptions should minimize undesirable effects on vegetation and/or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of hydrophobicity).

GRSG-FM-GL-060-Guideline: In PHMAs, GHMAs, and SFAs, incorporate roads and natural fuel breaks into fuel break design to improve effectiveness and minimize loss of sagebrush habitat.

GRSG-FM-GL-061-Guideline: In PHMAs, GHMAs, and SFAs, all fire-associated vehicles and equipment should be inspected and cleaned using standardized protocols and procedures and approved vehicle/equipment decontamination systems before entering and exiting the area to minimize the introduction of invasive annual grasses and other invasive plant species and noxious weeds.

GRSG-FM-GL-062-Guideline: Unit-specific GRSG fire management toolboxes containing maps, lists, contact information for qualified resource advisors, local guidance, and relevant information should be developed and used.

GRSG-FM-GL-063-Guideline: Localized maps of PHMAs, GHMAs, and SFAs should be provided to dispatch officers and extended attack incident commanders to use when prioritizing wildfire suppression resources and designing suppression tactics.

GRSG-FM-GL-064-Guideline: In or near PHMAs, GHMAs, and SFAs, assign a GRSG resource advisor to all extended attack fires.

GRSG-FM-GL-065-Guideline: On critical fire weather days, protection of GRSG habitat should receive high consideration, along with other high values, when positioning resources.

GRSG-FM-GL-066-Guideline: Line officers should be involved in setting pre-season wildfire response priorities and, during periods of multiple fires, prioritizing protection of PHMAs, GHMAs, and SFAs.

GRSG-FM-GL-067-Guideline: In PHMAs, GHMAs, and SFAs, consider using fire retardant and mechanized equipment only if it is likely to result in minimizing burned acreage.

GRSG-FM-GL-068-Guideline: In PHMAs, GHMAs, and SFAs, to minimize sagebrush loss, mop-up should be conducted where the burned areas adjoin unburned islands, doglegs, or other habitat features, as safety and available resources allows.

Wild Horse and Burro

GRSG-HB-DC-069-Desired Condition: In PHMAs, GHMAs, and SFAs, wild horse and burro populations are within established appropriate management levels.

GRSG-HB-ST-070-Standard: In PHMAs and GHMAs, AMLs should be adjusted if GRSG management standards are not met due to degradation that can be at least partially be attributed to WHB populations.

GRSG-HB-ST-071-Standard: In PHMAs and GHMAs, remove WHB outside of a WHB territory.

GRSG-HB-GL-072-Guideline: In PHMAs and GHMAs, herd gathering should be prioritized when WHB populations exceed the upper limit of the established AML.

GRSG-HB-GL-073-Guideline: In PHMAs and GHMAs, WHB population levels should be managed at the lower limit of established AML ranges.

GRSG-HB-GL-074–Guideline: In PHMAs and GHMAs, consider removals or exclusion of wild horses or burros immediately following an emergency situation (e.g., fire, floods, and drought).

Recreation

GRSG-R-DC-075-Desired Condition: In PHMAs, GHMAs, and SFAs, recreation activities are balanced with the ability of the land to support them, while meeting GRSG seasonal habitat desired conditions (**Table 2-5** and **2-6**) and creating minimal user conflicts.

GRSG-R-ST-076-Standard: In PHMAs, GHMAs, and SFAs, do not authorize temporary recreation uses (i.e., facilities or activities) that result in loss of habitat or have long-term (greater than 5 years) negative impacts on GRSGs or their habitats.

GRSG-R-GL-077-Guideline: In PHMAs, GHMAs, and SFAs, terms and conditions that protect and/or restore GRSG habitat within the permit area should be included in new recreation special use authorizations. During renewal, amendment, or reauthorization, terms and conditions in existing permits and operating plans should be modified to protect and/or restore GRSG habitat.

GRSG-R-GL-078-Guideline: In PHMAs, GHMAs, and SFAs, new recreational facilities or expansion of existing recreational facilities (e.g., roads, trails, campgrounds), including special use authorizations for facilities and activities, should not be approved unless the development results in a net conservation gain to GRSG and/or their habitats or the development is required for visitor safety.

GRSG-R-GL-079-Guideline: During breeding and nesting (March 1 to June 30), outfitter-guide activities within 0.25 mile of the perimeter of active leks should not be authorized.

Roads/Transportation

GRSG-RT-DC-080-Desired Condition: In PHMAs, GHMAs, and SFAs, within the travel management system, GRSGs experience minimal disturbance during breeding and nesting (March 1 to June 30) and wintering (November 1 to February 28) periods.

GRSG-RT-ST-081-Standard: In PHMAs, GHMAs, and SFAs, do not conduct or allow new road or trail construction (does not apply to realignments for resource protection) except when necessary for administrative access, public safety, or to access valid existing rights. If necessary to construct new roads and trails for one of these purposes, construct them to the minimum standard, length, and number and avoid, minimize, and mitigate impacts.

GRSG-RT-ST-082-Standard: Do not construct or allow road and trail maintenance within 2 miles of the perimeter of active leks during lekking (March 1 to May 15) from 6 p.m. to 9 a.m.

GRSG-RT-ST-083-Standard: In PHMAs and SFAs, prohibit public access on temporary energy development roads, unless consistent with all other terms and conditions included in the forest plan.

GRSG-RT-GL-084-Guideline: In PHMAs and SFAs, new roads and road realignments should be designed and administered to reduce collisions with GRSGs.

GRSG-RT-GL-085-Guideline: In PHMAs and SFAs, road construction within riparian areas and mesic meadows should be restricted. If not possible to restrict construction within riparian areas and mesic meadows, roads should be designed and constructed at right angles to ephemeral drainages and stream crossings, unless topography prevents doing so.

GRSG-RT-GL-086-Guideline: In PHMAs, GHMAs, and SFAs, when decommissioning roads and unauthorized routes, restoration activity should be designed to move habitat towards desired conditions (**Tables 2-5** and **Table 2-6**).

GRSG-RT-GL-087-Guideline: In PHMAs, GHMAs, and SFAs, dust abatement terms and conditions should be included in road use permits when dust has the potential to impact GRSGs.

GRSG-RT-GL-088-Guideline: In PHMAs, GHMAs, and SFAs, road and road-way maintenance activities should be designed and implemented to reduce the risk of vehicle or human-caused wildfires and the spread of invasive plants. Such activities include but are not limited to the removal or mowing of vegetation a car-width off the edge of roads; use of weed-free earth-moving equipment, gravel, fill, or other materials; and blading or pulling roadsides and ditches that are infested with noxious weeds only if required for public safety or protection of the roadway.

GRSG-RT-GL-089-Guideline: In PHMAs, GHMAs, and SFAs, during breeding and nesting (March 1 to June 30), consider seasonal road closures on motorized travel routes with high traffic volume, speeds, or noise levels.

GRSG-RT-GL-090-Guideline: In PHMAs, GHMAs, and SFAs, from November 1 to February 28, consider limiting over-snow motorized vehicles in wintering areas.

Minerals

Fluid Minerals—Unleased

GRSG-M-FMUL-ST-091-Standard: In PHMAs and SFAs, any new oil and gas leases must include an NSO stipulation. There will be no waivers or modifications. An exception could be granted by the authorized officer with unanimous concurrence from a team of agency GRSG experts from the USFWS, Forest Service, and state wildlife agency under the following circumstances:

- There would be no direct, indirect, or cumulative effects on GRSGs or their habitats,
- Granting the exception would provide an alternative to a similar action occurring on a nearby parcel, and
- The exception provides a clear net conservation gain to GRSGs.

GRSG-M-FMUL-ST-092-Standard: In GHMAs, any new leases must include appropriate controlled surface use and timing limitation stipulations to protect GRSG and their habitat.

GRSG-M-FMUL-ST-093-Standard: In SFAs, there will be no surface occupancy and no waivers, exceptions, or modifications for fluid mineral leasing.

GRSG-M-FMUL-ST-094-Standard: In PHMAs outside SFAs, consider proposed geothermal projects may be considered if:

- A team of agency GRSG experts from the USFWS, Forest Service, BLM, and state wildlife agency advises on project-mitigation measures, including lek buffer distances, using the best available science
- Mitigation actions are consistent with the mitigation strategy
- The footprint of the project is consistent with the disturbance protocols identified in GRSG-GEN-ST-001

GRSG-M-FMUL-ST-095-Standard: In PHMAs, GHMAs, and SFAs, only allow geophysical exploration and similar type of exploratory operations that are consistent with vegetation objectives in **Table 2-5** or **Table 2-6**, as appropriate and include applicable seasonal restrictions.

Fluid Minerals—Leased

GRSG-M-FML-ST-096-Standard: In PHMAs and SFAs, when approving the surface use plan of operation portion of the Application for Permit to Drill on existing leases that are not yet developed, require that leaseholders avoid and minimize surface-disturbing and disruptive activities consistent with the rights granted in the lease.

GRSG-M-FML-ST-097-Standard: In PHMAs, GHMAs, and SFAs, when facilities are no longer needed or leases are relinquished, require reclamation plans to include terms and conditions to restore habitat to desired conditions, as described in **Table 2-5** and **Table 2-6**.

GRSG-M-FML-ST-098-Standard: In PHMAs, GHMAs, and SFAs, authorize new transmission line corridors, transmission line ROWs, transmission line construction, or transmission line facility construction associated with fluid mineral leases, with stipulations necessary to protect GRSGs and their habitats, consistent with the terms and conditions of the permit.

GRSG-M-FML-ST-099-Standard: Locate compressor stations on portions of a lease that are nonhabitat and are not used by GRSGs, and if there would be no direct, indirect, or cumulative effects on GRSGs or their habitat. If this is not possible, work with the operator to use mufflers, sound insulation, or other features to reduce noise, consistent with the GRSG-GEN-ST-006-Standard.

GRSG-M-FML-ST-100-Standard: In PHMAs, GHMAs, and SFAs, when authorizing development of fluid mineral resources, work with the operator to minimize impacts to GRSG and their habitat, such as locating facilities in non-habitat areas first and then in the least suitable habitat.

GRSG-M-FML-GL-101-Guideline: In PHMAs, GHMAs, and SFAs, operators should be encouraged to reduce disturbance to GRSG habitat. At the time of approval of the Surface Use Plan of Operation portion of the Application for Permit to Drill, terms and conditions should be included to reduce disturbance to GRSG habitat, where appropriate and feasible and consistent with the rights granted to the lessee.

GRSG-M-FML-GL-102-Guideline: On existing federal leases in PHMAs, GHMAs, and SFAs, when surface occupancy cannot be restricted due to valid existing rights or development requirements, disturbance and surface occupancy should be limited to areas least harmful to GRSGs, based on vegetation, topography, or other habitat features.

GRSG-M-FML-GL-103-Guideline: In PHMAs, GHMAs, and SFAs, where the federal government owns the surface and the mineral estate is in non-federal ownership coordinate with the mineral estate owner/lessee to apply appropriate stipulations, conditions of approval, conservation measures and required design features to the appropriate surface management instruments to the maximum extent permissible under existing authorities.

Fluid Minerals—Operations

GRSG-M-FMO-ST-104-Standard: In PHMAs, GHMAs, and SFAs, do not authorize employee camps.

GRSG-M-FMO-ST-105-Standard: In PHMAs, GHMAs, and SFAs, when feasible, do not locate tanks or other structures that may be used as raptor perches. If this is not feasible, use perch deterrents.

GRSG-M-FMO-GL-106-Guideline: In PHMAs, GHMAs, and SFAs, closed-loop systems should be used for drilling operations, with no reserve pits, where feasible.

GRSG-M-FMO-GL-107-Guideline: In PHMAs, GHMAs, and SFAs, during drilling operations, soil compaction should be minimized and soil structure should be maintained using the best available techniques to improve vegetation reestablishment.

GRSG-M-FMO-GL-108-Guideline: In PHMAs, GHMAs, and SFAs, dams, impoundments, and ponds for mineral development should be constructed to reduce the potential for West Nile virus. Examples of methods to accomplish this are as follows:

- Increase the depth of ponds to accommodate a greater volume of water than is discharged
- Build steep shorelines (greater than 2 feet) to reduce shallow water and aquatic vegetation around the perimeter of impoundments to reduce breeding habitat for mosquitoes
- Maintain the water level below that of rooted aquatic and upland vegetation and restrict flooding terrestrial vegetation in flat terrain or low-lying areas
- Construct dams or impoundments that restrict downslope seepage or overflow by digging ponds in flat areas rather than damming natural draws for effluent water storage or lining constructed ponds in areas where seepage is anticipated
- Line the channel where discharge water flows into the pond with crushed rock or use a horizontal pipe to discharge inflow directly into open water
- Line the overflow spillway with crushed rock and construct the spillway with steep sides
- Fence pond sites to restrict access by livestock and other wild ungulates
- Remove or reinject produced water
- Treat surface waters with larvicides to reduce mosquito production

GRSG-M-FMO-GL-109-Guideline: In PHMAs, GHMAs, and SFAs, to keep habitat disturbance at a minimum, a phased development approach should be applied to fluid mineral operations, wherever possible, consistent with the rights granted under the lease. Disturbed areas should be reclaimed as soon as they are no longer needed for mineral operations.

Locatable Minerals

GRSG-M-LM-ST-110-Standard: In PHMAs, GHMAs, and SFAs, approve plans of operation if they include mitigation to protect GRSGs and their habitats, consistent with the rights of the mining claimant as granted by the General Mining Act of 1872, as amended.

GRSG-M-LM-GL-111-Guideline: In PHMAs, GHMAs, and SFAs, to keep habitat disturbance at a minimum, phased development approach should be applied to operations, consistent with the rights granted under the General Mining Act of 1872, as amended. Require that disturbed areas be reclaimed as soon as they are no longer needed for mineral operations.

GRSG-M-LM-GL-112-Guideline: In PHMAs, GHMAs, and SFAs, abandoned mine sites should be closed or mitigated to reduce predation of GRSGs by eliminating

tall structures that could provide nesting opportunities and perching sites for predators.

Nonenergy Leasable Minerals

GRSG-M-NEL-GL-113-Guideline: In PHMAs, GHMAs, and SFAs, at the time of issuance of prospecting permits, exploration licenses and leases, or readjustment of leases, the Forest Service should provide recommendations to the BLM for the protection of GRSG and their habitats.

GRSG-M-NEL-GL-114-Guideline: In PHMAs, GHMAs, and SFAs, the Forest Service should provide recommendations to the BLM that expanding or readjusting leases avoid, minimize, or mitigate the effects on GRSGs and their habitat.

Mineral Materials

GRSG-M-MM-ST-115-Standard: In PHMAs and SFAs, do not authorize new mineral material disposal or development.

GRSG-M-MM-ST-116-Standard: In PHMAs and SFAs, free-use mineral material collection permits may be issued and expansion of existing active pits may be allowed, except from March 1 to April 30 between 6 pm and 9 am within 2 miles from the perimeter of occupied leks, within the BSU and proposed project area if doing so does not exceed the disturbance cap.

GRSG-M-MM-ST-117-Standard: In PHMAs, GHMAs, and SFAs, any permit for existing mineral material operations must include appropriate requirements for operation and reclamation of the site to restore, enhance, or maintain desired habitat conditions (**Table 2-5** and **Table 2-6**).

Predation

GRSG-P-DC-118-Desired Condition: Manage Anthropogenic uses on public lands are managed to reduce the effects of predation on GRSGs.

2.7 ADAPTIVE MANAGEMENT, MONITORING, AND MITIGATION

The following management direction applies to the BLM and Forest Service Proposed Plans.

2.7.1 Adaptive Management Plan

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 Forest Service adaptive

management direction is FSH 1909.12 Ch. 20, FSM 1920, and 36 CFR, Part 219.6. The adaptive management strategy presented in this Proposed LUPA/Final EIS complies with this policy and direction.

In relation to the BLM's and Forest Service's National Greater Sage-Grouse Planning Strategy, adaptive management would help identify if GRSG conservation measures presented in this Proposed LUPA/ Final EIS contain the needed level of certainty for effectiveness. Principles of adaptive management are incorporated into the conservation measures in the plan to lessen threats to GRSGs and their 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 and Forest Service's adaptive management strategy for the Nevada and Northeastern California Greater Sage-Grouse Sub-region Proposed LUPA/Final EIS.

This Proposed LUPA/Final EIS contains a monitoring framework plan (**Appendix E**) that includes an effectiveness monitoring component. The agencies intend to use the data collected from the effectiveness monitoring to identify any changes in habitat conditions related to the goals and objectives of the plan and other range-wide conservation strategies (DOI 2004; Stiver et al. 2006; USFWS 2013). The BLM and Forest Service will use the information collected through the monitoring framework plan outlined in **Appendix E** to determine when adaptive management hard and soft triggers are met (see below).

The BLM and Forest Service cooperated with the Nevada SETT, NDOW, CDFW, and USFWS, along with GRSG research scientists from the USGS and the University of Nevada Reno in developing the adaptive management triggers, definitions, and methods of calculating population and habitat trends.

Adaptive Management Application Scale and Reporting Units

The scale used to monitor for application of the adaptive management triggers are the Biological Significant Units (BSUs; **Map 2-1**) developed in collaboration with the Nevada SETT, NDOW, CDFW, and USGS. These areas represent local GRSG population use areas in the sub-region. The monitoring data on population and habitat can be aggregated up to the population, WAFWA management zone, or other reporting units, such as priority areas for conservation (PACs). Likewise, finer-scale management adjustments can be applied at the lek cluster-scale using population responses and triggers. The boundaries of the BSUs, lek clusters, and other reporting units may be adjusted over time, based on the understanding of local population interactions, genetic sampling and climate variation. Population monitoring methods may be updated based on new science and advances in technology (e.g., integrated population models).

Map 2-1 Biological Significant Units for GRSG in the Nevada and Northeastern California Sub-region

Source: NDOW 2015

Applying adaptive management responses once a soft or hard trigger is reached will be at the BSU or a finer scale, as detailed below. The hierarchy of GRSG population and habitat scales is as follows:

- Lek—Individual breeding display sites where male and female GRSGs congregate, with males performing courtship displays to gain mating opportunities with females.
- Lek cluster—A group of leks in the same vicinity, between which GRSG may interchange over time and representing a group of closely related individuals. Agencies may revise the lek clusters listed above, based on new data.
- Population management units (PMUs)—Areas delineated based on aggregations of GRSG lek locations, where the potential for genetic interchange (short-term) among populations is high.
- BSU—Based on the PMUs (defined above) where GRSG interactions have been documented between two or more PMUs and represent local GRSG population habitats and seasonal use areas in the sub-region.
- WAFWA Management Zones (MZ)—Determined by GRSG populations and sub-populations identified in seven floristic provinces (Connelly et al. 2004). Floristic provinces reflect ecological and biological issues and similarities, not political boundaries. The vegetation communities and management challenges found in the floristic provinces in an MZ are similar, and GRSGs and their habitats are likely to respond similarly to environmental factors and management actions.

Adaptive Management Triggers—Project Scale

Soft Triggers

Soft triggers represent an intermediate threshold indicating that management changes are needed at the project/implementation level to address GRSG habitat and population losses. If a soft trigger is reached, the BLM or Forest Service would apply additional mitigation measures to alleviate the specific or presumptive causes in the decline of GRSG populations or its habitats with consideration of local knowledge and conditions.

The application of population triggers can be illustrated in the following scenario:

A soft trigger would be reached if, when an authorized project is implemented, the results of population monitoring reveal there is a decrease in male

attendance at a lek in the project area, as compared to adjacent or trend leks.[7] This would initiate a project design response and require the modification of or additional mitigation to the project.[8] For example, if the data were to suggest the decline may be attributed to GRSG collisions with monitoring tower guy wires associated with the project, the BLM would modify the current authorization to apply an identified adaptive management response, which would be to flag the guy wires.

When the BLM receives a new application for a proposed monitoring tower in the same GRSG population area, it would require the new authorization's monitoring tower guy wires to be flagged. These types of adjustments would be made to preclude reaching a hard trigger (which signals more severe GRSG habitat loss or population declines). While there should be no expectation of hitting a hard trigger, if unforeseen circumstances occur that trip either a habitat or population hard trigger, more restrictive management would be required.

Hard Triggers

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation goals and objectives, as set forth in the BLM and Forest Service plans.

If soft triggers are hit for both GRSG populations and its habitat, this would result in a hard trigger response for the BSU.

Population Trends for Triggers

Counts of male GRSGs attending breeding leks provide reliable data for analyzing population growth trends (Fedy and Aldridge 2011). Lek counts can inform statistical estimation of population growth rates (see below) at each scale. "Trend leks" have been identified by NDOW, USGS and CDFW within each BSU. Trend leks are monitored consistently each year and have more available data than adjacent leks within the BSU. These trend leks will be used to estimate the population trends/averages within each BSU. Triggers for changes in population growth will be evaluated at three scales: individual lek (smallest scale), lek cluster, and BSU (largest scale).

Lek cluster delineations may be determined by movement data from radio-marked GRSG when available and by ongoing and future genetic analyses when results are provided. Lek clusters may be separated from each other by physical barriers to dispersal (e.g., mountain ranges and expansive salt flats). Hence, lek clusters take into account spatial connectivity and are associated with high probabilities of GRSG movement among individual leks. However, emerging

[7]Thresholds regarding soft and hard triggers for GRSG populations are identified below under Population Hard and Soft triggers.

[8]The specific response would be identified as a project adaptive management response. If the project authorization does not include an adaptive management strategy, adjustments of the proposal could be limited. All projects implemented consistent with the GRSG LUPA/FEIS would contain a project-specific adaptive management strategy (response).

science associated with genetic analysis may allow for a more comprehensive demonstration of population connectivity or fragmentation. Analyses are being conducted and may be incorporated when available. Estimates for lek clusters may then be scaled up to inform regional population trends at the BSU scale.

Analyses of population changes at the three scales allow for detailed examination of how and where changes are occurring (for example, individual leks describe site-level changes, lek clusters describe local population changes, and BSUs describe changes relative to variation in climate within the sub-region.

These scales are compared at immediate hierarchical levels (i.e., lek to lek cluster, lek cluster to BSU, BSU to MZ) to decouple the trend and subsequent soft and hard triggers at the appropriate hierarchy at which adaptive management actions will be applied. This approach maximizes the level of inference that can be drawn at each scale because it allows information from leks with larger amounts of available data (trend leks) to inform estimates from lek clusters where data are sparse, which in turn provides greater precision to sub-regional (BSU) estimates.

Comparison across regions can also be conducted while accounting for different climatic effects at the lek cluster scale. Trends at the BSU are measured against trends at the MZ for distinguishing local effects from other extrinsic influences (e.g., climate change).

Population Growth Rate Calculations for Triggers

GRSG state-space models (Coates et al. 2014) will be used to estimate the rate of GRSG population growth (increase or decrease in population numbers) and the number of males at individual lek, lek cluster, BSU, and MZ scales. Lek count data collected by NDOW and CDFW from 2000 to present will be used in the model. Some lek clusters may need additional monitoring to gain adequate sampling data in order to be modeled, although the state-space model method will incorporate uncertainty levels from limited samples into each analysis and in threshold determinations (Coates et al. 2014).

Population Hard and Soft Triggers

Modeled growth rates from GRSG population estimates will be calculated at the relevant management level annually as lek data are finalized by the state wildlife management agencies. The GRSG state-space model will be used to establish population growth rates using lek data in BSUs for the sub-region. When lek cluster data is adequate, the same method may be applied at the individual lek (i.e., when individual lek triggers are reached) or the local population (i.e., when lek cluster triggers are reached) to provide adaptive management strategies at the most appropriate scales.

Specific triggers at each GRSG population scale (Coates et al. in prep) are as follows:

1. Individual lek;
    a. Two criteria are needed to reach a soft trigger.
        i. The population rate of change of a lek is less than 0.85-0.95 for two consecutive years; and
        ii. The population rate of change of the lek in relation to the lek cluster reference is less than 0.85-0.95 for both years.
    b. Two criteria are needed to reach a hard trigger:
        i. The population rate of change of a lek is less than 0.01-0.15 for one year; and
        ii. The population rate of change of the lek in relation to the lek cluster is less than 0.01-0.15 for one year.
    c. Three consecutive soft triggers will result in a hard trigger.
    d. The causal factor(s) evaluation area is the GRSG seasonal habitats and use areas associated with the lek (Space Use Index [SUI]; Coates 2014). If the seasonal habitats have not been defined, then the SUI would be applied.
    e. The trigger response area is the GRSG seasonal habitats and use areas associated with the lek that is specifically affected by the causal factor(s). If the seasonal habitats have not been defined, then the SUI would be applied.
2. Lek cluster (project level)
    a. Two criteria are needed to reach a soft trigger:
        i. The population rate of change of the lek cluster is less than 0.90 for two consecutive years; and
        ii. The population rate of change of the lek cluster in relation to the BSU is less than 0.90 for both years.
    b. Two criteria are needed to reach a hard trigger:
        i. The population rate of change of the lek cluster is less than 0.10 for one year; and
        ii. The population rate of change of the lek cluster in relation to the BSU is less than 0.10 for one year.
    c. Three consecutive soft triggers would result in a hard trigger.
3. BSU (sub-regional scale)
    a. Two criteria are needed to reach a soft trigger.

i. The population rate of change within the BSU is less than 0.90 for two years; and

ii. The population change of the BSU in relation to the MZ is less than 0.90 for both years.

b. Two criteria are needed for a hard trigger.

i. The population rate of change is less than 0.10 for one year; and

ii. The population rate of change in relation to the MZ is less than 0.10 for one year.

c. Three consecutive soft triggers would result in a hard trigger.

The rate of GRSG population decline and the time frame over which populations are evaluated would be monitored and adjusted as understanding of GRSG population thresholds emerge. The BLM, Forest Service, NDOW, USGS, and CDFW would pursue a program to collect and incorporate additional demographic data into the GRSG space-use model.

Habitat Trends for Triggers

Triggers for habitat trend would be evaluated at the lek and BSU scales. Lek scale trends incorporate the project boundary and adjoining GRSG seasonal habitats. The adjoining GRSG seasonal habitat is defined as the GRSG habitat and use areas within four miles of the disturbance perimeter, unless otherwise specified in an accepted protocol. Site-level habitat trends would be based on changes in habitat components using the methods in the HAF. These changes would be compared to the GRSG habitat objectives in **Table 2-2**.

The BSUs would be based on the percentage of sagebrush cover across the landscape. The categories of the percent landscape sagebrush cover that would apply are the 25 to 65 percent level and the above 65 percent level, as identified in the Matrix Based on Concepts of Resistance and Resiliency (Chambers et al. 2014).

Hard and Soft Habitat Triggers

Habitat trends would be evaluated by changes in GRSG habitat characteristics identified in the GRSG habitat objectives (**Table 2-2**) and the percent of landscape sagebrush cover.

1. At the lek or lek cluster, if the habitat disturbance were to exceeds five percent of any individual GRSG seasonal habitat component used by the local population, then a soft trigger would be hit; if the disturbance exceeds 10 percent, than a hard trigger would be hit.
2. At the BSU, the two components would have separate triggers.
   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

would be hit. A hard trigger would be hit if there were a decline of 5 percent or greater of sagebrush cover or if the disturbance were to reduce the landscape sagebrush cover below 30 percent.

b. In areas with greater than 65 percent landscape sagebrush cover, a soft trigger would be hit if there were a decline of 5 percent in landscape sagebrush cover. A hard trigger would be hit if there were a decline of 10 percent or greater in landscape sagebrush cover or if the disturbance were to reduce the landscape sagebrush cover below 70 percent.

Soft and Hard Trigger Responses

Soft Trigger Responses

When a soft trigger is reached, the causal factor would be identified and management actions would be adjusted to lessen the cause by applying project-level adaptive management contained in the authorization and for future similar authorizations. The adjustment in management would be based on the causal factor and would affect only the area being impacted in the lek cluster or appropriate scale. GRSG 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 and state wildlife agency representative, would identify the appropriate mitigation or adjusted management actions in a timely manner.

Hard Trigger Responses

When a hard trigger is reached due to a disturbance (anthropogenic, fire, drought, etc.), more restrictive allocations and/or management actions would be implemented within the BSU.

Specific hard trigger responses due to anthropogenic disturbances are identified in **Table 2-9** and **Table 2-10**.

Table 2-9
Hard Trigger Responses in PHMAs Under the Proposed Plan

Program	Proposed Plan Allocation	Adaptive Management Response
Land use authorizations—existing corridors	Open	Manage as a ROW avoidance area.
Land use authorizations—major outside corridors	Avoidance areas for all major ROWs	Management of the affected BSU would change to exclude high voltage transmission lines (≥100 kV) and major pipelines (≥24 inches).

Table 2-9
Hard Trigger Responses in PHMAs Under the Proposed Plan

Program	Proposed Plan Allocation	Adaptive Management Response
Land use authorizations—minor ROWs outside corridors	Avoidance areas for all minor ROWs	Limit ROW authorizations, leases, and permits to those needed for public safety and valid existing rights.
Wind energy development	ROW exclusion for utility-scale commercial wind energy facilities.	No change
Industrial solar	ROW exclusion for utility-scale solar energy facilities.	No change
Fluid minerals (Oil, gas, and geothermal in California) (Oil and gas in Nevada)	• In SFAs, manage as NSO with no waiver, exception, or modification. • In PHMAs outside of SFAs, manage as NSO, with two limited exceptions.	• No change • Manage as NSO, with no waivers, exceptions, or modifications.
Fluid minerals (Geothermal in Nevada)	• In SFAs, manage as NSO with no waiver, exception, or modification. • In PHMAs outside SFAs, manage as NSO with three specific limited exceptions.	• No change • Manage as NSO, with no waivers, exceptions, or modifications.
Locatable minerals	In SFAs, recommended for withdrawal; manage locatable mineral development to minimize effects on GRSG habitat.	No change
Salable minerals	Closed to new mineral disposal.	No change
Nonenergy leasable minerals	Closed to new nonenergy leasable mineral leasing.	No change
Vegetation management	Identify and prioritize landscape-scale enhancement, restoration, fuels reduction, and mitigation projects based on ecological site potential, state and transition models, and other data that would contribute to decision-making informed by science to increase rangeland resilience before and following wildfire.	BSUs where a hard trigger has been reached would be the first priority for regional mitigation habitat restoration and fuels reduction treatments.

Table 2-10
Hard Trigger Responses in GHMAs Under the Proposed Plan

Program	Proposed Plan Allocation	Adaptive Management Response
Land use authorizations—existing corridors	Open to new uses.	Manage as ROW avoidance area.
Land use authorizations—major ROWs outside corridors	Avoidance areas for wind, high-voltage transmission lines, and major pipeline ROWs.	Manage affected BSU as exclusion for high-voltage transmission lines (≥100 KV), major pipelines (>24 inches), and wind energy.
Land use authorizations—minor ROWs outside corridors	Open for minor ROWs.	Manage as avoidance area for ROWs, leases, and permits.
Wind energy development	ROW avoidance for utility-scale commercial wind energy facilities.	Manage as exclusion for utility-scale commercial wind energy facilities.
Industrial solar	ROW exclusion for utility-scale solar energy facilities.	No change
Fluid minerals	Apply moderate stipulations (CSU and TL).	Apply an NSO stipulation, with limited exceptions.
Locatable minerals	Manage locatable mineral development to minimize effects on GRSG habitat.	No change
Salable minerals	Open to new mineral disposal.	Manage as closed to new mineral disposal.
Nonenergy leasable minerals	Open to new nonenergy leasable mineral leasing.	Manage as closed to new nonenergy leasable mineral leasing.
Vegetation management	Identify and prioritize landscape-scale enhancement, restoration, fuels reduction, and mitigation projects, based on ecological site potential, state and transition models, and other data that would contribute to decision-making informed by science to increase rangeland resilience before and following wildfire.	BSUs where a hard trigger has been reached would be the first priority for regional mitigation habitat restoration and fuels reduction treatments.

BLM Adaptive Management Actions

Action AM-1: As site-specific GRSG 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 GRSG habitat categories. Through plan maintenance or plan amendment, 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 GRSG 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 Sub-regions' GRSG habitat management categories. The addition of site-specific GRSG data will allow for the refinement of the spatial representation of the GRSG habitat management categories.

Action AM 2: A BSU that has hit a soft trigger due to vegetation disturbance would be a priority for restoration treatments consistent with FIAT (**Appendix G**).

Action AM 3: Once a hard trigger has been reached, all responses in **Table 2-9** and **Table 2-10** would be implemented. This includes where soft triggers have been reached for both population and habitat.

Action AM 4: When a hard trigger is hit in a PAC that has multiple BSUs, including those that cross state lines, the WAFWA GRSG 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.

Action AM 5: Project authorizations (with the possible exception of short duration activities outside of seasonal GRSG habitats) would require that active and pending leks be monitored annually within 4 miles of disturbance until the use terminates and all disturbances have been restored. The proponent would fund the services of an independent qualified biologist approved by the BLM, in coordination with NDOW or CDFW.

Action AM 6: In making amendments to this plan, the BLM will coordinate with the FWS as BLM continues to meet its objective of conserving, enhancing and restoring GRSG habitat by reducing, minimizing or eliminating threats to GRSG and its habitat.

Forest Service Adaptive Management Standards

GRSG-AM-ST-001-Standard – If a hard trigger is reached, as described above, based on either population monitoring or habitat monitoring immediate action is necessary to stop a severe deviation from GRSGconservation objectives. The hard trigger responses are identified in **Table 2-9 and Table 2-10** for both priority and general management areas.

GRSG-AM-ST-002-Standard – If a soft trigger is reached as described in above, based on either population monitoring or habitat monitoring apply more conservative or restrictive implementation measures (e.g., extending seasonal restrictions for seasonal surface disturbing activities, modifying seasons of use for livestock grazing, and applying additional restrictions on discretionary activities) for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions

2.7.2 Monitoring for the Greater Sage-Grouse Planning Strategy

The BLM's planning regulations, specifically 43 CFR, Part 1610.4-9, require that LUPs establish intervals and standards for monitoring based on the sensitivity of the resource decisions. LUP monitoring is the process of tracking the implementation of LUP decisions (implementation monitoring) and collecting the data/information necessary to evaluate the effectiveness of the LUP decisions (effectiveness monitoring).

For GRSG, these types of monitoring are also described in the criteria found in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (USFWS and NOAA 2003). One of the criteria under this policy is to evaluate whether the provisions are provided for monitoring and reporting progress on implementation (based on compliance with the implementation schedule) and effectiveness (based on evaluation of quantifiable parameters) of the conservation effort.

A guiding principle in the BLM National Sage-Grouse Conservation Strategy (DOI 2004) is that "the [BLM] is committed to GRSG and sagebrush conservation and would continue to adjust and adapt our National Sage-Grouse Strategy as new information, science, and monitoring results evaluate effectiveness over time."

In keeping with the WAFWA Sage-Grouse Comprehensive Conservation Strategy (Stiver et al. 2006) and the GRSG Conservation Objectives: Final Report (USFWS 2013a), the BLM and Forest Service would monitor implementation and effectiveness of conservation measures in GRSG habitats.

On March 5, 2010, the USFWS's 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered was posted as a *Federal Register* notice (USFWS 2010a). This notice stated "…the information collected by BLM could not be used to make broad generalizations about the status of rangelands and management actions. There was a lack of consistency across the range in how questions were interpreted and answered for the data call, which limited our ability to use the results to understand habitat conditions for GRSG on BLM lands."

Standardization of monitoring methods and implementation of a defensible monitoring approach (in and across jurisdictions) would resolve this situation.

The BLM, Forest Service, tribes, and other conservation partners use the resulting information to guide implementation of conservation activities.

Monitoring strategies for GRSG habitat and populations must be collaborative, as habitat occurs across jurisdictional boundaries (52 percent on BLM-administered lands, 31 percent on private lands, 8 percent on National Forest System lands, 5 percent on state lands, and 4 percent on tribal and other federal lands; USFWS 2010a). State fish and wildlife agencies have primary responsibility

for population-level wildlife management, including population monitoring. Therefore, population monitoring would continue to be conducted in partnership with state fish and wildlife agencies.

The BLM and Forest Service framework (**Appendix E**) describes the process that the BLM and Forest Service would use to monitor implementation and effectiveness of LUPA decisions; it applies to all alternatives. The monitoring framework includes methods, data standards, and intervals of monitoring at broad- and mid-scales; consistent indicators to measure descriptions for each of the scales (**Appendix E**); analysis and reporting methods; and the incorporation of monitoring results into adaptive management. Indicators at the fine- and site-scales would be consistent with the Habitat Assessment Framework; however, the values for the indicators could be adjusted for regional conditions.

More specifically, the framework discusses how the BLM and Forest Service would monitor and track implementation and effectiveness of planning decisions (e.g., tracking waivers, modifications, and site-level actions). The two agencies would monitor the effectiveness of LUPA decisions in meeting management and conservation objectives.

Effectiveness monitoring includes monitoring disturbance in habitats, as well as landscape habitat attributes. To monitor habitats, the BLM and Forest Service would measure and track attributes of priority habitat, and general habitat and other habitat at the broad scale, and attributes of habitat availability, patch size, linkage/connectivity habitat, edge effect, and human disturbances at the mid-scale. Disturbance monitoring would measure and track changes in the amount of sagebrush in the landscape and changes in the human footprint, including changes in density of energy development. The framework also includes: (1) methods for analyzing and reporting for field offices, states, ranger districts, BLM districts, National Forests, and forest regions; (2) geospatial and tabular data for disturbance mapping (e.g., geospatial footprint of new permitted disturbances) and management action effectiveness.

The monitoring data provides the indicator estimates for adaptive management. The BLM and Forest Service would adjust management decisions through an adaptive management process, and in accordance with applicable law.

2.7.3 Regional Mitigation

Consistent with the proposed plan's goal outlined in Goal SSS 1, the intent of the Nevada and Northeastern California Greater Sage-Grouse Sub-region Proposed LUPA/Final EIS is to provide a net conservation gain to the species. This will happen in all GRSG habitat, 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 BLM will achieve this by avoiding, minimizing, and compensating for impacts and by applying beneficial mitigation actions. This is also consistent with BLM Manual 6840—Special Status Species Management, Section .02B, which states "to initiate proactive conservation measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood of the need for listing of these species under the ESA."

Mitigation Standards

In all GRSG habitat, in undertaking BLM/USFS 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. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Actions which result in habitat loss and degradation include those identified as threats which contribute to GRSG disturbance as identified by the U.S. Fish and Wildlife Service in its 2010 listing decision (75 FR 13910), COT report (USFWS 2013a) and shown in Table 2 in the attached Monitoring Framework (**Appendix E**). Mitigation will follow the regulations from the CEQ (40 CFR, Part 1508.20; e.g. avoid, minimize, and compensate), hereafter referred to as the mitigation hierarchy. If impacts from BLM and Forest Service management actions and authorized third-party actions that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects would be used to provide a net conservation gain to the species. Any compensatory mitigation would be durable, timely, and in addition to what would have resulted without the compensatory mitigation (see the concepts of durability, timeliness, and additionality as described further in **Appendix I**).

Greater Sage-Grouse Conservation Team

The BLM/USFS will establish a WAFWA Management Zone Greater Sage-Grouse Conservation Team (hereafter, Team) to help guide the conservation of GRSG, within 90 days of the issuance of the Record of Decision. This team will develop a WAFWA Management Zone Regional Mitigation Strategy (hereafter, Regional Mitigation Strategy). The team will also compile and report on monitoring data (including data on habitat condition, population trends, and mitigation effectiveness) from states across the WAFWA Management Zone (see monitoring section). Subsequently, the team will use these data to either modify the appropriate Regional Mitigation Strategy or recommend adaptive management actions (see adaptive management section).

The BLM/USFS will invite governmental and tribal partners to participate on this team, including the state wildlife agencies and USFWS, in compliance with the exemptions provided for committees defined in the Federal Advisory Committee Act and the regulations that implement that act. The BLM and Forest Service will strive for a collaborative and unified approach between

federal agencies (e.g., the USFWS, BLM, and Forest Service), tribal governments, state and local governments, and other stakeholders for GRSG conservation. The team will provide advice and will not make any decisions that impact federal lands. The BLM and Forest Service will remain responsible for making decisions that affect federal lands.

Developing a Regional Mitigation Strategy

The team will develop the Regional Mitigation Strategy to inform the mitigation components of NEPA analyses for BLM and Forest Service management actions and third-party actions that result in habitat loss and degradation. The strategy will be developed within a year of the issuance of the ROD. The BLM's Regional Mitigation Manual MS-1794 will serve as a framework for developing the strategy, which will be applicable to the states/field offices/districts/forests in the WAFWA MZ's boundaries.

Regional mitigation is a landscape-scale approach to mitigating impacts on resources. This involves anticipating future mitigation needs and strategically identifying mitigation sites and measures that can provide a net conservation gain to the species. The strategy developed by the Team would elaborate on the components identified above (i.e., avoidance, minimization, and compensation; additionality, timeliness, and durability) and further explained in **Appendix I**.

In the time period before the strategy is developed, BLM will consider regional conditions, trends, and sites to the greatest extent possible when applying the mitigation hierarchy and will ensure that mitigation is consistent with the standards set forth in the first paragraph of this section.

Incorporating the Regional Mitigation Strategy into NEPA Analyses

The BLM and Forest Service would include the avoidance, minimization, and compensatory recommendations from the strategy in one or more of the NEPA analysis' alternatives for BLM and Forest Service management actions and third party actions that result in habitat loss and degradation and the appropriate mitigation actions are carried forward into the decision.

Implementing a Compensatory Mitigation Program

Consistent with the principles identified above, the BLM and Forest Service need to ensure that compensatory mitigation is strategically implemented to provide a net conservation gain to the species, as identified in the Regional Mitigation Strategy. In order to align with existing compensatory mitigation efforts, this compensatory mitigation program would be implemented at a state-level (**Appendix L**), as opposed to a WAFWA Management Zone, a field office, a district or a forest, in collaboration with our partners (e.g. federal, tribal, and state agencies).

To ensure transparent and effective management of the compensatory mitigation funds, the BLM and Forest Service would enter into a contract or agreement with a third-party to help manage the state-level compensatory

mitigation funds, within one year of the issuance of the Record of Decision. The selection of the third-party compensatory mitigation administrator would conform to all relevant laws, regulations, and policies. The BLM and Forest Service would remain responsible for making decisions that affect federal lands.

Mitigation Objectives and Actions

Action MI 1: In Nevada, coordinate with the SETT on the application of a compensatory mitigation program, such as the Nevada Conservation Credit System (**Appendix L**) for mitigating activities that result in habitat loss and degradation of GRSG habitat in Nevada, where the application of compensatory mitigation would occur on or the credit would be applied to disturbance on BLM-administered lands.

Action MI 2: Identify compensatory mitigation areas in PHMAs and GHMAs with the potential to achieve GRSG habitat objectives (**Table 2-2**), in accordance with FIAT, the SFAs prioritization, and the State of Nevada Strategic Action Plan.

2.8 DRAFT LUPA/EIS ALTERNATIVES

The following are alternatives to the Proposed Plan and were presented and analyzed in the Draft LUPA/EIS. Some alternatives have been refined based on public comment.

2.8.1 Alternative A (No Action)

Alternative A meets the CEQ requirement that a No Action Alternative be considered. This alternative continues current management direction and prevailing conditions derived from the existing field/district office and forest planning documents. Goals and objectives for resources and resource uses are based on the most recent LUP decisions, along with associated amendments, activity- and implementation-level plans, and other management decision documents. Laws, regulations, and BLM and Forest Service policies that supersede LUP decisions would apply. The No Action Alternative highlights those decisions that can be shown to have a direct effect or link to conserving or restoring GRSG habitat or sagebrush vegetation communities that support GRSG throughout its life cycle. Because there are few management decisions that are common to all 13 LUPs, a summary of the general management per threat is discussed.

Goals and objectives for BLM-administered and National Forest System lands and mineral estate would not change. Appropriate and allowable uses and restrictions pertaining to such activities as mineral leasing and development, recreation, utility corridor construction, and livestock grazing would also remain the same. The BLM and Forest Service would not modify existing or establish additional criteria to guide the identification of site-specific use levels for implementation activities.

2.8.2 Management Common to All Alternatives

Allowable uses and management actions from existing LUPs that remain valid are not subject to modification based on management actions identified in the selected alternative. The effects of the allowable uses and management action are included in the cumulative effects analysis. Other decisions are common only to the action alternatives (Alternatives B, C, D, E, F, and the Proposed Plan). Common management actions are as follows:

- In cooperation with other conservation partners and tribes, conserve, enhance, and restore the sagebrush ecosystem on which GRSG populations depend to maintain or increase their abundance and distribution.
- Manage GRSG as a BLM and Forest Service sensitive species.
- Comply with state and federal laws, regulations, policies, and standards, including the multiple use mandates of FLPMA and NFMA.
- Implement actions originating from laws, regulations, and policies and conform to day-to-day management, monitoring, and administrative functions not specifically addressed.
- Recognize valid existing rights, including any leases, claims, or other use authorizations established, before approving a new or modified authorization, change in land designation, or new or modified regulation; existing fluid mineral leases are managed through COAs applied at the time the BLM and Forest Service approve an application for permit to drill (APD).
- Collaborate with adjacent landowners, federal, state, and local agencies, tribes, communities, other agencies, and other individuals and organizations to implement decisions and monitoring to achieve GRSG habitat objectives.
- Apply RDFs (see **Appendix D** and other site-specific mitigation measures) to all resource uses in GRSG habitat and consistent with applicable law to promote rapid reclamation, maximize resource protection, and minimize soil erosion.
- Incorporate the Regional Mitigation Strategy, as outlined in **Appendix I**.
- Implement management action in wilderness, Wilderness Study Areas, National Historic Trails and Wild and Scenic Rivers, or other special designated areas to be consistent with policies and procedures that have been established to maintain the current physical setting and characteristics of these units.
- Where more restrictive land use allocations or decisions are made in existing LUPs, those more restrictive land use allocations or

decisions will remain in effect and will not be amended by this LUPA.

BLM and Forest Service Vegetation Management

The BLM and Forest Service's overarching goal for vegetation management is to plan and implement a set of actions that improve biological diversity and ecosystem function and promote and maintain native plant communities that are resilient to disturbance and resistant to invasive species through an interdisciplinary collaborative process (BLM 2007a).

The BLM and Forest Service vegetation management strategies take into account the condition and use of public lands. These strategies focus on restoring sites that would most benefit from treatments. The appropriate treatments to improve the likelihood of restoration success would be selected, treatments would be monitored to better understand what treatments are successful or unsuccessful, and information about treatment activities would be conveyed to the BLM, Forest Service, public, and tribes.

BLM vegetation treatment policies are an outcome of the Vegetation Treatments Programmatic EIS released in October 2007 (BLM 2007a). The programmatic EIS contains broad regional descriptions of resources, environmental impact analysis, and BLM-wide decisions on herbicide use and other available tools for vegetation management. It also provides a programmatic USFWS Endangered Species Act Section 7 consultation. All implementation-level activities carried out under this plan will tier to the Vegetation Treatments Programmatic EIS to the extent that it applies.

For weed management in the Nevada and Northeastern California Sub-region, the BLM and Forest Service work closely with local and state agencies to manage and treat weeds on public lands. The BLM and Forest Service participate in exotic plant pest councils, state vegetation and noxious weed management committees, state invasive species councils, county weed districts, and weed management associations.

When developing mitigation and prevention plans for activities on public lands, the BLM and Forest Service address conditions that enhance invasive species abundance. These conditions include excessive disturbance associated with road maintenance and livestock or wild horse and burro grazing that fails to meet standards and high levels of recreational use. Also, restoration activities are evaluated as to their ability to maintain invasive annual grass cover below manageable thresholds. The BLM and Forest Service apply treatments to remove invasive annual grasses and maintain sagebrush/perennial grass communities.

The BLM also participates in the National Early Warning and Rapid Response System for Invasive Species. The goal of this system is to minimize the establishment and spread of new invasive species through a coordinated

framework of public and private processes (Federal Interagency Committee 2003).

The BLM and Forest Service coordinate with and solicit input from resource advisory groups and nongovernmental organizations, including BLM Resource Advisory Councils (RACs), the Western Governors' Association, the National Association of Counties, the Western Area Power Administration, the National Cattlemen's Association, the National Wool Growers Association, the Society of American Foresters, and the American Forest and Paper Association.

For fire management and fuels reduction, the BLM and Forest Service participate with the Wildland Fire Leadership Council, a cooperative interagency organization dedicated to achieving consistent implementation of the goals, actions, and policies in the National Fire Plan and the Federal Wildland Fire Management Policy.

As directed by the Healthy Forests Restoration Act, the BLM and Forest Service developed an annual program of work that prioritizes authorized fuel reduction projects designed to protect at-risk communities or watersheds. In accordance with the Healthy Forests Restoration Act, funding priority is given to communities that have adopted Community Wildfire Protection Plans or that have taken measures to encourage willing property owners to reduce fire risk on private property. All prescribed burning is coordinated with state and local air quality agencies to ensure that local air quality is not significantly impacted by BLM and Forest Service activities.

Effectiveness monitoring of vegetation and Healthy Forests Restoration Act treatments is done at the project implementation level. Monitoring invasive plant treatment effectiveness can include site visits, comparing the targeted population size against pre-treatment inventory data, comparing pre-treatment and post-treatment photo points, and conducting more elaborate transect work, depending on the species and site-specific variables.

2.8.3 Alternative B

GRSG conservation measures in A Report on National Greater Sage-Grouse Conservation Measures (NTT 2011) were used to form BLM and Forest Service management direction under Alternative B. Management actions by the BLM and Forest Service in concert with other federal, state, and local agencies, tribes, and private landowners play a critical role in the future trends of GRSG populations. To ensure BLM and Forest Service management actions are effective and based on the best available science, the BLM's National Policy Team created the National Technical Team in August 2011. The BLM's objective for chartering this planning strategy was to develop new or revised regulatory mechanisms, through LUPs, to conserve and restore GRSG and its habitat on BLM-administered and National Forest System lands on a range-wide basis over the long term. Conservation measures in the report are applied to GRSG PHMAs and to a lesser extent to GHMAs. The alternative includes all mapped

PPH and PGH (Section 1.1.2) in PHMAs and GHMAs, with no adjustments. PHMAs have the highest conservation value to maintaining or increasing GRSG populations. The complete NTT report can be reviewed online at:

http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/wildlife.Par.73607.File.dat/GrSGTechTeamReport.pdf

The BMPs proposed in the NTT report are included as RDFs (consistent with applicable law), as part of Alternative B and are listed in **Appendix D** of this document.

Management actions from the NTT report concerning coal are not applicable to the Nevada and Northeastern California Sub-region since there are no reasonably developable coal resources in the planning area. Accordingly, the part of the NTT report that addresses coal leasing was not carried forward as part of Alternative B.

2.8.4 Alternative C

During scoping, individuals and conservation groups submitted management direction recommendations for protecting and conserving GRSG and its habitat. The recommendations, in conjunction with resource allocation opportunities and internal sub-regional BLM and Forest Service input, were reviewed to develop BLM and Forest Service management direction for GRSG under Alternative C. Management actions under Alternative C are applied to PHMAs and focus on the complete removal of livestock grazing from the landscape to alleviate threats to GRSG. PHMAs include both PPH and PGH.

2.8.5 Alternative D

Alternative D was the BLM and Forest Service, Nevada and Northeastern California Sub-region's Preferred Alternative, in the Draft LUPA/EIS. It emphasizes balancing resources and resource use among competing human interests, land uses, and the conservation of natural and cultural resource values, while sustaining and enhancing ecological integrity across the landscape, including plant, wildlife, and fish habitat. Alternative C, which designates and applies management to PHMAs and GHMAs, seeks to provide a balanced level of protection, restoration, enhancement, and use of resources and services to meet ongoing programs and land uses.

Alternative C adjusts the delineation of PHMAs and GHMAs to reflect existing land uses, use authorizations, land allocations, and habitat considerations. Areas of PPH next to large-scale mining or EIS-level mine expansions or in developed utility/transportation corridors would be managed as GHMA. PGH in designated wilderness or in Wilderness Study Areas would be managed as PHMA. Mapped PPH in the isolated and highly fragmented Northwest Interior population would be managed as GHMA.

PGH in an area of high potential for ensuring genetic connectivity across the Interstate Highway 80/checkerboard landownership corridor would be managed as PHMA. The alternative provides for up to 10 percent adjustment in PHMAs and GHMAs to adapt to changing conditions, such as climate change, wildfire, and population dynamics (e.g., genetic and seasonal range connectivity), which may change due to habitat conditions or new information.

Alternative D proposes specific GRSG habitat objectives, as identified in **Table 2-11**.

Table 2-11
Proposed Habitat Objectives for Greater Sage-Grouse

Life Requisite	Habitat Indicator	Objective
General		
All life stages	Rangeland Health Standards	Meeting all standards[1]
Lek		
Cover	Availability of sagebrush cover	Has adjacent sagebrush cover
Security	Proximity of tall trees	Within 1.86 miles: - none within line of sight of the lek - <3.5% conifer cover land cover
	Proximity of tall structures	None within 3 miles
Nesting		
Cover	Sagebrush canopy cover	≥20%
	Sagebrush species present	Includes *Artemesia tridentata* subspecies
	Perennial grass cover	≥10% if shrub cover <25%[2]
	Annual grass	<5%
	Total shrub cover	≥40%
	Conifer encroachment	<5%
Brood-Rearing/Summer		
Cover	Sagebrush canopy cover	≥10%
Cover and Food	Perennial forb canopy cover	≥5% arid ≥15% mesic
Food	Riparian areas/meadows	Manage for PFC
	Perennial forb availability (riparian areas/meadows)	≥5% plant species present[3]
Security	Conifer encroachment	<3 phase I (0-25% cover) No phase II (25-50% cover) No phase III (>50% cover) within .5-mile buffer of microhabitat plot
	Riparian area/meadow interspersed with adjacent sagebrush	Perimeter to area ratio of 0.15 within 522-foot buffer of the microhabitat plot

Table 2-11
Proposed Habitat Objectives for Greater Sage-Grouse

Life Requisite	Habitat Indicator	Objective
Winter		
Cover and food	Sagebrush canopy cover	≥10%
	Sagebrush height	≥10 inches
	Conifer encroachment	<5 phase I (0-25% cover) no phase II (25-50% cover) no phase III (>50% cover) within .5-mile buffer of microhabitat plot
	Sagebrush extent	>85% sagebrush land cover within .5-mile buffer centered on microhabitat plot
	Sagebrush species composition	>50% *A. t. tridentate* sites >25% *A. arbuscula* sites >25 *A. t. vaseyana* sites

[1]Upland standards are based on indicators for canopy and ground cover, including litter, live vegetation, and rock, appropriate to the ecological potential of the site.
[2]Assumes upland rangeland health standards are being met.
[3]Standard considered in addition to PFC. Measured ESD/Daubenmire (25-centimeter by 50-centimeter frame). Includes all mesic plant species, not only perennial forbs.

Sources: Blomberg et al. 2012; Casazza 2011; Coates et al. 2011; Coates and Delehanty 2010; Coates and Casazza (in prep. A); Coates and Casazza (in prep. B); Connelly et al. 2000; Kolada 2009a, 2009b; Lockyer et al. (in review); Nevada Governor's Sage-Grouse Conservation Team 2010

This alternative also seeks to provide for no net unmitigated loss in and outside PHMAs and GHMAs in areas where GRSG use has been observed or suspected, areas and habitats that may be necessary to maintain the viability of GRSG populations, or where the activity would affect GRSG or its habitat in PHMAs or GHMAs, as described below.

Continued losses of GRSG habitat through natural events such as wildfire are expected to continue. Therefore, it is incumbent on the BLM and Forest Service to minimize loss of habitat or habitat functionality arising from discretionary agency actions or authorizations.

The concept of "no net unmitigated loss" includes a suite of actions that can be taken to offset or restore direct and indirect disturbances on GRSG habitat. This includes restoration or other appropriate actions (e.g., fence marking to reduce collision risk and avian predator diverters) in advance of or concurrent with human activities that disrupt GRSG behavior, remove habitat, or degrade habitat quality or functionality.

These actions are as follows:

- Siting activities in landscapes that do not provide habitat currently and are not likely to be restorable

- Rejecting use applications or nominations that cannot be adequately mitigated and where the agencies have discretion to do so
- Applying RDFs consistent with applicable law and mitigation measures at a level that will offset immediate and long-term effects of the disturbance

Mitigation of human uses would be accomplished by specific measures (e.g., actions and RDFs consistent with applicable law,) and the Nevada Conservation Credit System, as follows:

- On-site measures to minimize disturbance footprints and actions to restore the disturbed areas concurrently (such as revegetation and weed treatments while burying power lines or pipelines)
- Off-site mitigation agreements developed cooperatively with state wildlife agencies, conservation agencies, and the SETT for BLM-administered and National Forest System lands in Nevada
- Prescribed mitigation process to offset the immediate and long-term effects of the disturbance
- Restoration conducted in advance of disturbance
- Coordination with the states on required GRSG habitat restoration

Mitigation of natural disturbances is as follows:

- Taking actions to prevent or reduce human-caused wildfire ignitions
- Conducting treatments (e.g., creating fuel breaks) to prevent and reduce the spread of wildfires and to augment fire suppression tactics
- Conducting restoration treatments in areas burned by wildfire (including post-fire uses, such as grazing management)
- Conducting treatments to control the spread and dominance of cheatgrass
- Applying habitat restoration or enhancement treatments, such as seeding/planting of perennial grasses, forbs, and shrubs, to improve habitat conditions

Finally, Alternative D also proposes guidelines for establishing allowable use levels, as identified in **Table 2-12**.

Table 2-12
Guidelines for Establishing Allowable Use Levels if Not Meeting (or Not Making Progress Toward) GRSG Objectives under Alternative D[1]*

Community Type-Key Species	Percent Utilization of Key Species	Notes	Terms and Conditions
Mountain big sage	≤45 herbaceous species ≤35 shrub species	Holechek 1998 Mixed in with many other species	Livestock removed in 3 to 5 days of reaching utilization level
Wyoming and Basin Big Sage	≤35 herbaceous species ≤35 shrub species		Livestock removed in 3 to 5 days of reaching utilization level
Black sage	≤35 herbaceous species ≤35 shrub species	Winter sheep forage	Livestock removed in 3 to 5 days of reaching utilization level
Riparian and wet meadows	As applicable ≤50 herbaceous species ≤35 woody species or average stubble height of at least 4 to 6 inches (depending on site capability and potential) for herbaceous riparian vegetation	Monitoring would be conducted using accepted protocols (including but not limited to: Burton et al. 2011; BLM 1996; Platts 1990).	Average stubble height 4 to 6 inches—Livestock removed in 3 to 5 days of reaching utilization level based on site or sequential action No grazing from May 15 to August 30 in brood rearing habitat

Sources: Holechek 1988; Holechek et al. 1998; Burton et al. 2011; BLM 1996; Platts 1990

[1]Table 2-12, Guidelines for Establishing Allowable Use Levels if Not Meeting (or Not Making Progress Toward) GRSG Objectives under Alternative D, outlines specific utilization triggers and associated livestock management actions to be implemented as terms and conditions of renewed grazing permits after a determination has been made that levels or patterns of use occurring under currently permitted grazing are preventing the habitat objectives listed in Table 2-11 from being attained.

Holechek reviewed past research on grazing intensity and dry matter residue levels necessary to maintain soil, forage plant vigor, livestock diet quality, and wildlife habitat. Holechek (1988) concluded "Some conclusions can be drawn from these studies dealing with intensity. Desert shrubland characterized by ranges such as the sagebrush grassland, Chihuahuan desert, and the Mojave Desert with under 12 inches of average annual precipitation can withstand between 25 and 35% use of the primary forage species, depending on the condition of the range, type of grazing system, season of use, and degree of aridity. The grassland ranges that receive 12-25 inches such as the shortgrass prairie can sustain 35-45% use."

Much of Nevada's lower elevation GRSG habitat would fall into the sagebrush grassland type, with precipitation under 12 inches annually. However, there are areas of GRSG habitat at higher elevations that would fall into the lower end of the 12- to 25-inch precipitation range.

Boyd, Beck, and Tanaka (2014) made the following observations: "… it is important to manage grazing in a way that maximizes current-year herbaceous growth in breeding habitats which include sagebrush cover exceeding 10 percent and which have functional bunchgrass understories, given the high value of such sites to nesting and early brood-rearing GRSG (Connelly et al., 2000; Cagney et al., 2010)."

The effects of grazing on nesting habitat may be complicated by grazing preferences at small scales. For example, research has shown that cattle prefer to graze grasses in openings between shrubs over grasses growing under shrub canopies (where GRSG would most likely nest), but preference for under canopy plants increases if grass utilization at the pasture scale exceeds 40 percent by weight (France et al. 2008). Additionally, herbaceous stubble heights have been found to be an important aspect of quality GRSG habitat, especially early brood rearing/summer and winter habitat (Hagen et al. 2007; Connelly et al. 2000).

Development of grazing management agreements (GMAs) and Allotment Management Plans (AMPs) included as terms and conditions of grazing permits and leases may provide additional grazing management flexibility. AMPs and GMAs will incorporate an adaptive management process that emphasizes the use of monitoring data to determine whether progress is being made toward management objectives and management flexibility that can be implemented under the existing plan or agreement.

*Monitoring would be conducted using accepted protocols including but not limited to Burton et al. 2011; BLM 1996; Platts 1990.

2.8.6 Alternative E

Alternative E is based on the State of Nevada's Conservation Plan for GRSG in Nevada (State of Nevada Alternative, Management Actions for the Conservation of the GRSG in the Nevada and Northeastern California Sub-region [State of Nevada 2012]; see **Appendix O**, State of Nevada Alternative). It would apply to all BLM-administered and National Forest System lands in Nevada. The State of California did not submit a proposal for a complete alternative; as such, Alternative E would apply only to BLM-administered and National Forest System lands in Nevada.

The goals, objectives, and actions under Alternative E reflect concurrent state-level planning efforts for protecting GRSG and its habitat. State-level planning focuses on all lands in the state, regardless of ownership. The actions are applied to federal lands if the federal agencies have the authority to implement them.

The Nevada State Plan identifies one SGMA in the state. The SGMA map defines the overall area where the state would like resources to be managed to maintain and expand GRSG populations. The SGMA includes core, priority, general, and nonhabitat management areas.

The State of Nevada SGMA map is based on a data-driven approach that uses existing GRSG telemetry locations and mapping products as multiple environmental factors to model the probability of GRSG occurrence throughout Nevada. This process resulted in resource selection functions that were used to create a habitat suitability index and predict the relative importance of all areas, even those where data are lacking. These methods have been accepted in peer-reviewed scientific literature and have been shown to be valuable for identifying areas meaningful to GRSG populations.

Desired Habitat Conditions

The desired habitat conditions for GRSG describe what is generally considered to be the highest quality seasonal habitat for GRSG, specific to Nevada. The desired habitat conditions do not specify what is and what is not habitat, but depict the characteristics of seasonal habitats that GRSG in Nevada are using most successfully, based on research in Nevada and the Great Basin. The desired habitat conditions are based on current knowledge of GRSG selection and demographic rates related to habitat conditions in Nevada and the Great Basin. Management to work towards these desired habitat conditions must be implemented using professional judgement that assesses ecological site descriptions (including current state and potential), adaptive management, and knowledge of authorized land uses and plans. Vegetation community responses to management techniques can be highly variable and may take years to reach desired conditions depending on a multitude of factors. Vegetation communities go through natural and human influenced successional stages over time that may or may not be progressing sites towards the desired habitat conditions.

Therefore, monitoring and data collection must be conducted over a sufficient period of time to allow for an accurate accounting of whether or not a site is making progress toward the desired conditions.

The desired habitat conditions will be used to evaluate management actions and site conditions in GRSG habitat to ensure that 1) habitats are maintained if meeting desired conditions, or 2) habitats are trending toward these conditions if they are not being met. Management actions in GRSG habitats will include site-specific objectives using these desired habitat conditions as guidelines, while taking into account ecological site descriptions tied to state and transitions models. Progress of management actions will be evaluated through long-term monitoring and adaptive management. When habitat within the state is identified as not meeting these desired conditions and there are opportunities and resources available, the State will seek to work with private and public land managers to assess the causal factors and recommend adjustments in management to work towards the desired conditions. The desired habitat conditions in **Table 2-13** should not be used to conduct land health assessments and are not regulatory, but are intended to help guide planning for current and future management using adaptive management as a part of the process. In implementation, managers must have flexibility to manage for these desired GRSG habitat conditions along with other desired conditions on the site, taking into consideration existing permitted uses and corresponding management plans; as well, some sites may not have the potential to meet all desired GRSG habitat conditions specific to the site.

The State of Nevada recognizes that a resilient and resistant sagebrush ecosystem should be heterogeneous (a mosaic of multiple seral states) across the landscape and that achievement of these desired habitat conditions resulting in a large-scale homogenous landscape is not desirable within the State of Nevada. Thus, the state will work with land managers and advisors to work towards achieving or the continued maintenance of the desired conditions in **Table 2-13**, and to incorporate new science, adaptive management, and incentives in the future that will allow this to occur.

The desired conditions in **Table 2-13** should not be reviewed, measured, or managed for, independently. GRSG habitat suitability should be determined by the relationship among several indicator values including ecological site descriptions (including current state and potential) along with the relative abundance of habitat types across the landscape. These conditions apply to an area being used by GRSG for the appropriate life stage (microsites) and not across the entire site or landscape. The desired conditions for each seasonal habitat should only be assessed during the appropriate season of use (dates can vary annually based on climatic conditions) and in areas spatially mapped as the relevant seasonal habitat (expected from USGS in May 2015). Habitat types may not be mutually exclusive and therefore may have to be managed to meet

Table 2-13
Desired Habitat Conditions for Greater Sage-Grouse
Site-specific objectives should be defined based on ecological site descriptions and current ecological state

Life Requisite	Habitat Indicator	Objective	Notes
GENERAL/LANDSCAPE-LEVEL			
All Life Stages	Rangeland Health Indicator Assessments	Conduct assessments in sage-grouse habitat and develop site-specific objectives based off assessments	Pellant et al. 2005
Cover (Nesting)	Seasonal Habitat Needed	>65% of the landscape in sagebrush dominated cover	Aldridge and Boyce 2007
	Annual Grasses	<%5	Blomberg et al. 2012
Security (Nesting)	Conifer Encroachment	<3% phase I (>0- <25%cover) No phase II (25–50% cover) No phase III (>50% cover)	Casazza et al. 2011 USGS (In prep) (A)
Cover and Food (Winter)	Conifer Encroachment	<5% phase I (>0 - <25% cover) No phase II (25–50% cover) No phase III (>50%)	USGS (In prep) (A) USGS (In prep) (B)
	Sagebrush Extent	>85% sagebrush dominated land cover	USGS (In prep) (A) Doherty et al. 2008
LEK (Seasonal Use Period: 1 March – 15 May)			
Cover	Availability of Sagebrush Cover	Has adjacent sagebrush cover	Connelly et al. 2000 Blomberg et al. 2012 Stiver et al. 2015 (In press) HAF
Security[1]	Pinyon and/or Juniper Cover	<3% landscape canopy cover within 1 km of leks	Connelly et al. 2000 (modified) Stiver et al. 2015 (In press) HAF Baruch-Mordo et al. 2013 Coates et al. 2013 Manier et al. 2014
	Proximity of Tall Structures[2]	None within 3 miles (5 kilometers)	
NESTING[3] (Seasonal Use Period: 1 April- 30 June)			
Cover	Sagebrush Canopy Cover	≥20%	Kolada et al. 2009a Kolada et al. 2009b
	Residual and Live Perennial Grass Cover	≥10% if shrub cover is <25%	Coates et al. 2013 Coates and Delehanty 2010 Kolada et al. 2009a Kolada et al. 2009b
	Annual Grass Cover	<5%	Lockyer et al. (In press)
	Total Shrub Cover	≥30%	Coates and Delehanty 2010 Kolada et al. 2009a Lockyer et al. (In press)
	Perennial Grass Height	Provide overhead and lateral concealment from predators	Connelly et al. 2000 Stiver et. al. 2015 (In press) HAF Connelly et al. 2003 Hagen et al. 2007
Security[1]	Proximity of Tall Structures[2] (1 meter above shrub canopy)	None within 3 miles (5 kilometers)	Coates et al. 2013 Gibson et. al. 2013 Manier et al. 2014

Table 2-13
Desired Habitat Conditions for Greater Sage-Grouse
Site-specific objectives should be defined based on ecological site descriptions and current ecological state

Life Requisite	Habitat Indicator	Objective	Notes
BROOD-REARING/SUMMER[3] (Seasonal Use Period: 15 May- 15 September) Early brood-rearing seasonal use period: 15 May- 15 June Late brood-rearing seasonal use period: 15 June- 15 September			
All brood-rearing sites			
Cover	Perennial Grass Canopy Cover and Forbs	>15% combined perennial grass and forb canopy cover	Connelly et al. 2000 Hagen et al. 2007
Cover and Food	Perennial Forb Canopy Cover	≥5% arid ≥15% mesic	Casazza et al. 2011
Early and late brood-rearing – Upland Sites Only			
Cover	Sagebrush Canopy Cover	10-25%	Connelly et al. 2000
Late brood-rearing- Riparian Sites Only			
Cover and Food	Riparian Areas/Meadows	PFC[5]	Prichard et al. 1998 Prichard et al. 1999 Dickard et al. 2014 Stiver et al. 2015 (In press) HAF
Security	Riparian Area/Meadow Interspersion with Adjacent Sagebrush	Has adjacent sagebrush cover	Casazza et al. 2011 Stiver et al. 2015 (In press) HAF
Cover	Perennial Grass Height	Provide overhead and lateral cover from predators, for thermoregulation, insects, etc.[6]	Connelly et al. 2000 Stiver et. al. 2015 (In press) HAF Connelly et al. 2003 Hagen et al. 2007
Late brood-rearing – Both Upland and Riparian Sites			
Food	Perennial Forb Availability and Understory Species Richness	Understory Species Richness- > 5 grass and forb species present	Casazza et al. 2011
WINTER[3] (Seasonal Use Period: 1November – 28 February)			
Cover and Food	Sagebrush Canopy Cover	≥10% above snow depth	Connelly et al. 2000 USGS (In prep) (C)
	Sagebrush Height	>9.8 inches (25 centimeters) above snow depth	Connelly et al. 2000 USGS (In prep) (C)

[1]Applicable to Phase I and Phase II pinyon and/or juniper.
[2] Does not include fences.
[3]Field collection data for these seasonal habitat delineations should only be taken in the areas mapped as that habitat type (maps expected from USGS in May 2015) and during the appropriate seasonal use period. Seasonal use periods are standardized for the purposes of this table, but may fluctuate annually due to climatic conditions.
[4]Species richness should include some forb species, with consideration given to sage-grouse preferred forb species listed in Stiver et al. 2015 In Press.
[5]Site does not have to meet PFC but should be showing progress in trending toward proper functioning condition or have an upward trend if functioning at risk.
[6] Applies to grasses within sagebrush-shrub communities adjacent to riparian area. Sage-grouse generally select for perennial grass heights that are greater than what is randomly available in a given site (USGS unpublished data). Selected heights in Nevada on average range from 4" - 8" (average droop height of live plants) depending upon resistance and resilience mapping and ecological site descriptions (USGS unpublished data). Generally, sites in the northern portion of the management area trend toward the upper end and those in the southern portion trend toward the lower end of the height range (USGS unpublished data).

multiple conditions or selected for the more limiting habitat in the area. It is important to understand that the desired conditions described for these habitat types are based on average plant productivity, structural data, supporting scientific literature, and expert opinion relative to GRSG use of sagebrush communities and they may not apply to all sagebrush communities in the planning area (Davies et al. 2006). These measures also do not account for inter-annual climate variation (e.g., precipitation) (Davies et al. 2006). Herbaceous vegetation, in particular, varies dramatically year to year; measurements for a single given year should not necessarily be used to adjust management decisions or actions. Individual indicator values do not define site suitability and overall site suitability descriptions require an interpretation of the relationships between the indicators, ecological site descriptions (including current state and potential), and other factors. In order to provide recommendations for management changes and adaptive management, professional expertise and judgment are required to properly assess current conditions. This should include but not be limited to inter-annual climate variation, and authorized uses and their associated plans.

These desired habitat conditions were developed by a team consisting of representatives from the USFWS, NDOW, USFS, USGS, and BLM. The team reviewed the Connelly et al. (2000) guidelines adding considerable detail and making adjustments based on regionally and locally derived data and analysis by the USGS. The State of Nevada's Science Work Group provided input on the science behind the desired habitat conditions in **Table 2-13**.

Other Key elements of this alternative are as follows:

- Achieving "net conservation gain" of GRSG habitat by implementing a strategy to avoid, minimize, and mitigate impacts on GRSG
- Establishing the Conservation Credit System
- Establishing the Sagebrush Ecosystem Technical Team

2.8.7 Alternative F

Alternative F is based on recommendations submitted by individuals and conservation groups for the protection and conservation of GRSG and its habitat. Alternative F includes goals and objectives that do the following:

- Increase GRSG populations to a level where they are viable and secure from local extirpation events and, eventually, to a level that allows for an annual harvest surplus
- Restore and maintain sagebrush steppe to its ecological potential in PPH and PGH
- Establish a system of sagebrush reserves to anchor recovery efforts by protecting the highest quality habitats

- Rest 25 percent of PHMAs and GHMAs from livestock grazing each year and reduce AUMs by 25 percent
- Reduce the established AMLs for wild horses and burros in HMAs and WHBTs in PHMAs and GHMAs by 25 percent

Management actions protect GRSG habitat. Alternative F differs from Alternative C on issues relating to grazing, wild horse and burro management, lands and realty, and minerals. Management actions for conserving GRSG habitat under Alternative F apply to GRSG PHMAs and GHMAs, which are mapped as in Alternative B.

2.9 SUMMARY COMPARISON OF PROPOSED PLAN AMENDMENT AND DRAFT ALTERNATIVES

This section summarizes and compares Alternatives A through F and the BLM and Forest Service Proposed Plans considered in the Proposed LUPA/Final EIS. Combined with the appendices and maps, **Table 2-14** provides the differences among the alternatives relative to what they establish and where they occur. The table compares the differences with the most potential to affect resources among the alternatives.

Table 2-14
Comparative Allocations Summary by Alternative

Allocation	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E Nevada	Alternative E California	Alternative F	Alternative Proposed Plan
Greater Sage-Grouse Habitat	*Figure 2-1*	*Figure 2-1*	*Figure 2-2*	*Figure 2-3*	*Figure 2-4*		*Figure 2-1*	*Figure 2-5*
PHMA (Alternative A PPH)	9,573,300	9,573,300	16,526,600	10,021,300	9,176,500	396,800	9,573,300	10,296,100
(SFA PHMA)	0	0	0	0	0	0	0	(2,797,400)
GHMA (Alternative A PGH)	6,953,300	6,953,300	0	6,505,300	6,577,300	376,000	6,953,300	6,516,700
OHMA	0	0	0	6,709,100	6,356,300	352,800	0	6,498,000
Total Habitat	***16,526,600***	***16,526,600***	***16,526,600***	***23,235,700***	***22,110,100***	***1,125,600***	***16,526,600***	***23,310,800***
Wild Horse and Burro	*Figure 2-6*	*Figure 2-6*	*Figure 2-6*	*Figure 2-6*	*Figure 2-6*		*Figure 2-6*	*Figure 2-7*
BLM Herd Areas	779,400	779,400	779,400	779,400	779,400	0	779,400	779,400
BLM Herd Management Areas	3,930,200	3,930,200	3,930,200	4,001,300	3,930,100	100	3,930,200	3,639,900
USFS Wild Horse and Burro Territories	423,500	423,500	423,500	423,500	423,500	0	423,500	423,500
Total	***5,133,100***	***5,133,100***	***5,133,100***	***5,204,200***	***5,133,000***	***100***	***5,133,100***	***4,842,800***
Livestock Grazing	*Figure 2-8*	*Figure 2-8*	*Figure 2-9*	*Figure 2-8*	*Figure 2-8*		*Figure 2-8*	*Figure 2-10*
Open	16,490,600	16,490,600		16,490,600	15,732,300	758,300	16,490,600	16,750,200
Closed	36,000	36,000	16,526,600	36,000	36,000	0	36,000	62,600
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,768,300***	***758,300***	***16,526,600***	***16,812,800***
Comprehensive Travel and Transportation Management	*Figure 2-11*	*Figure 2-12*	*Figure 2-13*	*Figure 2-13*	*Figure 2-13*		*Figure 2-13*	*Figure 2-14*
Open	12,145,400	6,405,900	0	0	0	0	0	0
Limited/Designated	3,859,600	9,599,100	16,005,000	16,005,000	15,232,200	772,800	16,005,000	16,265,900
Closed	521,600	521,600	521,600	521,600	521,600	0	521,600	547,000
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,753,800***	***772,800***	***16,526,600***	***16,812,900***

Table 2-14
Comparative Allocations Summary by Alternative

Allocation	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E Nevada	Alternative E California	Alternative F	Alternative Proposed Plan
Areas of Critical Environmental Concerns	*Figure 2-15*	*Figure 2-15*	*Figure 2-16*	*Figure 2-15*	*Figure 2-15*		*Figure 2-17*	*Figure 2-15*
Acres of Existing within Habitat	115,300	115,300	115,300	115,300	101,600	13,500	115,300	115,300
Acres Proposed within Habitat	0	0	9,458,000	0	0	0	878,700	0
Total	***115,300***	***115,300***	***9,573,300***	***115,300***	***101,600***	***13,500***	***994,000***	***115,300***
Oil and Gas	*Figure 2-18*	*Figure 2-19*	*Figure 2-20*	*Figure 2-21*	*Figure 2-22*		*Figure 2-20*	*Figure 2-23*
Major Stips (NSO)	0	0	0	14,642,300	0	0	0	9,255,400
Moderate Stips (CSU/TL)	0	0	0	0	14,004,000	0	0	6,073,800
Open (open standard stips)	14,642,300	6,405,900	0	0	0	638,300	0	0
Closed	1,884,300	10,120,700	16,526,600	1,884,300	1,718,900	165,400	16,526,600	1,483,700
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,722,900***	***803,700***	***16,526,600***	***16,812,900***
Geothermal	*Figure 2-18*	*Figure 2-19*	*Figure 2-20*	*Figure 2-21*	*Figure 2-22*		*Figure 2-20*	*Figure 2-23*
Major Stips (NSO)	0	0	0	14,642,300	0	0	0	9,255,400
Moderate Stips (CSU/TL)	0	0	0	0	14,004,000	-	0	6,073,800
Open (open standard stips)	14,642,300	6,405,900	0	0	0	638,300	0	0
Closed	1,884,300	10,120,700	16,526,600	1,884,300	1,718,900	165,400	16,526,600	1,483,700
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,722,900***	***803,700***	***16,526,600***	***16,812,900***
Mineral Material Sales	*Figure 2-24*	*Figure 2-25*	*Figure 2-26*	*Figure 2-27*	*Figure 2-28*		*Figure 2-25*	*Figure 2-29*
Open	14,642,300	6,405,900	0	0	14,462,900	607,400	6,405,900	6,073,800
Closed	*1,884,300*	10,120,700	16,526,600	16,526,600	1,290,900	165,400	10,120,700	10,739,100
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,753,800***	***772,800***	***16,526,600***	***16,812,900***
						16,526,600		

Table 2-14
Comparative Allocations Summary by Alternative

Allocation	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E Nevada	Alternative E California	Alternative F	Alternative Proposed Plan
Locatable Minerals	*Figure 2-30*	*Figure 2-31*	*Figure 2-32*	*Figure 2-33*	*Figure 2-33*		*Figure 2-33*	*Figure 2-34*
Existing Withdrawal	521,600	521,600	521,600	521,600	521,600	0	521,600	521,600
Recommended Withdrawal	0	9,342,600	16,005,000	0	0	0	9,342,600	2,797,400
Open	16,005,000	6,662,400	0	16,005,000	15,234,500	770,500	6,662,400	13,493,800
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,756,100***	***770,500***	***16,526,600***	***16,812,800***
Wind Energy	*Figure 2-35*	*Figure 2-36*	*Figure 2-37*	*Figure 2-38*	*Figure 2-39*		*Figure 2-37*	*Figure 2-40*
Open	14,642,300	0	0	0	0	0	0	0
Exclusion	1,884,300	10,120,700	16,526,600	16,526,600	1,290,900	165,400	16,526,600	10,759,400
Avoidance	0	6,405,900	0	0	14,462,900	607,400	0	6,053,400
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,753,800***	***772,800***	***16,526,600***	***16,812,800***
Solar Energy	*Figure 2-41*	*Figure 2-42*	*Figure 2-43*	*Figure 2-44*	*Figure 2-45*		*Figure 2-43*	*Figure 2-46*
Open	630,100	604,600	0	0	630,100	0	0	0
Exclusion	13,957,800	13,957,800	16,526,600	16,526,600	13,188,700	769,100	16,526,600	16,812,800
Avoidance	1,938,700	1,964,200	0	0	1,938,700	0	0	0
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,757,500***	***769,100***	***16,526,600***	***16,812,800***
		15,922,000						
Non-Energy Leasables	*Figure 2-24*	*Figure 2-25*	*Figure 2-26*	*Figure 2-27*	*Figure 2-28*		*Figure 2-25*	*Figure 2-29*
Open	14,642,300	6,405,900	0	0	14,462,900	607,400	6,470,600	6,051,900
Closed	1,884,300	10,120,700	16,526,600	16,526,600	1,290,900	165,400	10,056,000	10,760,900
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,753,800***	***772,800***	***16,526,600***	***16,812,800***
		6,405,900						
Rights of Way	*Figure 2-47*	*Figure 2-48*	*Figure 2-49*	*Figure 2-50*	*Figure 2-51*		*Figure 2-48*	*Figure 2-52*
Major ROW open high voltage transmission	14,642,300	0	0	0	0	0	0	0
Major ROW Avoidance	0	6,470,600	0	14,642,300	14,463,000	607,400	6,470,600	15,329,200

Table 2-14
Comparative Allocations Summary by Alternative

Allocation	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E Nevada	Alternative E California	Alternative F	Alternative Proposed Plan
Major ROW Excluded	1,884,300	10,056,000	16,526,600	1,884,300	1,290,800	165,400	10,056,000	1,483,600
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,753,800***	***772,800***	***16,526,600***	***16,812,800***
Rights of Way	*Figure 2-53*	*Figure 2-54*	*Figure 2-55*	*Figure 2-56*	*Figure 2-57*		*Figure 2-54*	*Figure 2-58*
Minor ROW open	14,642,300	0	0	0	0	0	0	6,073,800
Minor ROW Avoidance	0	6,470,600	0	15,070,400	14,463,000	607,400	6,470,600	9,255,400
Minor ROW Excluded	1,884,300	10,056,000	16,526,600	1,456,200	1,290,800	165,400	16,526,600	1,483,600
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,753,800***	***772,800***	***22,997,200***	***16,812,800***
Land Tenure	*Figure 2-59*	*Figure 2-60*	*Figure 2-61*	*Figure 2-62*	*Figure 2-63*		*Figure 2-60*	*Figure 2-64*
Retention	15,760,300	16,046,100	16,526,600	16,526,600	15,010,600	752,000	16,046,100	16,812,800
Disposal	766,300	480,500	0	0	743,200	20,800	480,500	0
Total	***16,526,600***	***16,526,600***	***16,526,600***	***16,526,600***	***15,753,800***	***772,800***	***16,526,600***	***16,812,800***
Utility Corridors	**Figure 2-65**	**Figure 2-65**	**Figure 2-66**	**Figure 2-65**	**Figure 2-65**		**Figure 2-65**	**Figure 2-67**
Within GRSG Habitat	1,322,800	1,322,800	209,500	1,322,800	1,264,900	57,900	1,322,800	390,500
Total	***1,322,800***	***1,322,800***	***209,500***	***1,322,800***	***1,264,900***	***57,900***	***1,322,800***	***390,500***

2.10 DETAILED DESCRIPTION OF DRAFT ALTERNATIVES

2.10.1 No Action Alternative

The No Action Alternative represents the continuation of present management for all the sub-regional LUPs considered in this programmatic LUPA. It provides the baseline against which to compare other action alternatives and their impacts on resources and resource uses. The No Action Alternative is required by CEQ regulations implementing NEPA (40 CFR, Parts 1500-1508). It is not required to meet the agency purpose and need and must be assessed in an EIS as a basis for comparison.

The LUPs included in this programmatic amendment were developed and approved between 1982 and 2008. They include BLM RMPs, BLM relic MFPs, and Forest Service LRMP and collectively provide a varying range of goals, objectives, plan decisions, and allocations that reflect the issues at the time of their development. The No Action Alternative would continue implementing management decisions and agency policies under the current approved LUPs in the Nevada and Northeastern California planning area. Direction contained in existing statutes, regulations, and policies would also continue to be implemented and may at times supplement provisions in existing LUPs.

Special Status Species/GRSG Habitat

Under the No Action Alternative, there are no public lands designated by the BLM or the Forest Service as PPH or PGH in the sub-regional planning area. The LUPs do not contain special designations pertaining to managing GRSG, such as GRSG core areas or priority habitat or other types of references to relative habitat quality.

In 2004, NDOW released the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (NDOW 2004b). Through this plan, NDOW identified and delineated PMUs across the state for management, inventory, and mapping. The conservation plan also directed the creation of local working groups along these general PMU boundaries. Based on the best available information, the GRSG local working groups refined the PMU boundaries and established goals and objectives for individual PMU conservation plans.

The BLM and Forest Service use the State of Nevada PMU boundaries as management units for GRSG conservation. In the BLM's more recently completed LUPs and those currently under revision, however, these are not allocative designations, but rather are identified only to focus management attention on the area.

In the sub-region, all BLM and Forest Service offices work closely with their state wildlife agency to maintain current maps of GRSG habitat on the BLM-administered and National Forest System lands. General habitat maps of GRSG breeding, brood-rearing, and wintering habitat or an inventory of known lek distribution may be included in some of the more recent LUPs for reference

purposes and to guide specific management actions and lease stipulations contained in the LUP as they pertain to managing GRSG habitat.

GRSG Habitat Monitoring
By policy, the BLM conducts land health assessments and monitoring for a variety of resource programs, including livestock grazing, wild horse and burro use, wildlife, wildfire restoration, and vegetation condition, and riparian condition, soils, and hydrologic function.

In the Nevada and Northeast California Sub-region, there are no consistent guidelines that specifically require the monitoring of GRSG habitat condition. Monitoring in this type of habitat is associated with monitoring and meeting the objectives of other resource programs. The Forest Service LRMPs established management indicator species and identify the range of population needed to maintain species viability. GRSG have been identified by the Forest Service as a management indicator species.

Habitat Restoration/Vegetation Management

Sagebrush Plant Communities
In the sub-region, all LUPs contain some level of management direction for managing sagebrush vegetation communities and habitat. Most LUPs contain general objectives for maintaining or improving sagebrush plant communities. Key aspects of this direction vary from implementing restrictions on sagebrush removal associated with resource use developments to implementing proactive sagebrush community restoration activities following the Western States Sage-grouse Guidelines. Habitat management is generally conducted with an emphasis on protecting GRSG leks and nesting and brood-rearing habitat during any proposed activity. Across the sub-region, lek buffers are maintained at two miles, in accordance with the guidance and policies in place at the time the plan was developed.

Specific vegetation treatment projects are implemented through other range, wildlife, or vegetation management programs that seek to improve habitat for big and small game species, including GRSG and its habitat. In many cases the habitat requirements for other species overlap with that of GRSG in the context of the overall goals and objectives for wildlife habitat in general or for other species.

The California RMPs have adopted the Sage Steppe Ecosystem Restoration Strategy Final EIS (BLM 2008f). This document provides guidance and management for restoring sagebrush plant communities that have become dominated by western juniper. The Sage Steppe Ecosystem Restoration Strategy specifically states "restore habitat for sagebrush obligate species," which includes woodland habitat.

Woodlands

Most of the sub-region shares some level of woodland vegetation component with habitat occupied by GRSG. This woodland vegetation component is mostly pinyon and/or juniper in central and eastern Nevada, to mostly juniper in northern Nevada and the Northeastern California Sub-region, where pinyon is scarce or not present.

All BLM and Forest Service LUPs in the sub-region address woodland management in terms of providing public access to, and use of, woodland products and include goals and objectives to this effect. Woodland products may range from personal, commercial, or contract fuel wood cutting and biomass production to posts, pinyon nut harvesting, and Christmas trees. In some cases, management direction may highlight encroachment areas for targeted fuel wood and post cutting to reduce the effects of encroachment on these other habitats.

In the BLM's Nevada side of the sub-region, there are no BLM LUP goals, objectives, or management actions that specifically address protection or conservation of GRSG habitat in the management framework for woodland products.

As stated previously under sagebrush plant communities, the California BLM follows the Sage Steppe Ecosystem Restoration Strategy. It provides guidance and management for the restoration of sagebrush plant communities that have become dominated by western juniper. The Humboldt National Forest LRMP states that fuel wood harvesting policy will reflect the needs of wildlife.

Integrated Invasive Species Management

One of the primary threats in the western range of the GRSG identified by the USFWS is the threat of habitat degradation through increased presence of invasive species and noxious weeds. The BLM and Forest Service have followed an invasive and noxious species management program as a matter of agency policy since 1995. Inventories are recorded and maintained in the National Invasive Species Information Management System database, and invasive and noxious weeds are routinely addressed when permitting public land uses, including applying mitigation measures. The BLM also manages certain areas in partnerships with other agencies and organizations through cooperative weed management areas (CWMAs), which focus attention and shared resources on specific areas.

The BLM and Forest Service have authorized the use of specific herbicides on public lands and developed standard operating procedures and mitigation measures for all treatment methods for addressing invasive and noxious weeds in project approval or habitat and vegetation restoration projects (BLM 2007a; Forest Service 2004).

In the sub-region, with the exception of the California BLM field offices, there are no LUP goals, objectives, or management actions identified specifically for addressing protection or conservation of GRSG habitat in the management framework of the invasive and noxious weed management program.

The northeastern California RMPs have identified herbicide use restrictions and application guidance specific to herbicide applications near GRSG leks, lek complex-associated habitats, and nesting and brood-rearing habitat.

Vegetation Treatments

Vegetation treatments are discussed in the Sagebrush Plant Communities subsection, above. In the sub-region, all LUPs contain some level of management direction for managing sagebrush vegetation communities and habitat. Most LUPs contain general objectives for maintaining or improving sagebrush plant communities. All LUPs address vegetation treatments for improving wildlife habitat overall or to provide increased forage for livestock, wildlife, and wild horses and burros. The level of detail for specific objectives and management actions regarding vegetation treatments in sagebrush communities for the purpose of improving GRSG habitat varies, depending on the age of the LUP.

Wild Horses and Burros

In the sub-region, the BLM and Forest Service districts manage for wild horses and burros in established herd areas (HAs), HMAs, or wild horse and burro territories (WHBTs; Forest Service). Most HAs and HMAs contain GRSG habitat in a sagebrush vegetation community.

Overall direction is to manage for healthy populations of wild horses and burros to achieve a thriving natural ecological balance with respect to wildlife, livestock grazing, and other multiple uses. All HMAs (or Forest Service WHBTs) are managed to achieve and maintain an appropriate management level (AML). Initially, AML is established in LUPs at the outset of planning and is adjusted based on monitoring data throughout the life of the plan. Priorities for gathering excess wild horses and burros to maintain AML are based on population inventories, gather schedules, resource conditions, and budget.

Gathers are also conducted in emergency situations when the health of the population is at risk for lack of forage or water. Direction for prioritizing wild horse and burro gathers and achieving and maintaining AML is not based on GRSG habitat needs, although this is implicit in the congressional directive to maintain a thriving natural ecological balance.

Under the No Action Alternative, there are no goals, objectives, or management actions specifically identified in the management framework for the wild horse and burro program.

Fire Management

In the sub-region, all LUPs address fire suppression and fuels management. Each LUP supports the development and adherence to a more detailed fire management plan that outlines priorities and levels of suppression for particular vegetation classes, or resource protection. Most plans support objectives of reintroducing fire into fire-dependent ecosystems and use the fire regime condition class (FRCC) framework to aid in prioritizing response to wildfires and determining where fire can be used for resource benefit.

Most plans place priority for suppression on the protection of life and property, followed by important resource values. The more recent LUPs (2008) contain specific objectives and management actions for suppression and management of fires in sagebrush vegetation communities and GRSG habitat, in accordance with local PMU conservation strategies and those outlined in IM 2013-128.

Livestock Grazing/Range Management

All LUPs provide for the management of rangeland resources and land health standards through the livestock grazing program. The Nevada LUPs do not contain management guidance for permitted livestock grazing specific to conserving GRSG habitat. The California LUPs contain specific management actions for permitted livestock grazing in accordance with local GRSG PMU conservation strategies. Land health conditions and wildlife habitat are monitored or assessed as part of the grazing management program.

The BLM sets animal unit months (AUMs), season of use, and grazing management strategies through the permit renewal process and adjusts these as needed to meet resource objectives. Some grazing allotments have AMPs; however, in Nevada forage is allocated based on the multiple use decision process that takes into consideration forage availability for livestock, wild horses and burros, and wildlife. All districts and field offices are subject to meeting the standards for rangeland health, following the guidelines for livestock grazing.

The California LUPs (2008) contain specific management actions for managing livestock grazing in sagebrush ecosystems and consider GRSG habitat needs in authorizing levels of grazing use.

The Humboldt and Toiyabe LRMPs established specific use standards for livestock grazing. These standards have been incorporated into the term grazing permits and are referenced in the annual operating instructions.

Recreation

In the sub-region, the BLM and Forest Service manage for developed and dispersed recreation. Several plans identify special recreation management areas (SRMAs) where recreation management is focused on managing for specific recreation activities, such as OHV races, or more dispersed passive uses, such as group camping, wildlife watching, and sightseeing. Many of these SRMAs contain sagebrush vegetation communities and GRSG.

None of the LUPs contain goals, objectives, or management actions specific to managing GRSG habitat in terms of issuing SRPs or casual use. The Alturas and Eagle Lake RMPs provide for denial of SRPs for activities where adverse impacts cannot be mitigated by the applicant. This would the case if the proposed activity were to conflict with recreation or resource management objectives, but GRSG are not specifically identified in relation to issuance or nonissuance of SRPs.

The Surprise LUP places similar restrictions in SRPs as follows: "and other uses of special designations that require a special permit would be evaluated on a case-by-case basis. Proposals would be permitted, modified, or denied as required to protect resources and values."

Comprehensive Travel and Transportation Management

Travel management at the LUP level is expressed as allocations for areas that are termed "open," "closed," or "limited" to OHV use. Limited is expressed as either "limited to designated routes" or "limited to existing roads and trails." The former is the basic travel restriction for travel management until detailed implementation-level planning is completed to designate routes for use or nonuse.

In the Nevada and Northeast California Sub-region, all OHV categories are present. In general, plans implemented before 2008 are mostly "open" to OHV use in a district or field office planning area. Plans that have been developed or revised in 2008 and later have changed the "open" designation to "limited," in accordance with BLM policy established in 2007.

Under current management, travel management areas (TMAs) have not been consistently identified in LUPs beyond the basic allocations of open, closed, and limited. The Ely RMP has identified TMAs based on watershed boundaries, consistent with the management direction of the RMP to manage all resources on a watershed basis.

Outside of these basic planning allocations, the goals, objectives, and management actions specific to managing GRSG are not present in most LUPs. The Alturas, Eagle Lake, and Surprise RMPs contain direction for the use of designated routes, including several restrictions for protecting natural resources or preventing harassment of wildlife. The Alturas RMP contains seasonal closures in specific areas to protect GRSG nesting and brood-rearing habitats.

For National Forest System lands, the Humboldt-Toiyabe National Forest has completed its TMPs. The agency designated specific areas as limited to existing or designated routes for motorized vehicle travel. The forest has published motor vehicle use maps, which display the specific routes designated for motor vehicles.

Lands and Realty

The lands and realty program processes ROWs and land tenure adjustments and manages utility corridors. The BLM lands and realty program also processes all federal withdrawal applications, including applications for withdrawal from mining law, regardless of federal land management jurisdiction, for recommendation to the Secretary of the Interior.

Most LUPs in the sub-region do not contain specific goals, objectives, or management actions directly related to GRSG conservation; however, mitigation for GRSG habitat is typically developed during the site-specific NEPA process; most ROWs and surface developments are subject to stipulations or timing limitations developed for GRSG. Utility corridors exist in most LUPs. The more recent (2008) LUPs in northeastern California identify specific avoidance areas and apply seasonal buffers and timing restrictions for ROWs that are in GRSG habitat. The Alturas, Eagle Lake, and Surprise RMPs identify specific exclusions and avoidance areas for ROWs that are in GRSG habitat. These LUPs set a buffer of 2 miles from a lek for new construction of overhead structures, such as transmission lines and towers, wind turbines, and communication towers.

All federal- and BLM-administered and National Forest System lands are held in retention unless identified for disposal. Disposal criteria typically include consideration of crucial wildlife habitat in general when identifying lands available for disposal under various authorities. Some LUPs and the Nevada GRSG Conservation Strategy identify objectives to acquire sensitive GRSG habitat or easements where appropriate or in PMUs. In general, public lands in Nevada designated for potential disposal under Section 203 of FLPMA do not take into consideration excluding GRSG habitat from disposal (e.g., checkerboard lands). However, the northeastern California field offices follow PMU strategies, which state "BLM will not exchange or sell lands that have an active or inactive lek within them."

Utility Corridors

All the LUPs in the sub-region identify authorized utility corridor ROWs. Utility corridors in the LUPs represent a mix of existing ROW corridors and planning corridors. In addition, in 2008 at the direction of Congress and Section 368 of the Energy Policy Act of 2005, the BLM amended its LUPs through the West-Wide Energy Corridor Programmatic EIS and ROD and designated planning corridors for priority energy projects. This designation was broad in scope and did not necessarily consider GRSG conservation issues at the local level.

Wind and Solar Energy (Renewable)

In 2005 and 2012, the BLM programmatically amended its LUPs for renewable energy resources through the Wind Energy Programmatic EIS (BLM 2005b) and the Solar Energy Program Programmatic EIS (BLM 2012h), respectively. These programmatic documents outline public lands available and unavailable for these resource uses, provide direction on processing wind and solar ROWs and

establish BMPs for conducting these activities on public lands. The BMPs contain some general guidance for addressing GRSG and GRSG habitat. Wind and solar development are also subject to ROW restrictions.

Minerals

Leasable Minerals

In the sub-region, all BLM LUPs contain fluid mineral lease stipulations for oil and gas and geothermal resources, as well as nonenergy leasable minerals that occur in GRSG habitat. These stipulations range from NSO stipulations within 0.25 mile of a lek to appropriate seasonal timing limitations based on GRSG biology.

Timing limitations vary by type of habitat (e.g., lek, brood-rearing, and winter) and are typically applied to a 2-mile buffer around leks. Older LUPs typically do not provide exception, modification, and waiver language. The more recent LUPs—Ely, Alturas, Eagle Lake, and Surprise RMPs—contain explicit exception, modification, and waiver language for each stipulation, in accordance with BLM policy, to address any special circumstances that would alter the lease stipulation requirements.

Forest Service LUPs contain similar direction. Leasing on National Forest System lands is done by the BLM after the Forest Service conducts appropriate environmental review and consents to leasing.

Locatable Minerals

In the sub-region, all lands are generally open to mineral location under the General Mining Act of 1872, as amended, (May 10, 1872, Ch. 152, 17 Stat. 19). There are specific locatable mineral withdrawals for particular ROWs, designated wilderness areas, ACECs, and other administrative needs.

There are no locatable mineral withdrawals specific to protecting GRSG habitat. All locatable mineral activities are managed under the regulations at 43 CFR, Part 3800, and 36 CFR, Part 228. Mitigation of effects on GRSG and its habitat are identified through the NEPA process for approving plans of operation. Goals and objectives for locatable minerals provide opportunities to develop the resource while preventing undue or unnecessary degradation of public lands. Also, they minimize significant surface disturbance on National Forest System lands.

Salable Mineral Materials

In the sub-region, most public lands are open to salable mineral material development. Disposal of mineral materials is discretionary. Specific closures of areas to salable mineral materials, such as ACECs or crucial or essential wildlife habitat, exist throughout the sub-region.

Some LUPs contain use and development restrictions in terms of seasonal timing limitations in relation to GRSG habitat and leks, similar to oil and gas leasing; however, this is not consistent across the sub-region. Use and development restrictions are identified mostly in the more recent LUPs and use similar buffers (i.e., 2-mile buffers). No LUPs in the sub-region contain specific goals, objectives, or management actions relative to conservation or protection of GRSG beyond the use restrictions identified above.

Mineral Split-Estate

Most split-estate lands in the planning area are private surface and federal (subsurface) minerals. The split-estate lands in the sub-region contain GRSG habitat. Under the No Action Alternative, there are no goals, objectives, or management actions identified for activities on split-estate lands relative to protection and conservation of GRSG habitat. Mitigation of impacts from project activities and approvals to GRSG habitat are typically developed through the NEPA process for any project approval occurring in mineral split-estate lands. The Alturas RMP contains surface use and occupancy standards that also apply to split-estate lands.

Special Designations

Areas of Critical Environmental Concern

There are 29 designated ACECs, covering 246,276 acres in the Nevada and Northeastern California Sub-region; of these, 22 fall in PHMA or GHMA. Of these 22 ACECs, only one in the Surprise Field Office is designated specifically for managing for the protection or conservation of GRSG or its habitat.

The primary purposes for ACEC designations are to protect unique historic, pre-historic, paleontological, or geological values and to protect special status or threatened and endangered plant and animal species and their habitat. Each of these ACECs has restrictions in the LUPs designed to protect the values for which the ACEC was designated. These restrictions include NSO stipulations, ROW exclusion or avoidance, and mineral withdrawal recommendations, as well as other use constraints. All public lands in an ACEC are held in retention. Outside of special designations, most lands are open to ROW development.

Wilderness Study Areas

There are 50 WSAs that contain GSRG habitat designated in the Nevada and Northeast California Sub-region, totaling 1,129,000 acres. Out of the 1,129,000 acres, 671,300 are in PHMAs and 178,200 are in GHMAs.

All WSAs are managed in accordance with FLPMA Section 603(c), so as not to impair the suitability of such areas for preservation as wilderness. These areas are also managed in accordance with BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012d). WSAs released from further wilderness consideration are generally managed similar to the surrounding public lands, unless a LUP specifically identifies that a different management direction be

taken or provides for consideration of other special designations, such as status as an ACEC.

2.10.2 How to Read Tables 2-15 and 2-16

The following describes how **Table 2-15**, Description of Alternative Goals and Objectives, and **Table 2-16**, Description of Alternative Actions, are written and formatted to show the LUP decisions proposed for each alternative.

In accordance with Appendix C of BLM Land Use Planning Handbook H-1601-1, LUP decisions are broad scale and guide future land management actions and subsequent site-specific implementation decisions (BLM 2005a). LUP decisions fall into two categories, which establish the base structure for **Table 2-15** and **Table 2-16**: desired outcomes (goals and objectives) and allowable uses and actions to achieve these outcomes.

- Goals are broad statements of desired outcomes that usually are not quantifiable.
- Objectives identify specific desired outcomes for resources. They may be quantifiable and measurable and may have established time frames for achievement, as appropriate.
- Actions identify measures or criteria to achieve desired outcomes (i.e., objectives), including actions to maintain, restore, or improve land health.
- Allowable uses identify uses, or allocations, that are allowable, restricted, or prohibited on the public lands and mineral estate.

Stipulations (NSO and CSU, which fall under the allowable uses category) are also applied to surface-disturbing activities to achieve desired outcomes (i.e., objectives).

In general, only those resources and resource uses that have been identified as planning issues have notable differences between the alternatives.

Actions that are applicable to all alternatives are shown in one cell across a row. These particular objectives and actions would be implemented regardless of which alternative is ultimately selected.

Actions that are applicable to more than one but not all alternatives are indicated by either combining cells for the same alternatives, or by denoting those objectives or actions as the "same as Alternative 2," for example.

In some cells, a dash (—) is used as a placeholder that indicates that there is no similar goal, objective, or action to the other alternatives or that the similar goal, objective, or action is reflected in another management action in the alternative.

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Special Status Species (Greater Sage-Grouse)					
Goal A-SSS 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-SSS 1: Maintain and/or increase GRSG abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in cooperation with other conservation partners.	Goal C-SSS 1: Same as Alternative A.	Goal D-SSS 1: Maintain and/or increase abundance and distribution of GRSG on BLM-administered and National Forest System lands by conserving, enhancing, or restoring the sagebrush ecosystem upon which populations depend, in cooperation with other conservation partners. Manage activities and authorizations on public lands to reduce predation of GRSG on public lands.	Goal E-SSS 1: The State's goal for the conservation of GRSG in the State of Nevada is to provide for long-term conservation by protecting the sagebrush ecosystem upon which the species depends. Redundant, representative, and resilient populations of GRSG will be maintained through amelioration of threats; enhancement and protection of key habitats; mitigation for loss of habitat due to anthropogenic disturbances; and restoration or rehabilitation of habitat degraded or lost due to Acts of Nature.	Goal F-SSS 1: Maintain and increase current GRSG abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem.

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Goal A-SSS 2: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-SSS 2: —[1]	Goal C-SSS 2: —	Goal D-SSS 2: Manage activities and authorizations on public lands to reduce predation of GRSG on public lands.	Goal E-SSS 2: TMA-9: Implement a predator control program to reduce transient raven populations for nest protection and increased chick survival throughout the interim period while habitat enhancement and restoration projects become established. GRSG population, nest success, and recruitment goals should be established for the SGMA (State of Nevada 2014). Focus on a six-point plan that is summarized here and expanded below. 1. Control access to garbage dumps and landfills. 2. Control access to road kill. 3. Control access to abandoned animal	Goal F-SSS 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				carcasses. 4. Control access to artificial nesting and roosting structures. 5. Ensure adequate nesting cover for GRSG. 6. Increase site-specific take of ravens.	
Objective A-SSS 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS 1: —	Objective C-SSS 1: —	Objective D-SSS 1: Ensure that authorizations include stipulations and design features to reduce or eliminate opportunities to attract and provide nesting, cover, or perches for predators in PHMA and GHMA.	Objective E-SSS 1: If impacts are not avoided, the adverse effects will need to be both minimized and mitigated. Impacts will be minimized by modifying proposed actions and developing permit conditions with measures to lessen the adverse effects to GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features (see Appendix D).	Objective F-SSS 1: —

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-SSS 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS 2: —	Objective C-SSS 2: —	Objective D-SSS 2: —	Objective E-SSS 2: —	Objective F-SSS 2: Restore and maintain sagebrush steppe to its ecological potential in PHMA and GHMA.	
Objective A-SSS 3: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS 3: —	Objective C-SSS 3: —	Objective D-SSS 3: Manage land resource uses to meet GRSG habitat objectives as described in Table 2-11 in section 2.8.5 of this Chapter.	Objective E-SSS 3: Maintain and manage GRSG habitat across the sagebrush ecosystem in the state. The habitat objectives (see Table 2-2) will be used to evaluate management actions that are proposed in GRSG habitat to ensure that habitat conditions are maintained if currently meeting objectives; or habitat conditions are making progress toward these objectives if the current conditions do not meet these objectives.	Objective F-SSS 3: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-SSS 4: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS 4: Protect PHMA from anthropogenic disturbances that will reduce distribution or abundance of GRSG.	Objective C-SSS 4: Same as Alternative A.	Objective D-SSS 4: Manage land and resource uses to conserve local GRSG populations, sagebrush communities and landscapes, and protect GRSG PHMA and GHMA from anthropogenic disturbances that would reduce distribution or abundance of GRSG.	Objective E-SSS 4: The overarching objective of the State of Nevada's plan is to achieve a net conservation gain to GRSG habitat within the SGMA in order to stop the decline of GRSG populations. Net conservation gain is defined as the State's objective to maintain the current quantity and quality of GRSG habitat within the SGMA at the state-wide level by protecting existing GRSG habitat or by mitigating for loss due to anthropogenic disturbances. Mitigation requirements are determined by the Conservation Credit System. This objective will be measured by the credit to debit ratio.	Objective F-SSS 4: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Sub-Objective A-SSS 1: No common sub-objective across LUPs within the sub-region. See **Section 2.10.1**.	Sub-Objective B-SSS 1: Designate GRSG PHMA for each WAFWA management zone (Stiver et al. 2006) across the current geographic range of GRSG that are large enough to stabilize populations in the short term and enhance populations over the long term.	Sub-Objective C-SSS 1: —	Sub-Objective D-SSS 1: —	Sub-Objective E-SSS 1: —	Sub-Objective F-SSS 1: —	
Sub-Objective A-SSS 2: No common sub-objective across LUPs within the sub-region. See **Section 2.10.1**.	Sub-Objective B-SSS 2: To maintain or increase current populations, manage or restore priority areas so that at least 70% of the land cover provides adequate sagebrush habitat to meet GRSG needs.	Sub-Objective C-SSS 2: —	Sub-Objective D-SSS 2: Manage for no net unmitigated loss of PHMA and maintain or improve current habitat conditions to meet GRSG life history needs.	Sub-Objective E-SSS 2: The overarching objective of the State of Nevada's plan is to achieve a net conservation gain to GRSG habitat within the SGMA in order to stop the decline of GRSG populations.	Sub-Objective F-SSS 2: —	
Sub-Objective A-SSS 3: No common sub-objective across LUPs within the sub-region. See **Section 2.10.1**.	Sub-Objective B- SSS 3: Develop quantifiable habitat and population objectives with WAFWA and other	Sub-Objective C-SSS 3: —	Sub-Objective D-SSS 3: —	Sub-Objective E-SSS 3: —	Sub-Objective F-SSS 3: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	conservation partners at the management zone and/or other appropriate scales. Develop a monitoring and adaptive management strategy to track whether these objectives are being met, and allow for revisions to management approaches if they are not.					
Sub-Objective A-SSS 4: No common sub-objective across LUPs within the sub-region. See **Section 2.10.1**.	Sub-Objective B-SSS 4: Manage GRSG PHMA so that discrete anthropogenic disturbances cover less than 3% of the total GRSG habitat regardless of ownership. Anthropogenic features include but are not limited to paved highways, graded gravel roads, transmission lines,	Sub-Objective C-SSS 4: —	Sub-Objective D-SSS 4: Implement program specific management actions to eliminate or minimize anthropogenic disturbances that threaten GRSG and its habitat.	Sub-Objective E-SSS 4: The State of Nevada's overriding policy for all management actions within the SGMA is to "avoid, minimize, and mitigate" impacts on GRSG habitat. This is a fundamental hierarchical decision process that seeks to: Avoid – Eliminate conflicts by	Sub-Objective F-SSS 4: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines. • In PHMA where the 3% disturbance cap is already exceeded from any source, no further anthropogenic disturbances will be permitted by BLM or Forest Service until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). • In this instance, an additional objective will be designated for the priority area to prioritize and reclaim/restore anthropogenic			relocating disturbance activities outside of GRSG habitat in order to conserve GRSG and their habitat. Avoidance of a disturbance within GRSG habitat is the preferred option. Minimize –If impacts are not avoided, the adverse effects will need to be both minimized and mitigated. Impacts will be minimized by modifying proposed actions and/ or developing permit conditions to include measures that lessen the adverse effects to GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features, such as reducing the disturbance footprint, seasonal		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	disturbances so that 3% or less of the total PHMA is disturbed within 10 years.			use limitations, and co-location of structures. Minimization does not preclude the need for mitigation of a disturbance. Any disturbance in habitat within the SGMA will require both minimization and mitigation. Mitigate – If impacts are not avoided, after required minimization measures are specified, residual adverse effects on designated GRSG habitat are required to be offset by implementing mitigation actions that will result in replacement or enhancement of the GRSG habitat to balance the loss of habitat from the disturbance activity. This will be		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				accomplished through the Conservation Credit System.		
Sub-Objective A-SSS 5: No common sub-objective across LUPs within the sub-region. See **Section 2.10.1**.	Sub-Objective B-SSS 5: Quantify and delineate GHMA for capability to provide connectivity among priority areas (Knick and Hanser 2011).	Sub-Objective C-SSS 5: —	Sub-Objective D-SSS 5: Maintain or improve connectivity to and within PHMA to promote movement and genetic diversity for population persistence and expansion.	Sub-Objective E-SSS 5: —	Sub-Objective F-SSS 5: —	
Sub-Objective A-SSS 6: No common sub-objective across LUPs within the sub-region. See **Section 2.10.1**.	Sub-Objective B-SSS 6: Conserve, enhance or restore GRSG habitat and connectivity (Knick and Hanser 2011) to promote movement and genetic diversity, with emphasis on those GRSG occupied habitat.	Sub-Objective C-SSS 6: —	Sub-Objective D-SSS 6: Maintain or improve connectivity to and within GHMA to promote movement and genetic diversity for population persistence and expansion.	Sub-Objective E-SSS 6: —	Sub-Objective F-SSS 6: —	
Sub-Objective A-SSS 7: No common sub-objective across LUPs within the sub-region. See **Section 2.10.1**.	Sub-Objective SSS 7: Assess GHMA to determine potential to replace lost PHMA caused by perturbations and/or	Sub-Objective C-SSS 7: —	Sub-Objective D-SSS 7: —	Sub-Objective E-SSS 7: —	Sub-Objective F-SSS 7: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	disturbances and provide connectivity (Knick and Hanser 2011) between priority areas. • These habitats should be given some priority over other GHMA that provide marginal or substandard GRSG habitat. • Restore historical habitat functionality to support GRSG populations guided by objectives to maintain or enhance connectivity. Total area and locations will be determined at the LUP level. • Enhance GHMA such that population declines in one area are replaced elsewhere within the habitat.					

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Adaptive management						
Goal A-SSS-AM 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-SSS-AM 1: —	Goal C-SSS-AM 1: —	Goal D-SSS-AM 1: Ensure additional PHMA and GHMA is identified based upon new science, monitoring of PHMA and GHMA.	Goal E-SSS-AM 1: The Nevada Sagebrush Ecosystem Council, through field verifications and recommendations from the Nevada Sagebrush Ecosystem Technical Team based on the best available science, will further refine the area identified as suitable habitat. The Council will also refine the management categories within the SGMA.	Goal F-SSS-AM 1: —	
Goal A-SSS-AM 2: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B- SSS-AM 2: —	Goal C-SSS-AM 2: —	Goal D-SSS-AM 2: Promote a collaborative and integrated approach to GRSG conservation among federal, tribal, state, and county agencies, as well as private landowners and organizations, permit holders and other	Goal E-SSS-AM 2: Due to the broad reach of GRSG habitat, effective management and implementation of GRSG conservation actions must be conducted through a collaborative, interagency approach that engages private,	Goal F-SSS-AM 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			public land users.	non-governmental, local, state, tribal, and federal stakeholders to achieve sufficient conservation of the GRSG and their habitat.		
Objective A-SSS-AM 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS-AM 1: —	Objective C-SSS-AM 1: —	Objective D-SSS-AM 1: In PHMA where large scale disturbance has occurred, manage adjoining GHMA as PHMA.	Objective E-SSS-AM 1: —	Objective F-SSS-AM 1: —	
Objective A-SSS-AM 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS-AM 2: —	Objective C-SSS-AM 2: —	Objective D-SSS-AM 2: Identify and implement additional GRSG conservation actions that can augment, enhance, and/or integrate program conservation measures established in agency and state land use and policy plans.	Objective E-SSS-AM 2: —	Objective F-SSS-AM 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Disease					
Goal A-SSS-D 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-SSS-D 1: —	Goal C-SSS-D 1: —	Goal D-SSS-D 1: Manage activities and authorizations on public lands to minimize opportunities to establish or enable disease vectors that could affect GRSG populations.	Goal E-SSS-D 1: —	Goal F-SSS-D 1: —
Objective A-SSS-D 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B- SSS-D 1: —	Objective C-SSS-D 1: —	Objective D-SSS-D 1: Monitor trends in West Nile Virus spread within the sub-region to determine if mitigation or additional RDFs need to be applied (consistent with applicable law) to use authorizations.	Objective E-SSS-D 1: —	Objective F- SSS-D 1: —
Administrative Collaboration and decision making					
Goal A-SSS-ACDM 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-SSS-ACDM 1: —	Goal C-SSS-ACDM 1: —	Goal D-SSS-ACDM 1: —	Goal E-SSS-ACDM 1: The overarching objective of the State of Nevada's plan is to achieve a net conservation gain to GRSG habitat within	Goal F-SSS-ACDM 1: —

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				the SGMA in order to stop the decline of GRSG populations.		
Objective A-SSS-ACDM 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS-ACDM 1: —	Objective C-SSS-ACDM 1: —	Objective D-SSS-ACDM 1: —	Objective E-SSS-ACDM 1: The State of Nevada's overriding policy for all management actions within the SGMA is to "avoid, minimize, and mitigate" impacts on GRSG habitat.	Objective F-SSS-ACDM 1: —	
Objective A-SSS-ACDM 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS-ACDM 2: —	Objective C-SSS-ACDM 2: No similar objective.	Objective D-SSS-ACDM 2: —	Objective E-SSS-ACDM 2: —	Objective F-SSS-ACDM 2: —	
Opportunities for Proactive Measures						
Goal A-SSS-OPM 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-SSS-OPM 1: —	Goal C-SSS-OPM 1: —	Goal D-SSS-OPM 1: Promote a collaborative and integrated approach to GRSG conservation among federal, tribal, state, and county agencies, as well as private landowners and	Goal E-SSS-OPM 1: Due to the broad reach of GRSG habitat, effective management and implementation of GRSG conservation actions must be conducted through a collaborative,	Goal F-SSS-OPM 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			organizations, permit holders and other public land users.	interagency approach that engages private, non-governmental, local, state, tribal, and federal stakeholders to achieve sufficient conservation of the GRSG and their habitat.		
Objective A-SSS-OPM 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SSS-OPM 1: —	Objective C-SSS-OPM 1: —	Objective D-SSS-OPM 1: Identify and implement additional GRSG conservation actions that can augment, enhance, and/or integrate program conservation measures established in agency and state land use and policy plans.	Objective E-SSS-OPM 1: —	Objective F-SSS-OPM 1: —	
Habitat Restoration/Vegetation Management						
Goal A-VEG 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-VEG 1: —	Goal C-VEG 1: —	Goal D-VEG 1: Establish and maintain a resilient sagebrush vegetative community and restore sagebrush vegetation	Goal E-VEG 1: (Long-term Goal) Maintain an ecologically healthy and intact sagebrush ecosystem that is resistant to the	Goal F-VEG 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			communities to reduce greater-GRSG habitat fragmentation and maintain or re-establish GRSG habitat connectivity over the long-term.	invasion of non-native species and resilient after disturbances such as wildfire.		
Goal A-VEG 2: —	Goal B-VEG 2: —	Goal C-VEG 2: —	Goal D-VEG 2: —	Goal E-VEG 2: (Long-term Goal) Restore wildfire return intervals to within a spatial and temporal range of variability that supports sustainable populations of GRSG and other sagebrush obligate species.	Goal F-VEG 2: —	
Goal A-VEG 3: —	Goal B-VEG 3: —	Goal C-VEG 3: —	Goal D-VEG 3: —	Goal E-VEG 3: (Short-term Goal) Reduce the amount of GRSG habitat loss due to large acreage wildfires and invasion by non-native species.	Goal F-VEG 3: —	
Objective A-VEG 1: No common objective across LUPs within the sub-	Objective B-VEG 1: N—	Objective C-VEG 1: —	Objective D-VEG 1: In PHMA and GHMA including riparian, manage for	Objective E-VEG 1: In Core, Priority, and General Management Areas, including	Objective F-VEG 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
region. See **Section 2.10.1**.			vegetation composition and structure consistent with ecological site potential and to achieve GRSG seasonal habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter).	riparian areas, manage for vegetation composition and structure consistent with ecological site potential and where possible to achieve GRSG seasonal habitat objectives (see Table 2-2).		
Objective A-VEG 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG 2: —	Objective C-VEG 2: —	Objective D-VEG 2: Focus and prioritize habitat restoration to address identified threats at the Sub-Population and Population scale.	Objective E-VEG 2: —	Objective F-VEG 2: —	
Objective A-VEG 3: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG 3: —	Objective C-VEG 3: —	Objective D-VEG 3: Focus rehabilitation efforts on re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential.	Objective E-VEG 3: Ecological site descriptions and associated state and transition models will be used to identify target areas for resiliency enhancement and restoration. Maintaining and enhancing resilience should be given top	Objective F-VEG 3: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				priority. In the Great Basin sagebrush-bunchgrass communities, invasion resistance and successional resilience following disturbance are functions of a healthy perennial bunchgrass component. A combination of active and passive management will be required to ensure this functionality. Areas that are in an invaded state that will likely transition to an annual grass monoculture if a disturbance occurs and are located within or near GRSG habitat should be prioritized for restoration efforts to increase resistance and resilience.		
Objective A-VEG 4: No common objective across	Objective B-VEG 4: —	Objective C-VEG 4: —	Objective D-VEG 4: Restore native (or desirable) plants and	Objective E-VEG 4: —	Objective F-VEG 4: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
LUPs within the sub-region. See **Section 2.10.1**.			create landscape patterns (e.g., seral stage and spatial distribution) which most benefit GRSG.			
Objective A-VEG 5: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG 5: —	Objective C-VEG 5: —	Objective D-VEG 5: Within PHMA and GHMA manage lotic and lentic riparian areas to maintain a component of perennial forbs with diverse species richness and maintain suitable cover; manage associated upland habitat to promote adjacent cover relative to site potential to facilitate brood rearing (See Table 2-11 in section 2.8.5 of this Chapter).	Objective D-VEG 5: Within Core, Priority, and General Management Areas, manage lotic and lentic riparian areas to maintain a component of perennial forbs with diverse species richness and maintain suitable cover. Manage associated upland habitat to promote adjacent cover relative to site potential to facilitate brood rearing (See Table 2-2).	Objective F-VEG 5: —	
Objective A-VEG 6: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG 6: —	Objective C-VEG 6: —	Objective D-VEG 6: Manage lentic riparian (i.e. seeps, springs, and wet meadows) to meet GRSG cover and	Objective D-VEG 6: Manage lentic riparian (e.g. seeps, springs, and wet meadows) to meet or be trending	Objective F-VEG 6: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			food objectives in PHMA and GHMA.	toward GRSG cover and food objectives (see Table 2-2) in Core, Priority, and General Management Areas.		
Integrated Invasive Species Management						
Objective V A-EG-ISM 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG-ISM 1: —	Objective C-VEG-ISM 1: —	Objective D-VEG-ISM 1: —	Objective E-VEG-ISM 1: Restore ecologically functioning sagebrush ecosystems in GRSG habitat already compromised by invasion. Restoration may include revegetating sites with native plants cultivated locally or locally adapted, non-native plant species where appropriate.	Objective F-VEG-ISM 1: Develop and implement methods for prioritizing and restoring sagebrush steppe invaded by nonnative plants.	
Objective A-VEG-ISM 2: —	Objective B-VEG-ISM 2: —	Objective C-VEG-ISM 2: —	Objective D-VEG-ISM 2: —	Objective E-VEG-ISM 2: Prevent the establishment of invasive species in uninvaded GRSG habitat. This will be achieved by conducting systematic and	Objective F-VEG-ISM 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				strategic detection surveys, data collection, and mapping of these areas and engaging in early response efforts if invasion occurs. This will be achieved by further developing federal and state partnerships and working with local groups, such as Weed Control Districts, Cooperative Weed Management Areas, and Conservation Districts. This is the highest priority for the State of Nevada.		
Objective A-VEG-ISM 3: —	Objective B-VEG-ISM 3: —	Objective C-VEG-ISM 3: —	Objective D-VEG-ISM 3: —	Objective E-VEG-ISM 3: Control invasive species infestations in GRSG habitat already compromised by invasion. Control techniques may include: biomass removal by means	Objective F-VEG-ISM 3: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				such as strategic and targeted grazing, mowing, or using herbicides. In addition, the state will continue to support research in the development of biological control agents and deploy emerging technologies in Nevada as they become available.		
Objective A-VEG-ISM 4: —	Objective B-VEG-ISM 4: —	Objective C-VEG-ISM 4: —	Objective D-VEG-ISM 4: —	Objective E-VEG-ISM 4: Monitor and adaptively manage to ensure effectiveness of efforts to prevent, control, and restore.	Objective F-VEG-ISM 4: —	
Climate Change						
Goal A-VEG-CC 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-VEG-CC 1: —	Goal C-VEG-CC 1: —	Goal D-VEG-CC 1: Use the landscape approach and promote landscape scale, ecosystem based actions to enhance resiliency and sustainability of GRSG habitat to climate stress.	Goal E-VEG-CC 1:—	Goal F-VEG-CC 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-VEG-CC 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG-CC 1: —	Objective C-VEG-CC 1: —	Objective D-VEG-CC 1: Focus treatments to restore connectivity and habitat in fragmented areas where natural recovery or restoration treatments have a moderate to high record of success and have a stable bio-climate forecast.	Objective E-VEG-CC 1: —	Objective F-VEG-CC 1: —	
Objective A-VEG-CC 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG-CC 2: —	Objective C-VEG-CC 2: —	Objective D-VEG-CC 2: Manage risks associated with landscape stressors of drought, invasive species, and wildfire exacerbated by climate change to maintain existing GRSG habitat.	Objective E-VEG-CC 2: —	Objective F-VEG-CC 2: —	
Drought						
Goal A-VEG-D 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-VEG-D 1: —	Goal C-VEG-D 1: —	Goal D-VEG-D 1: Manage sagebrush ecosystems in a manner that maintains adequate forage and water for	Goal E-VEG-D 1: —	Goal F-VEG-D 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			wildlife species during periods of drought.			
Objective A-VEG-D 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-VEG-D 1: —	Objective C-VEG-D 1: —	Objective D-VEG-D 1: Ensure authorized activities and uses do not result in degradation or net loss of PHMA during periods of drought through application of appropriate drought mitigation measures, such as ensuring adequate residual cover is available for nesting birds.	Objective E-VEG-D 1: —	Objective F-VEG-D 1: —	
Wild Horses and Burros						
Goal A- WHB 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-WHB 1: —	Goal C-WHB 1: —	Goal D-WHB 1: Manage active HMAs and HAs and WHBTs to achieve GRSG habitat objectives in PHMA and GHMA.	Goal E-WHB 1: Support, promote, and facilitate: • Full implementation of the Wild Free-Roaming Horses and Burros Act of 1971 as amended, including preserving and maintaining a	Goal F-WHB 1: Reduce AMLs within HMAs and WHBTs within occupied GRSG habitat by 25% to meet habitat objectives. —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				thriving natural ecological balance and multiple-use relationship, without alternation of its implementation by subsequent Congresses or Presidential administrations. • Maintaining healthy and diverse wild horse and burro populations in the State of Nevada in a manner that meets or is trending toward GRSG habitat objectives (see Table 2-2). • Focusing expenditures of appropriated funds on management of wild horses and burros on public lands over care in captivity. • Acknowledging that, if action is not		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				taken until herd health has become an issue, the range and water resources are likely to be in a highly degraded and potentially irreversible state. Non-active management (e.g., let nature take its course, wait until horse health or resource conditions are critical) is not acceptable management. • Recognizing that non-management is not acceptable, avoid negative or potentially irreversible consequences that will occur within the SGMA due to non-active management. Use all tools available and actively		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				manage wild horses and burros within HMAs and WHBTs.	
Goal A-WHB 2: —	Goal B-WHB 2: —	Goal C-WHB 2: —	Goal D-WHB 2: —	Goal E-WHB 2: As authorized in the Wild Free-Roaming Horses and Burros Act of 1971 achieve and maintain wild horses and burros at or below established AMLs within the SGMA and mange for zero horse populations in non-designated areas within the SGMA to reduce impacts on GRSG habitat.	Goal F-WHB 2: —
Goal A-WHB 3: —	Goal B-WHB 3: —	Goal C-WHB 3: —	Goal D-WHB 3: —	Goal E-WHB 3: Strive to resolve the conflicts between the Endangered Species Act and the implementation of the Wild and Free Roaming Horse and Burro Act to ensure maintenance of GRSG habitat.	Goal F-WHB 3: —

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Objective A-WHB 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-WHB 1: —	Objective C-WHB 1: —	Objective D-WHB 1: Establish or adjust AML within HMAs, HAs, and Forest Service WHBTs within PHMA and GHMA that consider the life cycle requirements for GRSG populations in terms of forage and nesting cover.	Objective E-WHB-1: Meet established AML levels in all HMAs and WHBTs in Core, Priority, and General Management Areas within 5 years.	Objective F-WHB 1: Reduce AMLs within HMAs, HAs, and WHBTs within occupied GRSG habitat by 25% to meet habitat objectives.
Objective A-WHB 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-WHB 2: Manage wild horse and burro population levels within established AMLs.	Objective C-WHB 2: Same as Alternative A.	Objective D-WHB 2: Manage wild horse and burro population levels in PHMA and GHMA within established AMLs to maintain or enhance GRSG habitat objectives.	Objective E-WHB 2: TMA-11.2: Evaluate conflicts with HMA designations within the State's Core, Priority and General Management Areas and modify LUPs to avoid negative impacts on GRSG.	Objective F-WHB 2: Reduce AMLs within HMAs, HAs, and WHBTs within occupied GRSG habitat by 25% to meet habitat objectives.
Objective A-WHB 3: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-WHB 3: Prioritize gathers in PHMA, unless removals are necessary in other areas to prevent catastrophic environmental issues, including herd health	Objective C-WHB 3: Same as Alternative A.	Objective D-WHB 3: Prioritize gathers in HMAs, HAs and WHBTs to meet established AMLs in PHMA and GHMA, unless removals are necessary in other areas to address	Objective E-WHB 3: Prioritize gathers for removal and population growth suppression techniques in HMAs, HAs, and WHBTs first within the State's Core, Priority	Objective F-WHB 3: Same as Alternative B.

Table 2-15
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
	impacts.		higher priority environmental issues, including herd health impacts.	and General Management Areas. Additional prioritization should be given for HMAs and WHBTs that are near AML or where a reduction would serve the most beneficial purpose. Proactively and adaptively manage herd sizes taking into consideration climate variability and other natural phenomena, similar to the restrictions placed on livestock managers.	
Fire and Fuels Management					
Goal A-FFM 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-FFM 1: —	Goal C-FFM 1: —	Goal D-FFM 1: Fire, pre-/post-fire suppression and fuels management would contribute to the protection of large, contiguous blocks of sagebrush habitat that support interconnecting GRSG populations.	Goal E-FFM 1: (Long-term Goal) Restore wildfire return intervals to within a spatial and temporal range of variability that supports sustainable populations of GRSG and other sagebrush obligate species.	Goal F-FFM 1: —

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Goal A-FFM 2: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-FFM 2: —	Goal C-FFM 2: —	Goal D-FFM 2: Pre-suppression activities would provide conservation actions that identify and prioritize GRSG habitats that are vulnerable to wildfire events and prescribe actions important for their protection.	Goal E-FFM 2: (Long-term Goal) Maintain an ecologically healthy and intact sagebrush ecosystem that is resistant to the invasion of non-native species and resilient after disturbances, such as wildfire.	Goal F-FFM 2: —	
Goal A-FFM 3: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-FFM 3: —	Goal C-FFM 3: —	Goal D-FFM 3: Pre-suppression and suppression efforts would reduce the size and impact of wildfires on GRSG and their habitat.	Goal E-FFM 3:—	Goal F-FFM 3: —	
Goal A-FFM 4: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-FFM 4: —	Goal C-FFM 4: —	Goal D-FFM 4: In PHMA and GHMA, design and implement emergency stabilization and rehabilitation treatments with an emphasis on restoring existing sagebrush ecosystems damaged by wildfires, including	Goal E-FFM 4:—	Goal F-FFM 4: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			the control of invasive species.			
Goal A-FFM 5: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-FFM 5: —	Goal C-FFM 5: —	Goal D-FFM 5: In PHMA, design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems and strategically and effectively reduce wildfire threats in the greatest area.	Goal E-FFM 5: Continue the construction of targeted, well designed fuel breaks and "green strips" to break up fuel continuity, reduce fire size, and create safe areas for fire suppression activities. Use the best adapted plant materials to revegetate green strips with fire resistant species. Fund and schedule regular maintenance activities of green strips as needed. Avoid locating fuel breaks in GRSG habitat unless no other options are available that will result in the same level of habitat protection.	Goal F-FFM 5: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-FFM 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-FFM 1: —	Objective C-FFM 1: —	Objective D-FFM 1: Prioritize post-fire treatments in PHMA and GHMA to maximize benefits to GRSG. Restoration focuses on restoring burned sagebrush areas with the appropriate cover and structure to support GRSG populations.	Objective E-FFM 1: TMA-4.4: Continue identifying and obtaining funding opportunities from federal, state, local, industry and land users dedicated to implementing prioritized habitat enhancement, restoration, and conservation activities.	Objective F-FFM 1: —	
Objective A-FFM 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-FFM 2: —	Objective C-FFM 2: —	Objective D-FFM 2: In PHMA and GHMA, minimize threats from invasive species.	Objective E-FFM 2: Prevent, Control, Restore, and Monitor invasive species within the SGMA.	Objective F-FFM 2: —	
Objective A-FFM 3: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-FFM 3: —	Objective C-FFM 3: —	Objective D-FFM 3: Protect post-fire treatments in PHMA and GHMA from subsequent wildfires.	Objective E-FFM 3: —	Objective F-FFM 3: —	
Objective A-FFM 4: No common objective across LUPs within the sub-region. See **Section**	Objective B-FFM 4: —	Objective C-FFM 4: —	Objective D-FFM 4: Retain, protect, and improve intact, unburned sagebrush communities within	Objective E-FFM 4: TMA-3.7: Within the State's Core, Priority and General Management Areas	Objective F-FFM 4: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
2.10.1.			burned areas.	eliminate the tactic of "burning out," including backfiring unless there are direct life safety threats.	
Objective A-FFM 5: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-FFM 5: —	Objective C-FFM 5: —	Objective D-FFM 5: Make progress toward desired future condition (DFC) in the low elevation shrub, mountain shrubs and pinyon and/or juniper vegetation types.	Objective E-FFM 5: TMA-2.2: Continue successful landscape level habitat assessments in, and in proximity to, the State's Core, Priority and General Management Areas to identify those habitat areas that are at the highest risk of wildland fire.	Objective F-FFM 5: —
Objective A-FFM 6: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-FFM 6: —	Objective C-FFM 6: —	Objective D-FFM 6: Design post-fuels management projects to ensure long-term persistence of seeded fuel breaks and green strips protecting native vegetation.	Objective E-FFM 6: TMA-2.8: Continue to successfully treat existing areas of invasive vegetative that pose a threat to within the State's Core, Priority and General Management Areas through the use of herbicides, fungicides or bacteria	Objective F-FFM 6: —

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				to control cheatgrass and medusahead infestations.		
Objective A-FFM 7: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-FFM 7: —	Objective C-FFM 7: —	Objective D-FFM 7: Provide for sufficient Unit staffing for initial attack response to wild land fires in PHMA and GHMA.	Objective E-FFM 7: TMA-3.4: Increase initial attack capability by training and equipping volunteer firefighters, as well as agricultural and other industry work forces for assignment during periods of high fire activity. Trained volunteers who are remotely located will serve as first responders when necessary and appropriate.	Objective F-FFM 7: —	
Objective A-FFM 8: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-FFM 8: —	Objective C-FFM 8: —	Objective D-FFM 8: Fire Management Plans reflect guidance for wildland fire suppression in PHMA and GHMA and take into consideration GRSG sub-population areas.	Objective E-FFM 8: TMA-3.8: Designate GRSG habitat in the SGMA as a "high priority value" for suppression resource allocation in the Geographical Area Coordination Centers and within	Objective F-FFM 8: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				the FEMA Fire Management Assistance Grant criteria.		
Livestock Grazing						
Goal A-LG 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-LG 1: —	Goal C-LG 1: —	Goal D-LG 1: Manage livestock grazing to maintain and/or enhance PHMA and GHMA to meet all life cycle requirements of the GRSG during permit administration.	Goal E-LG 1: Ensure that existing grazing permits maintain or enhance GRSG habitat. Utilize livestock grazing when appropriate as a management tool to improve GRSG habitat quantity, quality, or to reduce wildfire threats. Based on a comprehensive understanding of seasonal GRSG habitat requirements, and in conjunction with the need for flexibility in livestock operations, cooperatively make timely, seasonal range management decisions to meet vegetation management	Goal F-LG 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				objectives, including fuels reduction.		
Objective A-LG 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-LG 1: —	Objective C-LG 1: —	Objective D-LG 1: In PHMA and GHMA, manage for vegetation composition and structure consistent with ecological site potential to achieve GRSG seasonal habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter).	Objective E-LG 1: In GRSG habitat, manage for vegetation composition and structure that achieves GRSG seasonal habitat objectives (see Table 2-2), enhancing resilience and resistance based on the ability of the ecological site to respond to management. This objective recognizes spatial and temporal variations across seral stages.	Objective F -LG 1: —	
Objective A-LG 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-LG 2: —	Objective C-LG 2: —	Objective D-LG 2: Manage lentic and lotic riparian areas in PHMA and GHMA to maintain a component of perennial forbs with diverse species richness and	Objective: E-LG 2: In GRSG habitat, manage for vegetation composition and structure that achieves GRSG seasonal habitat objectives (see Table	Objective F-LG 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			maintain suitable cover; manage adjacent upland habitat to promote adjacent cover relative to site potential to facilitate brood rearing (see Table 2-11 in section 2.8.5 of this Chapter).	2-2), enhancing resilience and resistance based on the ability of the ecological site to respond to management. This objective recognizes spatial and temporal variations across seral stages.		
Objective A-LG 3: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B- LG 3: —	Objective C-LG 3: —	Objective D-LG 3: —	Objective E-LG 3: —	Objective F-LG 3: Encourage partners to monitor effects of retiring grazing permits in GRSG habitat.	
Recreation and Visitor Services						
Goal A-REC 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-REC 1: —	Goal C-REC 1: —	Goal D-REC 1: In PHMA and GHMA, manage recreation and visitor services in a manner that provides for quality visitor experience on public lands while minimizing human disturbance to GRSG and its life cycle requirements.	Goal E-REC 1: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic disturbances, including recreational activities, in order to stop the decline of GRSG populations. This will be achieved by the overriding	Goal F-REC 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				policy for all management actions within the SGMA to "avoid, minimize, and mitigate" impacts on GRSG habitat.		
Objective A-REC 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-REC 1: —	Objective REC 1: —	Objective D-REC 1: In PHMA and GHMA, manage commercial and noncommercial motorized and nonmotorized recreation uses on public lands in a manner compatible with the life-cycle requirements for GRSG.	Objective E-REC 1: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic disturbances, including commercial and noncommercial motorized and nonmotorized recreation uses on public lands in order to stop the decline of GRSG populations. This will be achieved by the overriding policy for all management actions within the SGMA to "avoid, minimize, and mitigate" impacts on GRSG habitat.	Objective F-REC 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Comprehensive Travel and Transportation Management (CTTM)					
Goal A-CTTM 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-CTTM 1: —	Goal C-CTTM 1: —	Goal D-CTTM 1: Manage travel and transportation in a manner that maintains healthy and intact PHMA and GHMA, minimizes disturbance to GRSG populations, and provides for reasonable access to public lands.	Goal E-CTTM 1: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic disturbances, including travel and transportation, in order to stop the decline of GRSG populations. This will be achieved by the overriding policy for all management actions within the SGMA to "avoid, minimize, and mitigate" impacts on GRSG habitat.	Goal F-CTTM 1: —
Objective A-CTTM 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-CTTM 1: —	Objective C-CTTM 1: N—	Objective D-CTTM 1: Prioritize and complete transportation planning in PHMA and GHMA that provides for reasonable access to public lands for administrative and	Objective E-CTTM 1: —	Objective F-CTTM 1: —

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			recreational purposes and that minimizes proliferation of user-created routes (roads, primitive roads, and trails).			
Objective A-CTTM 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-CTTM 2: —	Objective C-CTTM 2: —	Objective D-CTTM 2: Manage motorized travel on public lands by designating routes in PHMA and GHMA that are compatible with the life-cycle requirements for GRSG.	Objective E-CTTM 2: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic disturbances including motorized travel through the application of "avoid, minimize and mitigate", in the SGMA in order to stop the decline of GRSG populations.	Objective F-CTTM 2: —	
Lands and Realty						
Goal A-LR 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-LR 1: —	Goal C-LR 1: —	Goal D-LR 1: Manage land tenure adjustments and land uses to maintain or enhance PHMA and GHMA and connectivity.	Goal E-LR 1: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic disturbances, including land tenure	Goal F-LR 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				adjustments and land uses, in order to stop the decline of GRSG populations. This will be achieved by the overriding policy for all management actions within the SGMA to "avoid, minimize, and mitigate" impacts on GRSG habitat.		
Objective A-LR 1: —	Objective B-LR 1: —	Objective C-LR 1: —	Objective D-LR 1: —	Objective E-LR 1: *Avoid* - Eliminate conflicts by relocating disturbance activities outside of GRSG habitat in order to conserve GRSG and their habitat. Avoidance of a disturbance within GRSG habitat is the preferred option.	Objective F-LR 1: —	
Objective A-LR 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-LR 2: —	Objective C-LR 2: —	Objective D-LR 2: Manage and minimize effects of land use authorizations on PHMA and GHMA through grant	Objective E-LR 2: *Minimize* –If impacts are not avoided, the adverse effects will need to be both minimized and	Objective F-LR 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			stipulations and terms and conditions.	mitigated. Impacts will be minimized by modifying proposed actions and/or developing permit conditions to include measures that lessen the adverse effects to GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features (see Appendix D), such as reducing the disturbance footprint, seasonal use limitations, and co-location of structures. Minimization does not preclude the need for mitigation of a disturbance. Any disturbance in habitat within the SGMA will require both minimization and mitigation.		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-LR 3: —	Objective B-LR 3: —	Objective C-LR 3: —	Objective D-LR 3: —	Objective E -LR 3: *Mitigate* – If impacts are not avoided, after required minimization measures are specified, residual adverse effects on designated GRSG habitat are required to be offset by implementing mitigation actions that will result in replacement or enhancement of the GRSG habitat to balance the loss of habitat from the disturbance activity. This will be accomplished through the Conservation Credit System.	Objective F-LR 3: —	
Fluid Minerals						
Goal A-Lease-FM 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-Lease-FM 1: —	Goal C-Lease-FM 1: —	Goal D-Lease-FM 1: Manage the Federal Fluid Mineral Estate to meet National energy needs in a development	Goal E-Lease-FM 1: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic	Goal F-Lease-FM 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			framework that gives priority consideration to maintaining or increasing GRSG populations and distribution.	disturbances, including Fluid Minerals, in order to stop the decline of GRSG populations. Apply the hierarchical decision process of "avoid, minimize, mitigate" to achieve this goal.		
Objective A-Lease-FM 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-Lease-FM 1: —	Objective C-Lease-FM 1: Any oil, gas, geothermal activity will be conducted to maximize avoidance of impacts, based on evolving scientific knowledge of impacts.	Objective D-Lease-FM 1: —	Objective E-Lease-FM 1: *Avoid* - Eliminate conflicts by relocating disturbance activities, including Fluid Minerals, outside of GRSG habitat in order to conserve GRSG and their habitat. Avoidance of a disturbance within GRSG habitat is the preferred option.	Objective F-Lease-FM 1: —	
Objective A-Lease-FM 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-Lease-FM 2: —	Objective C-Lease-FM 2: N—	Objective D-Lease-FM 2: Conserve and maintain the quality and distribution of PHMA and GHMA through application of lease stipulations,	Objective E-Lease-FM 2: *Minimize* –If impacts from Fluid Minerals are not avoided, the adverse effects will need to be both minimized	Objective F-Lease-FM 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			COAs, and RDFs (consistent with applicable law) on existing and future leases.	and mitigated. Impacts will be minimized by modifying proposed actions and developing permit conditions with measures that lessen the adverse effects to GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features (see Appendix D), such as reducing the disturbance footprint, seasonal use limitations, and co-location of structures. Minimization does not preclude the need for mitigation of a disturbance. Any disturbance in habitat within the SGMA will require both minimization and mitigation.		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-Lease-FM 3: —	Objective B-Lease-FM 3: —	Objective C-Lease-FM 3: —	Objective D-Lease-FM 3: —	Objective E-Lease-FM 3: *Mitigate* – If impacts from Fluid Minerals are not avoided, after required minimization measures are specified, residual adverse effects on designated GRSG habitat are required to be offset by implementing mitigation actions that will result in replacement or enhancement of the GRSG habitat to balance the loss of habitat from the disturbance activity. This will be accomplished through the Conservation Credit System.	Objective F-Lease-FM 3: —	
Locatable Minerals						
Goal A-LOC 1: No common goal across LUPs within the sub-region. See **Section**	Goal B-LOC 1: —	Goal C-LOC 1: —	Goal D-LOC 1: Manage locatable mineral development to consider effects	Goal E-LOC 1: Within the SGMA, achieve no net unmitigated loss of	Goal F-LOC 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
2.10.1.			on PHMA.	GRSG habitat due to anthropogenic disturbances, including Locatable Minerals, in order to stop the decline of GRSG populations. Apply the hierarchical decision process of "avoid, minimize, mitigate" to achieve this goal.		
Objective A-LOC 1: —	Objective B-LOC 1: —	Objective C-LOC 1: —	Objective D-LOC 1: —	Objective E-LOC 1: *Avoid* - Eliminate conflicts by relocating disturbance activities, including Locatable Minerals, outside of GRSG habitat in order to conserve GRSG and their habitat. Avoidance of a disturbance within GRSG habitat is the preferred option.	Objective F-LOC 1: —	
Objective A-LOC 2: No common objective across LUPs within the sub-region. See **Section**	Objective B-LOC 2: —	Objective C-LOC 2: —	Objective D-LOC 2: Authorize Plans of Operation per 43 CFR 3809 regulations that	Objective E-LOC 2: *Minimize* –If impacts from Locatable Minerals (including Plans of Operation	Objective F-LOC 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
2.10.1.			minimize impacts on GRSG PHMA and GHMA.	per 43 CFR 3809 regulations) are not avoided, the adverse effects will need to be both minimized and mitigated. Impacts will be minimized by modifying proposed actions and/ or developing permit conditions to include measures that lessen the adverse effects to GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features (see Appendix D), such as reducing the disturbance footprint, seasonal use limitations, and co-location of structures. Minimization does not preclude the need for mitigation of a disturbance. Any disturbance in habitat		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				within the SGMA will require both minimization and mitigation.		
Objective A-LOC 3: —	Objective B-LOC 3: —	Objective C-LOC 3: —	Objective D-LOC 3: —	Objective LOC 3: *Mitigate* – If impacts from Locatable Minerals are not avoided, after required minimization measures are specified, residual adverse effects on designated GRSG habitat are required to be offset by implementing mitigation actions that will result in replacement or enhancement of the GRSG habitat to balance the loss of habitat from the disturbance activity. This will be accomplished through the Conservation Credit System.	Objective F-LOC 3: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-LOC 4: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-LOC 4: —	Objective C-LOC 4: —	Objective D-LOC 4: Provide reasonable access and development opportunity to claimants in PHMA, consistent with rights provided under the General Mining Act of 1872, as amended, and the need to conserve, maintain, or enhance PHMA through prevention of undue or unnecessary degradation for activities not reasonably incident to explore and develop the resource.	Objective E-LOC 4:—	Objective F-LOC 4: —	
Objective A-LOC 5: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-LOC 5: —	Objective C-LOC 5: —	Objective D-LOC 5: Manage disturbances associated with notice level activity in PHMA on a landscape basis by encouraging operators and claimants to consolidate	Objective E-LOC 5: Anthropogenic disturbances, including mineral exploration, are subject to the hierarchical decision process of avoid, minimize, and mitigate described	Objective F-LOC 5: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			exploration activities into exploration plans of operation to reduce proliferation of discrete mining notices per 43 CFR 3809.21(b).	above.		
Salable Minerals						
Goal A-SAL 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-SAL 1: —	Goal C-SAL 1: —	Goal D-SAL 1: Manage salable minerals to meet the State's demand for sand, gravel, and rock materials while providing for conservation and maintenance or enhancement of PHMA.	Goal E-SAL 1: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic disturbances, including Salable Minerals, in order to stop the decline of GRSG populations. Apply the hierarchical decision process of "avoid, minimize, mitigate" to achieve this goal.	Goal F-SAL 1: —	
Objective A-SAL 1: —	Objective B-SAL 1: —	Objective C-SAL 1: —	Objective D-SAL 1: —	Objective E-SAL 1: *Avoid* - Eliminate conflicts by relocating disturbance activities, including Salable Minerals, outside of	Objective F-SAL 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				GRSG habitat in order to conserve GRSG and their habitat. Avoidance of a disturbance within GRSG habitat is the preferred option.		
Objective A-SAL 2: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SAL 2: —	Objective C-SAL 2: —	Objective D-SAL 2: Minimize disturbances from salable mineral activities in PHMA and GHMA.	Objective E-SAL 2: *Minimize* – If impacts from Salable Minerals are not avoided, the adverse effects will need to be both minimized and mitigated. Impacts will be minimized by modifying proposed actions and developing permit conditions with measures that lessen the adverse effects on GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features (see Appendix D), such as reducing the disturbance footprint, seasonal	Objective F-SAL 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				use limitations, and co-location of structures. Minimization does not preclude the need for mitigation of a disturbance. Any disturbance in habitat within the SGMA will require both minimization and mitigation.		
Objective A-SAL 3: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SAL 3: —	Objective C-SAL 3: —	Objective D-SAL 3: Provide reasonable access and development opportunity to Federal Highway Administration, NDOT, and Counties and the public for existing mineral materials pits in PHMA and GHMA.	Objective E-SAL 3: TMA-15.1: —	Objective F-SAL 3: —	
Objective A-SAL 4: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-SAL 4: —	Objective C-SAL 4: —	Objective D-SAL 4: Conserve and maintain the quality and distribution of GRSG habitat through on-site and	Objective SAL 4: *Mitigate* – If impacts from Salable Minerals are not avoided, after required minimization	Objective F-SAL 4: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			off-site mitigation to achieve no net un-mitigated loss of PHMA or provide for the enhancement of PHMA within the WAFWA management zone.	measures are specified, residual adverse effects on designated GRSG habitat are required to be offset by implementing mitigation actions that will result in replacement or enhancement of the GRSG habitat to balance the loss of habitat from the disturbance activity. This will be accomplished through the Conservation Credit System.		
Nonenergy Leasable Minerals						
Goal A-NEL 1: No common goal across LUPs within the sub-region. See **Section 2.10.1**.	Goal B-NEL 1: —	Goal C-NEL 1: —	Goal D-NEL 1: Manage nonenergy leasable minerals to maintain or increase GRSG populations and distribution.	Goal E-NEL 1: Within the SGMA, achieve no net unmitigated loss of GRSG habitat due to anthropogenic disturbances, including Nonenergy Leasable Minerals, in order to stop the decline of GRSG	Goal F-NEL 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				populations. Apply the hierarchical decision process of "avoid, minimize, mitigate" to achieve this goal.		
Objective A-NEL 1: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-NEL 1: —	Objective C-NEL 1: —	Objective D-NEL 1: Conserve and maintain the quality and distribution of PHMA and GHMA.	Objective E-NFL 1: *Avoid* - Eliminate conflicts by relocating disturbance activities, including Nonenergy Leasable Minerals, outside of GRSG habitat in order to conserve GRSG and their habitat. Avoidance of a disturbance within GRSG habitat is the preferred option.	Objective F-NEL 1: —	
Objective A-NEL 2: —	Objective B-NEL 2: —	Objective C-NEL 2: —	Objective D-NEL 2: —	Objective E-NEL 2: *Minimize* –If impacts from Nonenergy Leasable Minerals (including Plans of Operation per 43 CFR 3809) are not avoided, the adverse effects will need to be both minimized	Objective F-NEL 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				and mitigated. Impacts will be minimized by modifying proposed actions and developing permit conditions with measures that lessen the adverse effects to GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features (see Appendix D), such as reducing the disturbance footprint, seasonal use limitations, and co-location of structures. Minimization does not preclude the need for mitigation of a disturbance. Any disturbance in habitat within the SGMA will require both minimization and mitigation.		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Objective A-NEL 3: —	Objective B-NEL 3: —	Objective C-NEL 3: —	Objective D-NEL 3: —	Objective E-NEL 3: *Mitigate* – If impacts from Nonenergy Leasable Minerals are not avoided, after required minimization measures are specified, residual adverse effects on designated GRSG habitat are required to be offset by implementing mitigation actions that will result in replacement or enhancement of the GRSG habitat to balance the loss of habitat from the disturbance activity. This will be accomplished through the Conservation Credit System.	Objective F-NEL 3: —	
Mineral Split Estate						
Goal A-MSE 1: No common goal across LUPs within the sub-region. See **Section**	Goal B-MSE 1: —	Goal C-MSE 1: —	Goal D-MSE 1: Manage federal split estate to provide for the conservation,	Goal E-MSE 1: Within the SGMA, achieve no net unmitigated loss of	Goal F-MSE 1: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
2.10.1.			maintenance and enhancement of PHMA and GHMA.	GRSG habitat due to anthropogenic disturbances, including federal split estate, in order to stop the decline of GRSG populations. Apply the hierarchical decision process of "avoid, minimize, mitigate" to achieve this goal.		
Objective A-MSE 1: —	Objective B-MSE 1: —	Objective C-MSE 1: —	Objective D-MSE 1: —	Objective E-MSE 1: *Avoid* - Eliminate conflicts by relocating disturbance activities, including federal split estate, outside of GRSG habitat in order to conserve GRSG and their habitat. Avoidance of a disturbance within GRSG habitat is the preferred option.	Objective F-MSE 1: —	
Objective A-MSE 2: No common objective across LUPs within the sub-region. See **Section**	Objective B-MSE 2: —	Objective C-MSE 2: —	Objective D-MSE 2: For federal mineral estate, minimize surface disturbance in PHMA and GHMA	Objective E-MSE 2: *Minimize* –If impacts from federal split estate are not avoided, the adverse	Objective F-MSE 2: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
2.10.1.			to the maximum extent practicable on private surface.	effects will need to be both minimized and mitigated. Impacts will be minimized by modifying proposed actions and developing permit conditions with measures that lessen the adverse effects to GRSG and their habitat. This will be accomplished through Site-Specific Consultation-Based Design Features (see Appendix D), such as reducing the disturbance footprint, seasonal use limitations, and co-location of structures. Minimization does not preclude the need for mitigation of a disturbance. Any disturbance in habitat within the SGMA will require both minimization and		

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				mitigation.		
Objective A-MSE 3: No common objective across LUPs within the sub-region. See **Section 2.10.1**.	Objective B-MSE 3: —	Objective C-MSE 3: —	Objective D-MSE 3: For federal surface estate, minimize surface disturbance in PHMA and GHMA to the maximum extent practicable consistent with use rights to the private mineral estate.	Objective E-MSE 3: see Objective E-MSE 2	Objective F-MSE 3: —	
Objective A-MSE 4: —	Objective B-MSE 4: —	Objective C-MSE 4: —	Objective D-MSE 4: —	Objective E-MSE 4: *Mitigate* – If impacts from federal split estate are not avoided, after required minimization measures are specified, residual adverse effects on designated GRSG habitat are required to be offset by implementing mitigation actions that will result in replacement or enhancement of the GRSG habitat to balance the loss of	Objective F-MSE 4: —	

Table 2-15
Description of Alternative Goals and Objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				habitat from the disturbance activity. This will be accomplished through the Conservation Credit System.		

*Alternative E was submitted by the State of Nevada's Governor's office and only covers land within the decision area in the State of Nevada. The State of California lands will follow Alternative A.

[1]The use of "**—**" indicates that there is no similar goal or objective, or that the similar goal or objective is reflected in another management action in the alternative.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Special Status Species (Greater Sage-Grouse)						
Action A-SSS 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS 1: —[1]	Action C-SSS 1: —	Action D-SSS 1: Identify seasonal habitat areas where an array of conservation actions can be completed to improve habitat conditions.	Action E-SSS 1: PMA-2.2: Identify and prioritize landscape-scale enhancement, restoration, fuel reduction, and mitigation projects based upon ecological site potential, state, and transition models, and other data that will contribute to decision making informed by science to increase rangeland resiliency prior to and following wildfire.	Action F-SSS 1: —	
Action A-SSS 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS 2: —	Action C-SSS 2: —	Action D-SSS 2: Work cooperatively to establish and maintain a GRSG telemetry database to help prioritize habitat conservation actions.	Action E-SSS 2: TMA-22.12: Satellite telemetry data shall be compiled and provided to the Nevada Sagebrush Ecosystem Technical Team for local plan revisions and updates, and coordinated statewide to determine seasonal habitats such as breeding, nesting,	Action F-SSS 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				brood rearing; movement patterns; and survival rates.		
Action A-SSS 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS 3: —	Action C-SSS 3 —	Action D-SSS 3: —	Action E-SSS 3: TMA 9.4: Address and eliminate conflicting regulations between the Migratory Bird Treaty Act and the ESA. Pursue additional take permits in excess of the current 2,000 bird limit from the USFWS for raven l. If necessary, pursue additional raven take in excess of the current 2,000 bird limit from the USFWS for raven control.	Action F-SSS 3: —	
Action A-SSS 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS 4: —	Action C-SSS 4: —	Action D-SSS 4: —	Action E-SSS 4: TMA 9.6: Monitor effects of predator control to determine causal relations with GRSG survivability and adapt control strategies accordingly.	Action F-SSS 4: —	
Action A-SSS 5: No common action	Action B-SSS 5: —	Action C-SSS 5: —	Action D-SSS 5: —	Action E-SSS 5: TMA 9.6: When downward	Action F-SSS 5:	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.				population trends and nesting success are detected in the SGMAs initiate predator surveys and identify responsible predator species to target and implement an effective predator control effort.	—	
Action A-SSS 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS 6: —	Action C-SSS 6: —	Action D-SSS 6: —	Action E-SSS 6: Implement a predator control program to reduce transient raven populations for nest protection and increased chick survival throughout the interim period while habitat enhancement and restoration projects become established. GRSG population, nest success and recruitment goals should be established within the SGMA.	Action F-SSS 6: —	
Action A-SSS 7: No common action across LUPs within	Action B-SSS 7: —	Action C-SSS 7: —	Action D-SSS 7: Implement the RDFs, consistent with	Action E-SSS 7: Site-Specific Consultation Based Design	Action F-SSS 7: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
the sub-region. See **Section 2.10.1**.			applicable law, in areas outside of mapped PHMA and GHMA where GRSG use has been observed or suspected, areas and habitats which may be necessary to maintain viability of GRSG, or where the activity would affect GRSG or their habitat in PHMA or GHMA.	Features apply to anthropogenic disturbances in the SGMA, including the Non-Habitat Management Category.		
Adaptive management						
Action A-SSS-AM 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 1: —	Action C-SSS-AM 1: —	Action D-SSS-AM 1: Establish a protocol for incorporating new science and changes over time, to update and keep State-wide habitat maps current.	Action E-SSS-AM 1: See Role of Sagebrush Ecosystem Technical Team.	Action F-SSS-AM 1: —	
Action A-SSS-AM 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 2: —	Action C-SSS-AM 2: —	Action D-SSS-AM 2: Continue to consult with the NDOW for all development or habitat restoration proposals in PHMA and GHMA. Also, coordinate with the Nevada Sagebrush	Action E-SSS-AM 2: *SETT Consultation* – Proposed anthropogenic disturbances within the SGMA will trigger consultation with the SETT for assessment of impacts on GRSG	Action F-SSS-AM 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			Ecosystem Council, the CDFW and tribes on projects proposed within sagebrush ecosystems	and their habitat and compliance with SEC and other relevant agency policies. SETT consultation is designed to provide a regulatory mechanism to ensure that GRSG conservation policies are applied consistently throughout the state and streamline the federal permitting process. Anthropogenic disturbance is defined here as any human-caused activity or action and/ or human-created physical structures that may have adverse impacts on GRSG or their habitat. The term anthropogenic disturbance and its associated conservation policies will include, but not limited to the following project		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				categories: mineral development and exploration and its associated infrastructure; renewable and non-renewable energy production, transmission, and distribution and its associated infrastructure; paved and unpaved roads and highways; cell phone towers; landfills; pipelines; residential and commercial subdivisions; special use permits; ROW applications; and other large-scale infrastructure development. Livestock operations and agricultural activities and infrastructure related to small-scale ranch and farm businesses (e.g. water troughs, and fences) are not		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				included in this definition.	
Action A-SSS-AM 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 3: —	Action C-SSS-AM 3: —	Action D-SSS-AM 3: Identify off-site mitigation areas within GHMA with reasonable potential to achieve vegetation objectives and meet the seasonal habitat needs of GRSG. These are areas where mitigation would occur for application of off-site mitigation actions.	Action E-SSS-AM 3: Options for mitigation will be identified in the State's Strategic Action Plan. The State's Strategic Action Plan will identify prioritized areas on public and private lands to implement a landscape scale restoration effort. This will spatially identify where the primary threats to GRSG habitat are located throughout the state and provide management guidance for how to ameliorate these based on local area conditions and ecological site descriptions. The prioritization includes efforts to use mitigation funding in areas where GRSG	Action F-SSS-AM 3: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				will derive the most benefit, even if those areas are not adjacent to or in the vicinity of impacted populations. This Strategic Action Plan will be updated at least every 5 years to reflect improvements in understanding and technology for mitigation activities.		
Action A-SSS-AM 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 4: —	Action C-SSS-AM 4: —	Action D-SSS-AM 4: Natural Resources Conservation Service (NRCS), BLM, and Forest Service will engage private landholders to improve habitat conditions.	Action E-SSS-AM 4: —	Action F-SSS-AM 4: —	
Action A-SSS-AM 5: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 5: —	Action C-SSS-AM 5: —	Action D-SSS-AM 5: —	Action E-SSS-AM 5: Through the Nevada Sagebrush Ecosystem Council, and its Nevada Sagebrush Ecosystem Technical Team, utilizing the avoid, minimize, and mitigate strategy, the	Action F-SSS-AM 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				following will occur: • Develop consistent monitoring protocols and methods to be used across all land jurisdictions and agencies. Compile all project monitoring data into one GRSG database managed by the Nevada Sagebrush Ecosystem Technical Team for use in adaptive management and reporting. • Monitoring of mitigation sites must be included in all plans, with consistent protocols to assess specific metrics and determine trends for habitat quantity/quality and GRSG populations. • All statewide monitoring data will		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				be accessible to the Nevada Sagebrush Technical Team through a centralized geographic database. The team will compile annual reports of habitat trends. All monitoring plans must include specific objectives and detailed procedures. • Monitor GRSG activity and demographics with annual assessments and intensive levels of investigation to answer questions about the effectiveness of conservation strategies in terms of measured responses of key demographic parameters (e.g. nest success, chick survival, and		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				movement) associated with sites where management activities have been implemented. • Conduct annual lek counts across most Population Management Units. Train volunteers who provide additional manpower in assisting with additional lek counts. Volunteers must be qualified by attending a day-long training session that includes actual field training each year. • Population demographic data is determined from the GRSG harvest. Hunters shall deposit one wing from each bird harvested in wing barrels located on primary hunting		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				access roads, check stations, or to be delivered to a NDOW Field or Regional Office. Wings shall be separated by geographic locations (county or hunt area). Wings shall be used to identify sex, age, nest success, and number of chicks per hen. • Monitor harvest through the use of the 10% Hunter Questionnaire that randomly polls license holders and through the collection of GRSG wings from hunter harvested birds. • Regulate harvest by season length and bag limit as set forth by the Nevada Board of Wildlife Commissioners		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				and, consulting recommendations made by the NDOW. • In areas that are closed to hunting, wing data are not available for monitoring population demographics such as the number of chicks per hen. For these areas, conduct brood counts along established routes. Brood surveys shall be conducted mid-summer when GRSG are concentrated on meadow habitats. Established brood count routes shall be surveyed to record average brood size and the number of chicks per hen. • Satellite telemetry data shall be		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				compiled and provided to the Nevada Sagebrush Ecosystem Technical Team for local plan revisions and updates, and coordinated statewide to determine seasonal habitats such as breeding, nesting, brood rearing; movement patterns; and survival rates. • Appropriate state and federal agencies will continue to coordinate with the U.S. Geological Survey, Biological Resources Division and associated National Wildlife Health Center to conduct investigations into the effects of West Nile virus and other disease pathogens on GRSG.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-SSS-AM 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 6: —	Action C-SSS-AM 6: —	Action D-SSS-AM 6: —	Action E-SSS-AM 6: When population, nesting success, and recruitment goals are not met, implement an effective predator control effort for ravens, badgers, and coyotes as needed, based on biological assessments appropriate to local conditions. Conduct predator control to coincide with the life stage impacted by predation. The SGMA should be prioritized for predator control. If the SGMA meets or exceeds the reproductive and population objectives, move predator control to the next lower SGMA priority.	Action F-SSS-AM 6: —	
Action A-SSS-AM 7: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 7: —	Action C-SSS-AM 7: —	Action D-SSS-AM 7: The agencies would coordinate with the Nevada Sagebrush Technical Team on all proposed	Action E-SSS-AM 7: See SETT Consultation (Action E-SSS-AM 2).	Action F-SSS-AM 7: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			disturbances within the state of Nevada to meet the mutual goal of no unmitigated loss.			
Action A-SSS-AM 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-AM 8: —	Action C-SSS-AM 8: —	Action D-SSS-AM 8: The BLM and Forest Service would coordinate with the Nevada Sagebrush Technical Team on the application of the Conservation Credit System (once it is established) for mitigation of activities that disturb GRSG habitat within Nevada where the application of the mitigation would occur on or the credit would be applied to disturbance on Public or National Forest Lands.	Action E-SSS-AM 8: Consult with the SETT per Action E-SSS-AM 2.	Action F-SSS-AM 8: —	
Action A-SSS-AM 9: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-AM 9: —	Action C-SSS-AM 9: —	Action D-SSS-AM 9: GRSG habitat categorization and use management boundaries would be evaluated and	Action E-SSS-AM 9: GRSG management categories must be evaluated every 3-5 years, based on new or improved spatial	Action F-SSS-AM 9: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			adjusted based on continuing inventory and monitoring results every five years. Adjustments up to plus or minus ten percent of the mapped habitat within the population management zone would be made without further analysis.	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.		
Climate Change						
Action A-SSS-CC 1: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-CC 1: —	Action C-SSS-CC 1: —	Action D-SSS-CC 1: As climate change data become available through REAs or other ecological studies, identify areas of unfragmented GRSG habitat and key habitat linkages that provide the life-cycle and genetic transfer needs for GRSG. Manage the identified areas as PHMA.	Action E-SSS-CC 1: —	Action F-SSS-CC 1: —	
Action A-SSS-CC 2: No common action across LUPs within	Action B-SSS-CC 2: —	Action C-SSS-CC 2: —	Action D-SSS-CC 2: Work cooperatively with multiple agencies	Action E-SSS-CC 2: —	Action F-SSS-CC 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
the sub-region. See **Section 2.10.1.**			and stakeholders to establish and maintain a network of climate monitoring sites and stations.		
Disease					
Action A-SSS-DIS 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-DIS 1: —	Action C-SSS-DIS 1: —	Action D-SSS-DIS 1: When developing or modifying water developments on public lands in PHMA and GHMA, use RDFs consistent with applicable law to mitigate potential impacts from West Nile virus.	Action E-SSS-DIS 1: When developing or modifying water developments on BLM-administered lands in the SGMA, use Site-Specific Consultation-Based Design Features to mitigate potential impacts from West Nile virus.	Action F-SSS-DIS 1: —
Mitigation					
Action A-SSS-MIT 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SSS-MIT 1: No similar action	Action C-SSS-MIT 1: No similar action	Action D-SSS-MIT 1: —	Action E-SSS-MIT 1: PMA-3: TBD	Action F-SSS-MIT 1: —
Action A-SSS-MIT 2: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-MIT 2: —	Action C-SSS-MIT 2: —	Action D-SSS-MIT 2: —	Action E-SSS-MIT 2: PMA-3.1: TBD	Action F-SSS-MIT 2: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-SSS-MIT 3: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-MIT 3: —	Action C-SSS-MIT 3: —	Action D-SSS-MIT 3: —	Action E-SSS-MIT 3: PMA-3.2: TBD	Action F-SSS-MIT 3: —	
Action A-SSS-MIT 4: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-MIT 4: —	Action C-SSS-MIT 4: —	Action D-SSS-MIT 4: —	Action E-SSS-MIT 4: PMA-3.3: TBD	Action F-SSS-MIT 4: —	
Action A-SSS-MIT 5: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-MIT 5: —	Action C-SSS-MIT 5: —	Action D-SSS-MIT 5: —	Action E-SSS-MIT 5: PMA-3.4: TBD	Action F-SSS-MIT 5: —	
Action A-SSS-MIT 6: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-MIT 6: —	Action C-SSS-MIT 6: —	Action D-SSS-MIT 6: —	Action E-SSS-MIT 6: PMA-3.5: TBD	Action F-SSS-MIT 6: —	
Action A-SSS-MIT 7: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-MIT 7: —	Action C-SSS-MIT 7: —	Action D-SSS-MIT 7: —	Action E-SSS-MIT 7: MA-3.6: TBD	Action F-SSS-MIT 7: —	
Action A-SSS-MIT 8: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-MIT 8: —	Action C-SSS-MIT 8: —	Action D-SSS-MIT 8: —	Action E-SSS-MIT 8: TMA-21: TBD	Action F-SSS-MIT 8: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Administrative Collaboration and decision making					
Action A-SSS-ACDM 1: —	Action B-SSS-ACDM 1: —	Action C-SSS-ACDM 1: —	Action D-SSS-ACDM 1: —	Action E-SSS-ACDM 1: *SETT Consultation* – Proposed anthropogenic disturbances within the SGMA will trigger consultation with the SETT for assessment of impacts on GRSG and their habitat and compliance with SEC and other relevant agency policies. SETT consultation is designed to provide a regulatory mechanism to ensure that GRSG conservation policies are applied consistently throughout the state and streamline the federal permitting process. This is the mechanism to apply the hierarchical "avoid, minimize, mitigate" policy described below. Anthropogenic disturbance is defined	Action F-SSS-ACDM 1: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				here as any human-caused activity or action or human-created physical structures that may have adverse impacts on GRSG and their habitat. The term anthropogenic disturbance and its associated conservation policies will include, but not limited to the following project categories: mineral development and exploration and its associated infrastructure; renewable and non-renewable energy production, transmission, and distribution and its associated infrastructure; paved and unpaved roads and highways; cell phone towers; landfills; pipelines; residential and		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				commercial subdivisions; special use permits; right-of-way applications; and other large-scale infrastructure development. Livestock operations and agricultural activities and infrastructure related to small-scale ranch and farm businesses (e.g. water troughs and fences) are not included in this definition, though Appendix D (Site-Specific Consultation-Based Design Features) addresses how to minimize impacts on GRSG and their habitat from these activities.		
Action A-SSS-ACDM 2: —	Action B-SSS-ACDM 2: —	Action C-SSS-ACDM 2: —	Action D-SSS-ACDM 2: —	Action E-SSS-ACDM 2: Determination of GRSG habitat will be based on the USGS Habitat Suitability Map (Figure XX). At the onset of a	Action F-SSS-ACDM 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				proposed project, habitat evaluations or "ground-truthing" of the project site and its surrounding areas shall be conducted by a qualified biologist with GRSG experience using methods as defined in Stiver et al (2010) to confirm habitat type. Evaluations can be conducted by the SETT or NDOW at the request of the project proponent.		
Action A-SSS-ACDM 3: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-ACDM 3: —	Action C-SSS-ACDM 3: —	Action D-SSS-ACDM 3: —	Action E-SSS-ACDM 3: *Avoid* – Project proponents must first seek to avoid disturbance in GRSG habitat within the SGMA. If the project is located entirely outside of habitat, but within the SGMA it will still be analyzed for indirect effects, such as noise and visual impacts. A project will only be	Action F-SSS-ACDM 3: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				considered to have avoided impacts if it is physically located in non-habitat and it is determined to have no indirect impacts effecting designated habitat within the SGMA. If this is determined, no further consultation with the SETT is required. Anthropogenic disturbances should be avoided within the SGMA. If avoidance is not possible, the project proponent must demonstrate why it is not possible in order for the SETT to consider minimization and mitigation alternatives. The process to demonstrate that avoidance is not possible (the "avoid process") is determined by four		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				management categories, which consider both GRSG breeding population density and habitat suitability within the SGMA. The burden of proof to demonstrate that avoidance is not possible within the SGMA will be on the project proponent and will require the project proponent to demonstrate the specified criteria listed below as determined by the management categories the proposed project is located in. Exemptions to the avoid policy will be granted if all the criteria below is met. A higher burden of proof is set for project proponents to demonstrate that avoidance is not		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				possible in areas that have higher densities of GRSG populations and suitable habitat. *Core Management Areas* Project proponents must seek to avoid disturbances within the SGMA. If the project proponent wishes to demonstrate that avoidance is not possible within these areas, exemptions will be granted to this restriction as part of the SETT consultation. The project proponent must demonstrate that all of the following criteria listed below are met as part of the SETT consultation process in order to be granted an exemption: • Demonstrate that	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				the project cannot be reasonably accomplished elsewhere – the purpose and need of the project could not be accomplished in an alternative location. • Demonstrate that the individual and cumulative impacts of the project would not result in habitat fragmentation or other impacts that would cause GRSG populations to decline through consultation with the SETT. • Demonstrate that GRSG population trends within the PMU are stable or increasing over a 10-year rolling average. • Demonstrate that project infrastructure will		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				be co-located with existing disturbances to the greatest extent possible. • Develop Site-Specific Consultation-Based Design Features to minimize impacts through consultation with the SETT. • Mitigate unavoidable impacts through compensatory mitigation via the Conservation Credit System. Mitigation rates will be higher for disturbances within this category. *Priority Management Areas* Management in these areas provide more flexibility to project proponents, though avoidance in these	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				areas is still the preferred option and project proponents are encouraged to develop outside of these areas whenever possible. Anthropogenic disturbances will be permitted in these areas if the criteria listed below are met as part of the SETT consultation process: • Demonstrate that the project cannot be reasonably or feasibly accomplished elsewhere – the purpose and need of the project could not be accomplished in an alternative location. • Demonstrate that project infrastructure will be co-located with existing disturbances to the greatest extent		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				possible. If co-location is not possible, siting should reduce individual and cumulative impacts on GRSG and their habitat. • Demonstrate that the project should not result in unnecessary and undue habitat fragmentation that may cause declines in GRSG populations within the PMU through consultation with the SETT. • Develop Site-Specific Consultation-Based Design Features to minimize impacts through consultation with the SETT. • Mitigate for unavoidable impacts through compensatory		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				mitigation via the Conservation Credit System. *General Management Areas* Management of these areas provides the greatest flexibility to project proponents. Anthropogenic disturbances will be permitted in these areas if the criteria listed below are met as part of the SETT consultation process: • Demonstrate that the project cannot be reasonably or feasibly accomplished elsewhere – the purpose and need of the project could not be accomplished in an alternative location. • Demonstrate that project infrastructure will be co-located with		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				existing disturbances to the greatest extent possible. • Develop Site-Specific Consultation-Based Design Features to minimize impacts through consultation with the SETT. • Mitigate for unavoidable impacts through compensatory mitigation via the Conservation Credit System. *Non-Habitat Management Areas* All proposed projects within the SGMA, including in non-habitat within the SGMA must conduct habitat evaluation or ground-truthing to confirm presence or absence of GRSG habitat. If areas are		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				confirmed by habitat evaluations to be non-habitat, an analysis for indirect impacts on GRSG within their habitat in the SGMA will be required to determine if Site-Specific Consultation-Based Design Features to minimize impacts and compensatory mitigation are necessary as part of the SETT consultation process.		
Action A-SSS-ACDM 4: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-ACDM 4: —	Action C-SSS-ACDM 4: —	Action D-SSS-ACDM 4: —	Action E-SSS-ACDM 4: ***Minimize*** - If a project cannot avoid adverse effects (direct or indirect) to GRSG habitat within the SGMA, the project proponent will be required to implement Site-Specific Consultation-Based Design Features that minimize the project's	Action F-SSS-ACDM 4: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				adverse effects on GRSG habitat. Minimization will include consultation with the SETT to determine which Site-Specific Consultation-Based Design Features would be most applicable to the project when considering site conditions and types of disturbance. Some general examples could include: reducing the footprint of the project, siting infrastructure in previously disturbed locations with low habitat values, noise restrictions near leks during breeding season, and washing vehicles and equipment to reduce the spread of invasive species. Land use specific Site-Specific Consultation-Based Design Features are		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				included in Appendix D. A list of Site-Specific Consultation-Based Design Features for the project must be specified and agreed upon by the SETT and project proponent prior to the start of the project and will become part of the permit/ contract requirements issued for the project. The project proponent will be required to implement, maintain, and monitor the RDFs (consistent with applicable law) in good working order throughout the duration of the project.		
Action A-SSS-ACDM 5: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-ACDM 5: —	Action C-SSS-ACDM 5: —	Action D-SSS-ACDM 5: —	Action E-SSS-ACDM 5: ***Mitigate*** – Mitigation involves the successful restoration or	Action F-SSS-ACDM 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				enhancement of GRSG habitat and is designed to offset the negative impacts caused by an anthropogenic disturbance. Mitigation will be required for all anthropogenic disturbances impacting GRSG habitat within the SGMA. Mitigation requirements will be determined by the State's Conservation Credit System.		
Action A-SSS-ACDM 6: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-ACDM 6: —	Action C-SSS-ACDM 6: —	Action D-SSS-ACDM 6: —	Action E-SSS-ACDM 6: Through the Nevada Sagebrush Ecosystem Council, a Governor-appointed, broad spectrum stakeholder forum, the following will occur: • Review and approval of a process to coordinate	Action F-SSS-ACDM 6: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				development activities in the SGMA. • Provision of a forum for participation from industry, state and federal resource management agencies, and the general public. • Oversight of the Nevada Conservation Credit System • Development, review and approval of region-wide policies - in a transparent, consistent process - that respond to sagebrush ecosystem threats. • Setting and clarifying policies and management criteria for the SGMA and establishment of well-defined decision thresholds		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				for threat assessments and mitigation (regulatory process). • Revision of the SGMA through field verifications and recommendations from the Nevada Sagebrush Ecosystem Technical Team based on the best available science. • Establishment of policies for the identification and prioritization of landscape-scale enhancement, restoration, fuel reduction, and mitigation projects based upon ecological site potential, state and transition models, and other data that will contribute to decision making informed by science		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				to increase resiliency. • Secure and consolidated funding and the direction of major expenditures for GRSG conservation. • Facilitation and the resolution of conflicts between industry, land owners, and resource agencies when there is disagreement regarding GRSG management. • Receipt and approval of an annual report from the Nevada Sagebrush Ecosystem Technical Team that includes compiled and summarized data on development, enhancement, and restoration		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				activities in the SGMA, GRSG population trends, and Nevada Sagebrush Ecosystem Conservation Credit System (PMA-3) progress. The Nevada Sagebrush Ecosystem Council will submit the annual report to the Governor, USFWS, BLM, Forest Service, local and tribal governments and the general public. • Development of standards and protocols to propose to the BLM and Forest Service in order to facilitate expedited NEPA review for restoration activities in the SGMA. • Encourage and		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				facilitate land management education and training for all SGMA user groups.		
Action A-SSS-ACDM 7: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-ACDM 7: —	Action C-SSS-ACDM 7: —	Action D-SSS-ACDM 7: —	Action E-SSS-ACDM 7: The Nevada Sagebrush Ecosystem Technical Team, a multidisciplinary team with representatives from the Nevada Department of Agriculture, the Nevada Department of Conservation and Natural Resources Divisions of Forestry and State Lands, and the NDOW will: • In accordance with the Nevada Sagebrush Ecosystem Council's policy, oversee administration and operation of the Nevada Sagebrush Ecosystem Conservation	Action F-SSS-ACDM 7:	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				Credit System (PMA-3). • Identify and prioritize landscape-scale enhancement, restoration, fuel reduction, and mitigation projects based upon ecological site potential, state and transition models, and other data that will contribute to decision making informed by science to increase rangeland resiliency prior to and following wildfire. • Foster and maintain collaborative processes with State, local and Federal agencies to expedite permitting. As deemed appropriate by the Nevada Sagebrush Ecosystem Council,		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				decision-making will be extended to the Nevada Sagebrush Ecosystem Technical Team such that permitting will be expedited rather than extended by an added layer of bureaucracy. • Provide consultation for project proponents who want to conduct activities in the SGMA to incorporate "avoid, minimize, and mitigate "practices into project designs. Project applicants will have the opportunity to conduct "ground-truthing" for the presence or absence of habitat. • Assist the BLM and Forest Service as appropriate to evaluate the		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				cumulative effects of individual small projects (less than five acres) to avoid exceeding a tolerable level of disturbance in the SGMA and to determine if additional mitigation is required. • Acquire data to refine the habitat categories in the SGMA using best available science. • Solicit grants and private contributions for sagebrush ecosystem conservation and restoration projects. • Establish a repository to maintain the inventory of development and mitigation projects, population data,		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				and monitoring results. • Compile and summarize data annually, and submit an annual progress report to the Nevada Sagebrush Ecosystem Council. • Conduct regular adaptive management evaluations to make management and policy recommendations to the Nevada Sagebrush Ecosystem Council. • Engage and coordinate activities with Local Area Working Groups through existing State Conservation Districts. Coordinate continued engagement of proven collaborative successes by charging LAWGs with		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				responsibilities such as a) developing and implementing site-specific plans to accomplish enhancement and restoration projects on federal lands that are identified by the Nevada Sagebrush Ecosystem Council as areas of high importance to GRSG; b) updating SGMA maps; c) monitoring; d) identifying potential habitat enhancement and restoration projects; and e) other tasks where local, site-specific expertise can provide added value.		
Action A-SSS-ACDM 8: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-ACDM 8: —	Action C-SSS-ACDM 8: —	Action D-SSS-ACDM 8: —	Action E-SSS-ACDM 8: —	Action F-SSS-ACDM 8: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Opportunities for Proactive Measures					
Action A-SSS-OPM 1: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-OPM 1	Action C-SSS-OPM 1—	Action D-SSS-OPM 1: Identify seasonal habitat areas where an array of conservation actions can be completed to improve habitat conditions.	Action E-SSS-OPM 1: See Role of Sagebrush Ecosystem Technical Team (Action E-SSS-ACDM 7).	Action F-SSS-OPM 1: —
Action A-SSS-OPM 2: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-OPM 2: —	Action C-SSS-OPM 2: —	Action D-SSS-OPM 2: Consider the use of a GRSG telemetry database to help prioritize habitat conservation actions.	Action E-SSS-OPM 2: See Role of Sagebrush Ecosystem Technical Team (Action E-SSS-ACDM 7). TMA-22.12: Satellite telemetry data shall be compiled and provided to the Nevada Sagebrush Ecosystem Technical Team for local plan revisions and updates, and coordinated statewide to determine seasonal habitats such as breeding, nesting, brood rearing; movement patterns; and survival rates.	Action F-SSS-OPM 2: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-SSS-OPM 3: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-OPM 3: —	Action C-SSS-OPM 3: —	Action D-SSS-OPM 3: Establish a protocol for incorporating new science and changes over time, to update and keep State-wide habitat maps current.	Action E-SSS-OPM 3: Establish a protocol for incorporating new science and changes over time, to update and keep state-wide habitat maps current.	Action F-SSS-OPM 3: —	
Action A-SSS-OPM 4: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-OPM 4: —	Action C-SSS-OPM 4: —	Action D-SSS-OPM 4: Continue to consult with the NDOW for all development or habitat restoration proposals in PHMA and GHMA. Also, coordinate with the Nevada Sagebrush Ecosystem Council and the CDFW on projects proposed within sagebrush ecosystems.	Action E-SSS-OPM 4: See SETT Consultation (Action E-SSS-ACDM 1)	Action F-SSS-OPM 4: —	
Action A-SSS-OPM 5: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-SSS-OPM 5: —	Action C-SSS-OPM 5: —	Action D-SSS-OPM 5: Identify areas within GHMA where off-site mitigation should occur to ensure GRSG habitat goals are met. When providing guidance to applicants, ensure project proponents	Action E-SSS-OPM 5: Options for mitigation will be identified in the State's Strategic Action Plan. The State's Strategic Action Plan will identify prioritized areas on public and private lands to	Action F-SSS-OPM 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			that may be contributing to potential mitigation are aware of such areas.	implement a landscape scale restoration effort. This will spatially identify where the primary threats to GRSG habitat are located throughout the state and provide management guidance for how to ameliorate these based on local area conditions and ecological site descriptions. The prioritization includes efforts to use mitigation funding in areas where GRSG will derive the most benefit, even if those areas are not adjacent to or in the vicinity of impacted populations. This Strategic Action Plan will be updated at least every 5 years to reflect improvements in understanding and technology for mitigation activities.		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Habitat Restoration/Vegetation Management					
Action A-VEG 1: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 1: —	Action C-VEG 1: —	Action D-VEG 1: In PHMA and GHMA, coordinate, plan, design, and implement vegetation treatments (e.g., juniper removal, fuels treatments, and green stripping) and associated effectiveness monitoring between Resources, Vegetation Management, Emergency Stabilization, and Burned Area Rehabilitation programs to: • Promote the maintenance of large intact sagebrush communities; • Limit the expansion or dominance of invasive species and noxious weeds, including conifers, cheatgrass and	Action E-VEG 1: Identify and prioritize landscape-scale enhancement, restoration, fuel reduction, and mitigation projects based upon ecological site potential, state and transition models, and other data that will contribute to decision making informed by science to increase rangeland resiliency prior to and following wildfire.	Action F-VEG 1: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			medusa head; • Maintain or improve soil site stability, hydrologic function, and biological integrity; and • Enhance the native plant community with appropriate shrub, grass, and forb composition identified in the applicable Ecological Site Description (ESD) where available.			
Action A-VEG 2: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 2: Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG (Meinke et al. 2009). Prioritize restoration in seasonal habitats	Action C-VEG 2: Same as Alternative A.	Action D-VEG 2: Utilize BLM and Forest Service agency GRSG habitat maps to prioritize habitat restoration projects (see Table 2-11 in section 2.8.5 of this Chapter) with emphasis in PHMA, and to connect seasonal ranges regardless of habitat designation.	Action E-VEG 2: Restore ecologically functioning sagebrush ecosystems in GRSG habitat already compromised by invasion. Restoration may include revegetating sites with native plants cultivated locally or locally adapted, non-native plant species where appropriate. Control of invasive	Action F-VEG 2: Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG (Meinke et al. 2009).	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	that are thought to be limiting GRSG distribution and/or abundance.		Habitat restoration would include but is not limited to: • Restoration of sagebrush canopy in areas within GRSG nesting and brood-rearing habitat. • Re-establishment of perennial grasses and native forbs in areas within GRSG nesting, early and late-brood rearing habitat. • Reduce or remove pinyon and/or juniper in areas to enhance seasonal range connectivity, improve security at leks, and to maintain sagebrush canopy and understory integrity in nesting and brood-rearing habitats. • Restoration of all GRSG habitat objectives in areas affected by wildfire	species must be accompanied by ecosystem restoration. • Ecological site descriptions and associated state and transition models will be used to identify target areas for resiliency enhancement and/ or restoration. Maintaining and/or enhancing resilience should be given top priority. In the Great Basin sagebrush-bunchgrass communities, invasion resistance and successional resilience following disturbance are functions of a healthy perennial bunchgrass component. Therefore a combination of active and passive	Prioritize restoration in seasonal habitats that are thought to be limiting GRSG distribution and/or abundance and where factors causing degradation have already been addressed (e.g., changes in livestock management).	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			and the continuing cheat-grass fire cycle. • Priority would be on restoration areas that have not crossed an ecological threshold.	management will be required to ensure this functionality. Areas that are in an invaded state that will likely transition to an annual grass monoculture if a disturbance occurs and are located within or near GRSG habitat should be prioritized for restoration efforts to increase resistance and resilience. TMA-7: Initiate landscape level treatments in the SGMA to reverse the effects of Pinyon and/or Juniper encroachment and restore healthy, resilient sagebrush ecosystems. (2012 Plan) TMA-7.1: Inventory and prioritize areas for treatment of		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				Phase I and Phase II encroachment in the SGMA to restore habitat resiliency, reduce avian predator perches, and increase forb and grass cover. (2012 Plan)		
Action A-VEG 3: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 3: Include GRSG habitat parameters as defined by Connelly et al. (2000a), Hagen et al. (2007) or if available, state GRSG plans and appropriate local information in habitat restoration objectives. Make meeting these objectives within PHMA the highest restoration priority.	Action C-VEG 3: Same as Alternative A.	Action D-VEG 3: Incorporate GRSG habitat objectives (as described in Table 2-11 in section 2.8.5 of this Chapter) in the design of habitat restoration projects in PHMA and GHMA.	Action E-VEG 3: Incorporate GRSG habitat objectives as described in Table 2-2 in the design of habitat restoration projects in PHMA and GHMA.	Action F-VEG 3: Include GRSG habitat objectives in habitat restoration. Make meeting these objectives within PHMA and GHMA the highest restoration priority.	
Action A-VEG 4: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 4: —	Action C-VEG 4: Composition, function, and structure of native vegetation communities will be consistent with the reference state of the	Action D-VEG 4: —	Action E-VEG 4: —	Action F-VEG 4: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
		appropriate ESD and will provide for healthy, resilient, and recovering GRSG habitat components.				
Action A-VEG 5: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 5: Require use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success (Richards et al. 1998). Where probability of success or adapted seed availability is low, nonnative seeds may be used as long as they support GRSG habitat objectives (Pyke 2011).	Action C-VEG 5: Seed local native ecotypes in areas of more intensive disturbance.	Action D-VEG 5: In order to determine effectiveness of actions within PHMA and GHMA, encourage seeding and planting research and demonstration plots on public lands for restoration and conservation of key vegetation communities, including but not limited to low, gray, and black sagebrush, and riparian areas, with academia, Tribes, public agencies and approved private companies or individuals.	Action E-VEG 5: TMA-4.2: Continue the expansion of, and improvements to, the Nevada Division of Forestry Seedbank & Plant Material program in conjunction with Federal partners. Utilize Nevada Division of Forestry conservation camp crews for native seed collection and rehabilitation activities. Improve storage capabilities for native seed and desirable species that provide a competitive advantage over invasive species and improve storage capabilities to promote longevity of available seed.	Action F-VEG 5: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG 6: —	Action B-VEG 6: —	Action C-VEG 6: —	Action D-VEG 6: Within PHMA and GHMA, prioritize and implement seeding and planting treatments in low sage communities that have been affected by wildfire. To the extent feasible or available, use local seed collected from intact stands or greenhouse cultivation. To increase seeding success, consider the use of specialized seed drills to ensure effective soil and seed contact.	Action E-VEG 6: TMA-4.2: Continue the expansion of, and improvements to, the Nevada Division of Forestry Seedbank & Plant Material program in conjunction with Federal partners. Utilize Nevada Division of Forestry conservation camp crews for native seed collection and rehabilitation activities. Improve storage capabilities for native seed and desirable species that provide a competitive advantage over invasive species and improve storage capabilities to promote longevity of available seed.	Action F-VEG 6: —	
Action A-VEG 7: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 7: Design post restoration management to ensure long-term	Action C-VEG 7: Same as Alternative A.	Action D-VEG 7: —	Action E-VEG 7: —	Action F-VEG 7: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	persistence. This could include changes in livestock grazing management, wild horse and burro management, and travel management, to achieve and maintain the desired condition of the restoration effort that benefits GRSG (Eiswerth and Shonkwiler 2006).					
Action A-VEG 8: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 8: Consider potential changes in climate (Miller et al. 2011) when proposing restoration seedings when using native plants. Consider collection from the warmer component of the species current range when selecting native species (Kramer and Havens 2009).	Action C-VEG 8: Same as Alternative A.	Action D-VEG 8: Same as Alternative A.	Action E-VEG 8: —	Action F-VEG 8: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG 9: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 9: Restore native (or desirable) plants and create landscape patterns which most benefit GRSG.	Action C-VEG 9: Exotic seedings will be rehabbed, interseeded, restored to recover sagebrush in areas to expand PHMA.	Action D-VEG 9: Same as Alternative A.	Action E-VEG 9: —	Action F-VEG 9: —	
Action A-VEG 10: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 10: Make re-establishment of sagebrush cover and desirable understory plants (relative to ecological site potential) the highest priority for restoration efforts.	Action C-VEG 10: Same as Alternative A.	Action D-VEG 10: Same as Alternative A.	Action E-VEG 10: —	Action F-VEG 10:	
Action A-VEG 11: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 11: In fire prone areas where sagebrush seed is required for GRSG habitat restoration, consider establishing seed harvest areas that are managed for seed production (Armstrong 2007) and are a priority for protection from outside disturbances.	Action C-VEG 11: Same as Alternative A.	Action D-VEG 11: —	Action E-VEG 11: —	Action F-VEG 11: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG 12: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 12: —	Action C-VEG 12: Active restoration practices: • Removal of livestock water troughs, pipelines, and wells. • Where possible, without further damage to springs/water sources, remove waterline piping and maximize water at spring/stream sources supporting diverse riparian and meadow vegetation. • Promote natural healing of headcuts to the maximum extent possible by limiting disturbance throughout the watershed. At times, a combination of methods may need to be used – but gabions and structural devises	Action D-VEG 12: —	Action E-VEG 12: —	Action F-VEG 12: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
		and boulder dumping should be limited, and restoration should strive for a functioning system. • Ripping/ recontouring of roads and seeding with native local ecotypes of shrubs and grasses.				
Action A-VEG 13: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 13: —	Action C-VEG 13: Active restoration of crested wheatgrass seedings. This can be accomplished, following targeted restoration planning to expand, reconnect or recover habitats required by GRSG by: • Inter-seeding sagebrush seed or seedlings. • Remove crested wheatgrass through plowing while minimizing use of herbicides. Subsequent re-	Action D-VEG 13: —	Action E-VEG 13: —	Action F-VEG 13: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
		seeding with local native ecotypes. • Active restoration of cheatgrass infestation areas. In all cases, local native plant ecotype seeds and seedlings must be used.				
Action A-VEG 14: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 14: —	Action C-VEG 14: —	Action D-VEG 14: —	Action E-VEG 14: —	Action F-VEG 14: Avoid sagebrush reduction/treatments to increase livestock or big game forage in PHMA and GHMA and include plans to restore high-quality habitat in areas with invasive species. (Audubon)	
Action A-VEG 15: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 15: —	Action C-VEG 15: —	Action D-VEG 15: No new roads (temporary or permanent) would be constructed or created during project implementation for	Action E-VEG 15: Allow temporary road access to vegetation treatment areas. Construct temporary access roads where access is needed with	Action F-VEG 15: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			vegetation treatments. Administrative access including off-road travel with heavy equipment and vehicles would occur during implementation. Loading and unloading of all equipment would occur on existing roads to minimize disturbance to vegetation and soil.	minimum design standards to avoid and minimize impacts. Remove and restore temporary roads upon completion of treatment. (2012 Plan)		
Action A-VEG 16: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 16: —	Action C-VEG 16: —	Action D-VEG 16: Within PHMA and GHMA, when closing and reseeding roads, primitive roads, and trails not designated in travel management plans, evaluate the location for strategic protection of the overall habitat and consider using fire resistant species to provide for fire break on a case-by-case basis.	Action E-VEG 16: Conduct rehabilitation of roads, primitive roads, and trails not designated in travel management plans where such plans exist and have been approved for implementation. This also includes primitive route/roads that were not designated in wilderness study areas and within lands managed for	Action F-VEG 16: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				wilderness characteristics that have been selected for protection, with due consideration given to any historical significance of existing trails. When reseeding roads, primitive roads, and trails, use appropriate seed mixes and consider the use of transplanted sagebrush in order to meet GRSG habitat restoration objectives. Where invasive annual grasses are present, herbicides may be used to enhance the effectiveness of any seeding and to also establish islands of desirable species for dispersion. (See Appendix D).		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG 17: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 17:	Action C-VEG 17	Action D-VEG 17: Evaluate vegetation treatments (including GRSG habitat treatments) in a landscape-scale context to address habitat fragmentation, effective patch size, invasive species presence, and protection of intact sagebrush communities. Coordinate vegetation treatments with adjacent land owners and agencies to avoid any unintended negative landscape effects on GRSG.	Action E-VEG 17: —	Action F-VEG 17: —	
Action A-VEG 18: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 18: —	Action C-VEG 18: —	Action D-VEG 18: Establish restoration areas where reseeding can be applied to improve impaired GRSG habitat.	Action E-VEG 18: See role of Sagebrush Ecosystem Technical Team (Action E-SSS-ACDM 7).	Action F-VEG 18: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG 19: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 19: —	Action C-VEG 19: —	Action D-VEG 19: In PHMA and GHMA, rest allotments or pastures for one growing season year prior to initiating vegetation treatments, as needed, to increase resiliency of vegetation communities prior to treatment, unless grazing is part of the vegetation treatment design.	Action E-VEG 19: See role of Sagebrush Ecosystem Technical Team.	Action F-VEG 19: —	
Action A-VEG 20: No common action across LUPs within the sub-region. See **Section 2.10.1.**	Action B-VEG 20: —	Action C-VEG 20: —	Action D-VEG 20: In PHMA and GHMA, rest treated areas from livestock grazing for a minimum of two full growing seasons following treatment or until vegetation or habitat objectives are met.	Action E-VEG 20: —	Action F-VEG 20: —	
Action A-VEG 21: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 21: —	Action C-VEG 21: —	Action D-VEG 21: In PHMA and GHMA, monitor and control noxious weeds and invasive annual	Action E-VEG 21: In the Core, Priority, and General Management areas, monitor and control	Action F-VEG 21: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			grasses post-treatment to meet and sustain GRSG habitat and vegetation objectives (see Table 2-11 in section 2.8.5 of this Chapter).	noxious weeds and invasive annual grasses post-treatment to meet and sustain GRSG habitat and vegetation objectives (see Table 2-2).		
Action A-VEG 22: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 22: —	Action C-VEG 22: —	Action D-VEG 22: Where winter range has been identified as a limiting factor, emphasize vegetation treatments in known winter range to enhance habitat quality or reduce wildfire risk around or within winter range habitat.	Action E-VEG 22: —	Action F-VEG 22: —	
Action A-VEG 23: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 23: —	Action C-VEG 23: —	Action D-VEG 23: Manage lotic riparian habitats in conjunction with adjacent terraces and/or valley bottoms as natural fuel breaks to reduce size and frequency of wildfires in PHMA and GHMA.	Action E-VEG 23: —	Action F-VEG 23: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG 24: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 24: —	Action C-VEG 24: —	Action D-VEG 24: In lentic and lotic riparian systems, conserve or enhance these systems to maintain or increase amount of edge and cover.	Action E-VEG 24: —	Action F-VEG 24: —	
Action A-VEG 25: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 25: —	Action C-VEG 25: —	Action D-VEG 25: In PHMA and GHMA, in riparian and wet meadows, inventory, monitor for, and control invasive species. When treating invasive species, use the standard operating procedures and BMPs[2] outlined in the 2007 Vegetation Treatments Using Herbicides on BLM Lands in 17 States EIS and ROD, and for the Forest Service administered lands adhere to the Humboldt-Toiyabe Forest Directive for Herbicide Application and applicable	Action E-VEG 25: 1. ***Prevent*** the establishment of invasive species into uninvaded GRSG habitat. This will be achieved by conducting systematic and strategic detection surveys, data collection, and mapping of these areas and engaging in early response efforts if invasion occurs. This will be achieved by further developing federal and state partnerships and working with local groups, such as Weed Control Districts, Cooperative Weed	Action F-VEG 25: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			practices found in its accompanying Biological Assessment.	Management Areas, and Conservation Districts. This is the highest priority for the state of Nevada. 2. ***Control*** invasive species infestations in GRSG habitat already compromised by invasion. Control techniques may include: biomass removal by means such as strategic and targeted grazing, mowing, or using herbicides. In addition, the state will continue to support research in the development of biological control agents and deploy emerging technologies in Nevada as they become available. 3. ***Restore*** ecologically functioning sagebrush ecosystems in GRSG habitat already		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				compromised by invasion. Restoration may include revegetating sites with native plants cultivated locally or locally adapted, non-native plant species where appropriate. Control of invasive species must be accompanied by ecosystem restoration. a. Ecological site descriptions and associated state and transition models will be used to identify target areas for resiliency enhancement and/ or restoration. Maintaining and/or enhancing resilience should be given top priority. In the Great Basin sagebrush-bunchgrass communities, invasion resistance and successional		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				resilience following disturbance are functions of a healthy perennial bunchgrass component. Therefore a combination of active and passive management will be required to ensure this functionality. Areas that are in an invaded state that will likely transition to an annual grass monoculture if a disturbance occurs and are located within or near GRSG habitat should be prioritized for restoration efforts to increase resistance and resilience. 4. ***Monitor*** and adaptively manage to ensure effectiveness of efforts to prevent, control and restore.		
Action A-VEG 26: No common action	Action B-VEG 26: —	Action C-VEG 26: —	Action D-VEG 26: In PHMA and GHMA,	Action E-VEG 26: Implement Site-	Action F-VEG 26: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.			design water developments to maintain ecological integrity of lentic riparian habitats. See management actions in the Range section.	Specific Consultation Based Design Features as appropriate. See Appendix D.		
Action A-VEG 27: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 27: —	Action C-VEG 27: —	Action D-VEG 27: In PHMA and GHMA, design and implement vegetation treatments to restore, enhance, and maintain riparian areas to meet seasonal life history requirements (e.g. late summer brood rearing habitat) for GRSG.	Action E-VEG 27: —	Action F-VEG 27: —	
Action A-VEG 28: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 28: —	Action C-VEG 28: —	Action D-VEG 28: In PHMA and GHMA, where riparian extent is limited by shrub encroachment consider fuels treatments including prescribed burning or other means to increase edge and expand mesic areas to improve late	Action E-VEG 28: —	Action F-VEG 28: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			summer brood-rearing habitat (see Table 2-11 in section 2.8.5 of this Chapter).			
Action A-VEG 29: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 29: —	Action C-VEG 29: —	Action D-VEG 29: For Wyoming, Mountain, and Basin Big Sage Communities in PHMA and GHMA: • Priority for treatment would focus on enhancing, reestablishing or maintaining the most limiting habitat component. • Reestablish sagebrush to meet habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter). • Manipulate sagebrush communities to achieve age-class, structure, cover, and species composition objectives in GRSG	Action E-VEG 29: —	Action F-VEG 29: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			habitat (see Table 2-11 in section 2.8.5 of this Chapter). • Restore herbaceous understory in brush dominated areas to meet habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter). • Establish and maintain fuel breaks to limit fire size and mitigate fire behavior to increase suppression effectiveness. When possible, establish fuel breaks adjacent to roads or other previously disturbed areas. • Treat areas with cheatgrass, other invasive and noxious species presence to minimize			

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			competition and favor establishment of desired species. • Treat disturbed areas as soon as possible but within one year of the disturbance. • Select the appropriate treatment method(s) that meets the vegetative objective per the decisions identified in the Vegetation Treatments on BLM Lands in 17 Western States Programmatic EIS and Associated ROD (BLM 2007a).			
Action A-VEG 30: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 30: —	Action C-VEG 30: —	Action D-VEG 30: Where pinyon and/or juniper trees are encroaching on sagebrush plant communities, design treatments to decrease conifer encroachment, and	Action E-VEG 30: TMA-7: Initiate landscape level treatments in the SGMA to reverse the effects of Pinyon and/or Juniper encroachment and restore healthy,	Action F-VEG 30: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			increase cover of sagebrush and/or understory to (1) improve habitat for GRSG; and (2) minimize avian predator perches and predation opportunities on GRSG.	resilient sagebrush ecosystems.		
Action A-VEG 31: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 31: —	Action C-VEG 31: —	Action D-VEG 31: For Low Sage/Black Sage Communities monitor and treat cheatgrass and other invasive species in low sage vegetation communities in PHMA and GHMA before it becomes a dominant species.	Action E-VEG 31: —	Action F-VEG 31: —	
Action A-VEG 32: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG 32: —	Action C-VEG 32: —	Action D-VEG 32: For existing nonnative seeding: Allow natural establishment of sagebrush to occur in nonnative seedings within or adjacent to GRSG habitat. Manage seedings to allow succession toward sagebrush	Action E-VEG 32: —	Action F-VEG 32: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			canopy cover more favorable for GRSG nesting and early brood-rearing needs.			
Integrated Invasive Species Management						
Action A-VEG-ISM 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISM 1: —	Action C-VEG-ISM 1: —	Action D-VEG-ISM 1: Assess invasive annual grass presence/distribution prior to implementing vegetation restoration projects to determine if additional treatments are required to treat invasive annual grasses. Prioritize treatments to remove invasive annual grasses to provide most benefit to GRSG habitat conditions.	Action E-VEG ISM 1: See Action E-VEG 25 – Prevent, Control, Restore, and Monitor.	Action F-VEG-ISM 1: In GRSG habitat, ensure that soil cover and native herbaceous plants are at their ESD potential to help protect against invasive plants. In areas without ESDs, reference sites would be utilized to identify appropriate vegetation communities and soil cover.	
Additional Management - Invasive Species and Conifer Encroachment						
Action A-VEG-ISCE 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 1: —	Action C-VEG- ISCE 1: —	Action D-VEG- ISCE 1: Treat sites within PHMA and GHMA that are dominated by invasive species through an IVM approach using fire,	Action E-VEG- ISCE 1: TMA-6.1: Continue Nevada Department of Agriculture statewide surveys for the detection of incipient invasive and	Action F-VEG-ISCE 1: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			chemical, mechanical and biological methods based on site potential.	noxious plants in conjunction with USDA-APHIS and the Nevada Department of Transportation. • Conducts and attends numerous workshops, field days, booth and other events to promote education, awareness, and outreach to limit introduction and spread of invasive and noxious plants on public lands and natural habitat. Statewide CWMAs support program: • Provide technical assistance, project success monitoring and financial support to CWMAs through federal and state funding for projects performing the following tasks: • Noxious weed and		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				invasive plant treatments on lands degraded by infestations. • Early Detection, Rapid Response (EDRR) surveying for new noxious weed species that are not already established in the state and pose new threats to healthy native plant ecosystems. • Native planting and reseeding on previously treated sites or in areas susceptible to invasion in order to improve habitat and/or the overall health of lands. • Educational activities directed toward local communities regarding the negative impacts of noxious weeds and the importance of		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				infestation spread prevention and the implementation of integrated weed management plans. • Provide technical assistance, project success monitoring and financial support to areas across the state that were previously burned and currently threatened by fires due to noxious weed infestations and/or fire fuels. Nonfederal land tasks include: o Fuels reduction through noxious weed decadent material removal, noxious weed and invasive plant treatments, and other forested and riparian area fire fuel load thinning. o Native planting		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				and reseeding in cleared areas and degraded riparian habitat areas. o Private landowner assistance in fire and invasive plant invasion prevention and land management plans.		
Action A-VEG-ISCE 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 2: —	Action C-VEG-ISCE 2: —	Action D-VEG-ISCE 2: Targeted early season grazing would be allowed to suppress cheatgrass (*Bromus tectorum*) or other vegetation that are hindering achieving GRSG objectives in PHMA and GHMA. Sheep, cattle, or goats (where permitted) may be used as long as the animals are intensely managed and removed when the utilization of desirable species reaches 35%.	Action E-VEG-ISCE 2: TMA-12.1: Expand the promotion of proper livestock grazing practices that promote the health of perennial grass communities as this condition has been found to suppress the establishment of cheatgrass	Action F-VEG-ISCE 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG-ISCE 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 3: —	Action C-VEG-ISCE 3: —	Action D-VEG-ISCE 3: In perennial grass, invasive annual grass, and conifer-invaded cover types, restore sagebrush steppe with sagebrush seedings where feasible.	Action E-VEG-ISCE 3: See Role of Sagebrush Ecosystem Technical Team (Action E-SSS-ACDM 5).	Action F-VEG-ISCE 3: —	
Action A-VEG-ISCE 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 4: —	Action C-VEG-ISCE 4: —	Action D-VEG-ISCE 4: Pinyon and/or juniper treatment in PHMA and GHMA would focus on enhancing, reestablishing, or maintaining habitat components (e.g. cover, security, and food) in order to achieve habitat objectives identified in Table 2-11 in section 2.8.5 of this Chapter. Treatment design should focus on addressing the most limiting habitat component.	Action E-VEG-ISCE 4: TMA-7: Initiate landscape level treatments in the SGMA to reverse the effects of Pinyon and/or Juniper encroachment and restore healthy, resilient sagebrush ecosystems. TMA-7.5: Allocate sufficient resources to fully address habitat loss and degradation in the next ten years.	Action F-VEG-ISCE 4: —	
Action A-VEG-ISCE 5: No common action	Action B-VEG-ISCE 5: —	Action C-VEG-ISCE 5: —	Action D-VEG-ISCE 5: —	Action E-VEG-ISCE 5: Inventory and	Action F-VEG-ISCE 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.				prioritize areas for treatment of Phase I and Phase II encroachment in the SGMA to restore habitat resiliency, reduce avian predator perches, and increase forb and grass cover.		
Action A-VEG-ISCE 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 6: —	Action C-VEG-ISCE 6: —	Action D-VEG-ISCE 6: —	Action E-VEG-ISCE 6: Aggressively implement plans to remove Phase I and Phase II encroachment and treat Phase III encroachment to reduce the threat of severe conflagration and restore the SGMA where possible, especially in areas in close proximity to Occupied and Suitable Habitat.	Action F-VEG-ISCE 6: —	
Action A-VEG-ISCE 7: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 7: —	Action C-VEG-ISCE 7: —	Action D-VEG-ISCE 7: Manage pinyon and/or juniper stands in encroached sagebrush vegetation	Action E-VEG-ISCE 7: TMA-7.1: Inventory and prioritize areas for treatment of Phase I and Phase II	Action F-VEG-ISCE 7: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			communities to meet GRSG habitat objectives as described in Table 2-11 in section 2.8.5 of this Chapter. In areas with a sagebrush component, select treatment methods that maintain sagebrush and shrub cover and composition.	encroachment in the SGMA to restore habitat resiliency, reduce avian predator perches, and increase forb and grass cover.		
Action A-VEG-ISCE 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 8: —	Action C-VEG-ISCE 8: —	Action D-VEG-ISCE 8: In Phase II and III pinyon and/or juniper stands in PHMA and GHMA: • Remove or reduce biomass to meet fuel and GRSG habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter). • Take appropriate action to establish desired understory species composition, including seeding	Action E-VEG-ISCE 8: TMA-7.2: Aggressively implement plans to remove Phase I and Phase II encroachment and treat Phase III encroachment to reduce the threat of severe conflagration and restore the SGMA where possible, especially in areas in close proximity to Core and Priority Management Areas (State of Nevada	Action F-VEG-ISCE 8: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			and invasive species treatments. • In areas with a sagebrush component, select a treatment method that maintains or improves sagebrush and shrub cover and composition.	2012). TMA-7.3: Prioritize areas for treatment of Phase III Pinyon and/or Juniper encroachment in strategic areas to break up continuous, hazardous fuel beds. Treat areas that have the greatest opportunity for recovery in the SGMA based on ecological site potential. Old growth trees should be protected on woodland sites (State of Nevada 2012). TMA-7.4: Allow temporary road access to Phase I, Phase II, and Phase III treatment areas. Construct temporary access roads where access is needed with minimum design standards to avoid and minimize impacts. Remove and restore		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				temporary roads upon completion of treatment.		
Action A-VEG-ISCE 9: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 9: —	Action C-VEG-ISCE 9: —	Action D-VEG-ISCE 9: —	Action E-VEG-ISCE 9: Allow temporary road access to Phase I, Phase II, and Phase III treatment areas. Construct temporary access roads where access is needed with minimum design standards to avoid and minimize impacts. Remove and restore temporary roads upon completion of treatment.	Action F-VEG-ISCE 9: —	
Action A-VEG-ISCE 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 10: —	Action C-VEG-ISCE 10: —	Action D-VEG-ISCE 10: —	Action E-VEG-ISCE 10: Allocate sufficient resources to fully address habitat loss and degradation in the next ten years.	Action F-VEG-ISCE 10: —	
Action A-VEG-ISCE 11: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 11: —	Action C-VEG-ISCE 11: —	Action D-VEG-ISCE 11: —	Action E-VEG-ISCE 11: TMA-7.7: Continue to incentivize and assist in the development of bio-fuels and other commercial uses of	Action F-VEG-ISCE 11: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				Pinyon and/or Juniper resources.		
Action A-VEG-ISCE 12: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 12: —	Action C-VEG-ISCE 12: —	Action D-VEG-ISCE 12: —	Action E-VEG-ISCE 12: TMA-7.8: Increase the incentives for private industry investment in biomass removal, land restoration, and renewable energy development by authorizing stewardship contracts for up to 20 years.	Action F-VEG-ISCE 12: —	
Action A-VEG-ISCE 13: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 13: —	Action C-VEG-ISCE 13: —	Action D-VEG-ISCE 13: —	Action E-VEG-ISCE 13: TMA-7.9: The Nevada Sagebrush Ecosystem Council will establish a goal for the number of acres to be treated annually and work to accomplish that goal over time.	Action F-VEG-ISCE 13: —	
Action A-VEG-ISCE 14: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-ISCE 14: —	Action C-VEG-ISCE 14: —	Action D-VEG-ISCE 14: —	Action E-VEG-ISCE 14: Maintain a mosaic of shrub cover conditions ranging from twenty percent to forty percent in nesting habitat to	Action F-VEG-ISCE 14: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				provide both habitat resiliency and preferred nesting conditions for GRSG in areas with high raven populations. Where this amount of shrub cover is not available (<25%), then perennial grass cover should exceed 10% (Coates et al. 2011) and annual grass cover should not exceed 5% (Blomberg et al. 2012).		
Habitat conservation for agriculture						
Action A-VEG-HCA 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-HCA 1: —	Action C-VEG-HCA 1: —	Action D-VEG-HCA 1: —	Action E-VEG-HCA 1: TMA-10: Implement a best practices certification program for ranch management and forage production in consultation with the US Department of Agriculture, Natural Resource Conservation Service, and the Nevada Department of Agriculture.	Action F-VEG-HCA 1: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Climate Change						
Action A-VEG-CC 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-CC 1: —	Action C-VEG-CC 1: —	Action D-VEG-CC 1: As climate change data become available through REAs or other ecological studies, identify areas of unfragmented GRSG habitat and key habitat linkages that provide the life-cycle and genetic transfer needs for GRSG.	Action E-VEG-CC 1: —	Action F-VEG-CC 1: —	
Action A-VEG-CC 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-CC 2: —	Action C-VEG-CC 2: —	Action D-VEG-CC 2: Implement prevention and suppression actions to prevent additional loss to wildlife and cheatgrass domination in areas that are progressing towards recovery to build resiliency to climate change. Also, implement various treatments, such as seeding and shrub plantings, to restore GRSG habitat.	Action E-VEG-CC 2: —	Action F-VEG-CC 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG-CC 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-CC 3: —	Action C-VEG-CC 3: —	Action D-VEG-CC 3: Implement juniper removal treatments in areas with high potential to restore GRSG habitat. Priority for treatments area: Highest Priority - Phase 2 Pinyon and/or Juniper Stands to prevent long-term loss of GRSG habitat due to the area crossing a restoration threshold. Second Priority – Phase 1 Pinyon and/or Juniper stands to prevent the spread of the woodlands into GRSG habitat.	Action E-VEG-CC 3: TMA-7: Initiate landscape level treatments in the SGMA to reverse the effects of Pinyon and/or Juniper encroachment and restore healthy, resilient sagebrush ecosystems. (2012 Plan) TMA-7.1: Inventory and prioritize areas for treatment of Phase I and Phase II encroachment in the SGMA to restore habitat resiliency, reduce avian predator perches, and increase forb and grass cover. (2012 Plan) TMA-7.2: Aggressively implement plans to remove Phase I and Phase II encroachment and treat Phase III encroachment to reduce the threat of	Action F-VEG-CC 3: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				severe conflagration and restore SGMAs where possible, especially in areas in close proximity to Occupied and Suitable Habitat. (2012 Plan) TMA-7.3: Prioritize areas for treatment of Phase III Pinyon and/or Juniper encroachment in strategic areas to break up continuous, hazardous fuel beds. Treat areas that have the greatest opportunity for recovery in the SGMA based on ecological site potential. Old growth trees should be protected on woodland sites. (2012 Plan)		
Action A-VEG-CC 4: No common action across LUPs within the sub-region. See	Action B-VEG-CC 4: —	Action C-VEG-CC 4: —	Action D-VEG-CC 4: Implement treatments to reduce the presence of	Action E-VEG-CC 4: Restore ecologically functioning sagebrush ecosystems in GRSG	Action F-VEG-CC 4: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Section 2.10.1.			cheatgrass and restore sagebrush and native forbs and grasses in fragmented habitat with high potential for success. Also implement fuel treatments to protect these areas for wildlife.	habitat already compromised by invasion. Restoration may include revegetating sites with native plants cultivated locally or locally adapted, non-native plant species where appropriate. Control of invasive species must be accompanied by ecosystem restoration.		
Action A-VEG-CC 5: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-CC 5: —	Action C-VEG-CC 5: —	Action D-VEG-CC 5: Implement hazardous fuels, noxious weed, and cheatgrass treatments as well as adjusting uses to protect native vegetation communities that provide high quality GRSG habitat. Priorities for treatments are: Highest priority – Areas of high quality habitat where	Action E-VEG-CC 5: —	Action F-VEG-CC 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			forecasted bioclimatic conditions are predicted to persist through at least 2050. Second Priority – Areas of high to moderate value for GRSG habitat in lower elevations that are susceptible to cheatgrass domination and less likely to recover naturally from disturbance. Third Priority – Areas of high to moderate value for GRSG in higher elevations as that are more resistant to cheatgrass domination and more likely to recover naturally from disturbance.			
Action A-VEG-CC 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-CC 6: —	Action C-VEG-CC 6: —	Action D-VEG-CC 6: Build resiliency into restoration and enhancement seed mixes to ensure high	Action D-VEG-CC 6: Ecological site descriptions and associated state and transition models will	Action F-VEG-CC 6: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			value habitat persistence in light of anticipated climate change effects.	be used to identify target areas for resiliency enhancement and/ or restoration. Maintaining and/or enhancing resilience should be given top priority. In the Great Basin sagebrush-bunchgrass communities, invasion resistance and successional resilience following disturbance are functions of a healthy perennial bunchgrass component. Therefore a combination of active and passive management will be required to ensure this functionality. Areas that are in an invaded state that will likely transition to an annual grass monoculture if a disturbance occurs and are located		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				within or near GRSG habitat should be prioritized for restoration efforts to increase resistance and resilience.		
Action A-VEG-CC 7: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-CC 7: —	Action C-VEG-CC 7: —	Action D-VEG-CC 7: Work cooperatively with multiple agencies and stakeholders to establish and maintain a network of climate monitoring sites and stations.	Action E-VEG-CC 7: —	Action F-VEG-CC 7: —	
Drought						
Action A-VEG-D 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-D 1: During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover. Since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation	Action C-VEG-D 1: —	Action D-VEG-D 1: —	Action E-VEG-D 1: —	Action F-VEG-D 1: During drought periods, prioritize evaluating effects of drought in GRSG habitat areas relative to their biological needs, as well as drought effects on ungrazed reference areas. Since there is a lag in vegetation recovery following drought	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	recovery that meets GRSG needs in PHMA.				(Thurow and Taylor 1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation recovery that meets GRSG needs in GRSG habitat areas based on GRSG habitat objectives.	
Action A-VEG-D 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-D 2: —	Action C-VEG-D 2: —	Action D-VEG-D 2: In sagebrush ecosystems containing PHMA and GHMA, follow guidance in the Resource Management During Drought Handbook H-1730-1 (BLM 2011c). Apply appropriate drought mitigation measures to authorized uses and activities to reduce impacts on GRSG habitat and populations.	Action E-VEG-D 2: —	Action F-VEG-D 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-VEG-D 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-VEG-D 3: —	Action C-VEG-D 3: —	Action D-VEG-D 3: Initiate emergency management measures during times of drought to protect GRSG PHMA and GHMA. Implement post-drought management to allow for vegetation recovery that meets GRSG life cycle needs in PHMA and GHMA.	Action E-VEG-D 3: —	Action F-VEG-D 3: —	
Wild Horses and Burros						
Action A-WHB 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-WHB 1: —	Action C-WHB 1: —	Action D-WHB 1: For all HMAs, HAs and WHBTs within or that contain PHMA and GHMA, manage wild horse and burro populations within established AML to meet GRSG habitat objectives. In HMAs, HAs, and WHBTs not meeting standards due to degradation that can be at least partially contributed to wild horse or	Action E-WHB 1: Even if current AML is not being exceeded, yet habitat within the SGMA continues to become degraded, at least partially due to wild horses or burros, established AMLs within the HMA or WHBT should be reduced through the NEPA process and monitored annually to help determine future management	Action F-WHB 1: Reduce AMLs within HMAs and reduce WHBTs within occupied GRSG habitat by 25% to meet habitat objectives. —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
			burro populations, consider adjustments to AML through the NEPA process. Adjustments would be based on monitoring data and would seek to protect and enhance PHMA and GHMA and establish a thriving ecological balance.	decisions. Unless already meeting the lowest established AML level, during periods of drought, AMLs should be reduced to a level that is consistent with maintaining GRSG habitat objectives (see Table 2-2).	
Action A-WHB 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-WHB 2: Within PHMA, develop or amend BLM Herd Management Area Plans (HMAPs) and Forest Service WHBT Plans to incorporate GRSG habitat objectives and management considerations for all BLM HMAs and Forest Service WHBTs.	Action C-WHB 2: Same as Alternative A.	Action D-WHB 2: —	Action E-WHB 2: Ensure that Herd Management Area Plans (HMAP) and WHBT plans are developed and/or amended within the Core, Priority, and General management areas, identified in the State's management areas map, taking into consideration the GRSG habitat objectives (see Table 2-2).	Action F-WHB 2: Same as Alternative B, except reduce AMLs within HMAs and reduce WHBTs within occupied GRSG habitat by 25% to meet habitat objectives.
Action A-WHB 3: No common action	Action B-WHB 3: For all BLM HMAs and	Action C-WHB 3: Same as Alternative A.	Action D-WHB 3: —	Action E-WHB 3: Methods that were	Action F-WHB 3: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
across LUPs within the sub-region. See **Section 2.10.1**.	Forest Service WHBTs within PHMA, prioritize the evaluation of all AMLs based on indicators that address structure/condition/composition of vegetation and measurements specific to achieving GRSG habitat objectives.			used to initially establish AMLs should be reevaluated to determine if they are still sufficient to achieve GRSG habitat objectives (see Table 2-2).	
Action A-WHB 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-WHB 4: Coordinate with other resources (Range, Wildlife, and Riparian) to conduct land health assessments to determine existing structure/condition/composition of vegetation within all BLM HMAs and Forest Service WHBTs.	Action C-WHB 4: Same as Alternative A.	Action D-WHB 4: —	Action E-WHB 4: Use professionals (e.g., botanists, rangeland ecologists, wildlife biologists, and hydrologists) from diverse backgrounds to conduct land health assessments, proper functioning condition, site-specific wild horse and burro grazing response indices assessments, and habitat objective assessments.	Action F-WHB 4: Same as Alternative B.
Action A-WHB 5: No common action	Action B-WHB 5: When conducting	Action C-WHB 5: Same as Alternative	Action D-WHB 5: —	Action E-WHB 5: When implementing	Action F-WHB 5: Same as

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.	NEPA analysis for wild horse and burro management activities, water developments or other rangeland improvements for wild horses in PHMA, address the direct and indirect effects on GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified above in PHMA.	A.		management activities, water developments, or rangeland improvements for wild horses or burros, consider both direct and indirect effects on GRSG and use the applicable Site-Specific Consultation Based Design Features (SSCBDF) (see Appendix D) to minimize potential impacts or disturbances.	Alternative B.	
Action A-WHB 6: —	Action B-WHB 6: —	Action C-WHB 6: —	Action D-WHB 6: —	Action E-WHB 6: Given their capability to increase their numbers by 18%-25% annually, resulting in the doubling in population every 4-5 years (Wolfe et al. 1989; Garrott et al. 1991), wild horse gathers should be conducted to attain	Action F-WHB 6: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				the lowest levels of AML. This in combination with continued and expanded use and development of effective forms of population growth suppression techniques will enable AML to be maintained for longer periods and reduce the frequency of gathers and associated cost and effort.	
Action A-WHB 7: —	Action B-WHB 7: —	Action C-WHB 7: —	Action D-WHB 7: —	Action E-WHB 7: In order to expedite recovery time and enhance restoration efforts following wildfire or GRSG habitat enhancement projects , consider a significant reduction and temporary removal or exclusion of all wild horses and burros within or from burned areas where HMAs and WHBT	Action F-WHB 7: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				overlap with GRSG Core, Priority, and General Management Areas. Wild horse grazing behaviors and specialized physiological requirements make unmanaged grazing on recently burned/ treated areas problematic for reestablishment of burned and/or seeded vegetation. (Arnold and Dudzinski 1978; Rittenhouse et al. 1982; Duncan et al. 1990; Hanley 1982; Wagner 1983; Menard et al. 2002; Stoddart et al. 1975; Symanski1994).		
Action A-WHB 8: —	Action B-WHB 8: —	Action C-WHB 8: —	Action D-WHB 8: —	Action E-WHB 8: If current AML is being exceeded, consider emergency short-term measures to reduce or avoid degradation of GRSG habitat from HMAs or WHBT that are in	Action F-WHB 8: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				excess of established AML levels within the SGMA.	
Action A-WHB 9: —	Action B-WHB 9: —	Action C-WHB 9: —	Action D-WHB 9: —	Action E-WHB 9: If monitored sites are not meeting GRSG habitat objectives in Table 2-2, even if AML is being met, and it is determined that wild horses or burros are the primary causal factor, then implement protective measures as applicable in addressing similar emergencies (e.g. fire, flood, and drought). Consider exclusionary fencing of riparian or other mesic sites and implement water developments (following the SSCBDF as described in Appendix D) to ensure dispersal or avoidance of sites heavily impacted by	Action F-WHB 9: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				wild horses (Feist 1971; Pellegrini 1971; Ganskopp and Vavra 1986; Naiman et al. 1992). A water source that meets the SSCBDF should be provided, as horses traditionally do not leave known water sources just because they are fenced. Plan for and implement an immediate reduction in herd size to a level that would enable the area to recover to trend toward meeting the habitat objectives in Table 2-2 and to preserve and maintain a thriving natural ecological balance and multiple-use relationship in that area. Consider lowering the AML levels to prevent future damage.		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-WHB 10: —	Action B-WHB 10: —	Action C-WHB 10: —	Action D-WHB 10: —	Action E-WHB 10: Implement a telemetry monitoring program for wild horses. Research regarding the direct interactions between, and in indirect effects of wild horses and GRSG is identified as a need and could further assist the agencies in the development of habitat selection maps (Beever and Aldridge et al. 2011) as well as offer a general understanding of the intensity, timing, and duration of use by wild horses within the SGMA.	Action F-WHB 10: —	
Action A-WHB 11: —	Action B-WHB 11: —	Action C-WHB 11: —	Action D-WHB 11: —	Action E-WHB 11: Work with professionals from other federal and state agencies, researchers at universities, and others to continue to develop, expand, and	Action F-WHB 11: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				test more effective population growth suppression techniques, including contraception options	
Climate Change					
Action A-WHB-CC 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-WHB-CC 1: —	Action C-WHB-CC 1: —	Action D-WHB-CC 1: As climate change data become available through REAs or other ecological studies, identify areas of unfragmented GRSG habitat and key habitat linkages that provide the life-cycle and genetic transfer needs for GRSG. Manage the identified areas as PHMA.	Action E-WHB-CC 1: As climate data becomes available, adjust wild horse and burro and rangeland management practices to allow for Core, Priority, and General Management Areas to sustain or increase their sagebrush ecosystem resiliency and resistance.	Action F-WHB-CC 1: —
Action A-WHB-CC 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-WHB-CC 2: —	Action C-WHB-CC 2: —	Action D-WHB-CC 2: Work cooperatively with multiple agencies and stakeholders to establish and maintain a network of climate monitoring sites and stations.	Action E-WHB-CC2: Collaborate with weather and climate professionals and agencies (e.g., UNR, DRI, and NOAA) to proactively manage the rangelands resources and adjust, as necessary, the current wild horse	Action F-WHB-CC 2: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				and burro management policies. Ensure that sufficient ongoing public and political education is provided.	
Fire Management					
Action A-FFM 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 1: —	Action C-FFM 1: —	Action D-FFM 1: —	Action E-FFM 1: Continue the expansion and implementation of a framework across all land jurisdictions for pre-suppression actions to minimize ignitions and alter fuel conditions in order to avoid, whenever possible, large damaging conflagrations.	Action F-FFM 1: —
Action A-FFM 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 2: —	Action A-FFM 2: —	Action D-FFM 2: —	Action E-FFM 2: Actively manage habitat within the SGMA across all jurisdictions with the goal of restoring the appropriate role of wildfire to establish resiliency, and actively engage in prevention, suppression and	Action F-FFM 2: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				restoration of the effects of fire and invasive species.		
Action A-FFM 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 3: —	Action C-FFM 3: —	Action D-FFM 3: —	Action E-FFM 3: Continue the expansion and implementation of fire suppression plans and strategies across all land jurisdictions within the SGMA.	Action F-FFM 3: —	
Action A-FFM 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 4: —	Action C-FFM 4: —	Action D-FFM 4: Implement a coordinated inter-agency approach to fire restrictions based upon National Fire Danger Rating System (NFDRS) thresholds (fuel conditions, drought conditions and predicted weather patterns) for GRSG habitat.	Action E-FFM 4: TMA-2.1: Strengthen and improve interagency wildfire prevention activities statewide through targeted wildfire prevention messages including education on habitat loss, updating interagency agreements, conducting wildfire prevention workshops, and demonstration projects.	Action F-FFM 4: —	
Action A-FFM 5: No common action across LUPs within	Action B-FFM 5: —	Action C-FFM 5: —	Action D-FFM 5: Develop wildfire prevention plans that	Action E-FFM 5: TMA-2.1: Strengthen and improve	Action F-FFM 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
the sub-region. See **Section 2.10.1**.			explain the resource value of GRSG habitat and include fire prevention messages and actions to reduce human-caused ignitions.	interagency wildfire prevention activities statewide through targeted wildfire prevention messages including education on habitat loss, updating interagency agreements, conducting wildfire prevention workshops, and demonstration projects.	
Action A-FFM 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 6: —	Action C-FFM 6: —	Action D-FFM 6: 2 Fuel treatments will be designed though an interdisciplinary process to expand, enhance, maintain, and protect GRSG habitat. Use green strips and/or fuel breaks, where appropriate, to protect seeding efforts from subsequent fire events. In coordination with USFWS and relevant	Action E-FFM 6: TMA-2.3: Continue the construction of targeted, well designed fuel breaks and "green strips" to break up fuel continuity, reduce fire size, and create safe areas for fire suppression activities. Use the best adapted plant materials to re-vegetate green strips with fire resistant species. Fund and schedule regular maintenance activities	Action F-FFM 6: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			state agencies, BLM and Forest Service planning units with large blocks of GRSG habitat will develop, using the assessment process described in **Appendix G**, Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, a fuels management strategy which considers an up-to-date fuels profile, land use plan direction, current and potential habitat fragmentation, sagebrush and GRSG ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity, where appropriate. When developing this strategy, planning units will consider the risk of increased habitat fragmentation	of green strips as needed.		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken.			
Action A-FFM 7: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 7: —	Action C-FFM 7: —	Action D-FFM 7: Apply seasonal restriction, as needed, for implementing fuels management treatments according to the type of seasonal habitat present.	Action E-FFM 7: TMA-2.3: Continue the construction of targeted, well designed fuel breaks and "green strips" to break up fuel continuity, reduce fire size, and create safe areas for fire suppression activities. Use the best adapted plant materials to re-vegetate green strips with fire resistant species. Fund and schedule regular maintenance activities of green strips as needed.	Action F-FFM 7: —	
Action A-FFM 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 8: —	Action C-FFM 8: —	Action D-FFM 8: Annually complete a review of landscape assessment implementation	Action E-FFM 8: TMA-3.2: Update Fire Management Plans, dispatch run cards, and relevant	Action F-FFM 8: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			efforts with appropriate USFWS and state agency personnel.	agreements to ensure "closest forces" concepts are being utilized at all times, particularly nonfederal suppression resources (e.g. Nevada Division of Forestry helicopters, crews, and volunteer fire departments). TMA-3.3: Establish and utilize Nevada Interagency Incident Management Teams (IMTs) for wildfires in the SGMA. Nevada currently has five Type 3 IMTs that are federally sponsored and comprised of qualified federal, state and local government employees. These IMTs ensure that the state has IMT members with knowledge of Nevada's issues and natural resources, a key advantage over		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				out-of-area IMTs that come to manage a Nevada fire with no local understanding TMA-3.5: Integrate suppression resource locations within the SGMA and pre-position resources as conditions dictate. TMA-3.6: Develop a "suitcase" interagency suppression task force (defined as a highly-mobile that could move throughout the state rapidly) for pre-positioning during high wildfire hazard periods. Activate up to three interagency "suitcase" task forces and pre-position them during Red Flag and predicted lightning events in the SGMA for initial attack response. TMA-3.14: Assign a local, trained		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				resource advisor with GRSG expertise on all fire suppression responses in the SGMA. TMA-3.1: Identify and develop suppression plans, including mapping of habitat in the SGMA, to improve initial attack suppression actions.		
Action A-FFM 9: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 9: —	Action C-FFM 9: —	Action D-FFM 9: Threatened, endangered, and sensitive species (including GRSG) and associated habitats would continue to be a high priority for National and Geographic Multi-Agency Coordination Groups.	Action E-FFM 9: TMA-1.2: Actively manage habitat in the SGMA across all jurisdictions with the goal of restoring the appropriate role of wildfire to establish resiliency, and actively engage in prevention, suppression and restoration of the effects of fire and invasive species (State of Nevada 2012). Limit the use of fire as a management tool in Wyoming Big Sagebrush and Black	Action F-FFM 9: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				Sagebrush plant communities.		
Action A-FFM 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 10: —	Action C-FFM 10: —	Action D-FFM 10: Within acceptable risk levels utilize a full range of fire management strategies and tactics, including the management of wildfires to achieve resource objectives, across the range of GRSG habitat consistent with land use plan direction.	Action E-FFM 10: TMA-3.9: Utilize the interagency Fire Planning Assessment system to optimize utilization of fire suppression resources (e.g. engines, aircraft, water tenders, and hand crews). Fire Program Analysis enables local and national planners to evaluate the effectiveness of alternative fire management strategies for the purpose of meeting fire and land management goals and objectives. TMA-3.10: Encourage use of the State's Air National Guard C-130 Unit with the Modular Airborne Firefighting System	Action F-FFM 10: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				(MAFFS) for aerial firefighting support. TMA-3.11: Increase the fleet of available heavy air tankers and develop a system for prioritizing their use to fight fires when needed. TMA-3.12: Eliminate policy and operational inconsistencies by returning jurisdiction over Nevada BLM lands that are currently managed by the California Surprise Field Office, placing that jurisdiction into the Carson City and Winnemucca Field Offices. TMA-3.13: Develop a specific and concise package of information on management areas within the SGMA for incoming Incident Management Teams		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				to ensure an understanding of Nevada conservation priorities that will be included in all Delegations of Authority and Fire Management Plans. TMA-1.5: Continue the expansion and implementation of fire suppression plans and strategies across all land jurisdictions within the SGMA.		
Action A-FFM 11: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 11: —	Action C-FFM 11: —	Action D-FFM 11: —	Action E-FFM 11: TMA-3.7: Within the SGMA, eliminate the tactic of "burning out," including backfiring unless there are direct life safety threats.	Action F-FFM 11: —	
Action A-FFM 12: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 12: —	Action C-FFM 12: —	Action D-FFM 12: Within GRSG habitat, PHMA (and PACs, if so determined by individual LUP efforts) are the highest priority for conservation and	Action E-FFM 12: TMA-3.9: Utilize the interagency Fire Planning Assessment system to optimize utilization of fire suppression resources (e.g.	Action F-FFM 12: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			protection during fire operations and fuels management decision making. The PHMA (and PACs, if so determined by individual LUP efforts) will be viewed as more valuable than GHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth in GHMA polygons as well. These priority areas will be further refined following completion of the GRSG Wildland Fire and Invasive Species Assessment described in **Appendix G**.	engines, aircraft, water tenders, and hand crews). Fire Program Analysis enables local and national planners to evaluate the effectiveness of alternative fire management strategies for the purpose of meeting fire and land management goals and objectives.		
Action A-FFM 13: No common action across LUPs within the sub-region. See	Action B-FFM 13: —	Action C-FFM 13: —	Action D-FFM 13: In post-fire rehabilitation plans within PHMA and GHMA, design re-	Action E-FFM 13: TMA-4.4: Continue identifying and obtaining funding opportunities from	Action F-FFM 13: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Section 2.10.1.			vegetation projects to (1) maintain and enhance unburned intact sagebrush communities when at risk from adjacent threats; (2) stabilize soils; (3) re-establish hydrologic function; (4) maintain and enhance biological integrity; (5) promote plant resiliency; (6) limit expansion or dominance or invasive species; and (7) reestablish native species.	Federal, State, local, industry and land users dedicated to implementing prioritized habitat enhancement, restoration, and conservation activities.		
Action A-FFM 14: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 14: —	Action C-FFM 14: —	Action D-FFM 14: In PHMA and GHMA, use native plant seeds for post-fire restoration, based on availability, adaptation (site potential), and probability of success. Where probability of success or native seed availability is low, nonnative seeds may be used as long as they meet GRSG	Action E-FFM 14: TMA-4.2: Continue the expansion of, and improvements to, the Nevada Division of Forestry Seedbank & Plant Material program in conjunction with Federal partners. Utilize Nevada Division of Forestry conservation camp crews for native seed	Action F-FFM 14: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter). In all cases, seed must be certified weed-free.	collection and rehabilitation activities. Improve storage capabilities for native seed and desirable species that provide a competitive advantage over invasive species and improve storage capabilities to promote longevity of available seed.		
Action A-FFM 15: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 15: —	Action: C-FFM 15 —	Action D-FFM 15: —	Action E-FFM 15: Following fires continue the expansion and implementation of sagebrush enhancement and restoration treatments consistent with GRSG management objectives in appropriate ecological sites.	Action F-FFM 15: —	
Action A-FFM 16: No common action across LUPs within the sub-region. See	Action B-FFM 16: —	Action C-FFM 16: —	Action D-FFM 16: In PHMA and GHMA, following post-fire restoration	Action E-FFM 16: TMA-4.5: Continue to focus research and monitoring efforts	Action F-FFM 16: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Section 2.10.1.			treatments, monitor and implement management actions as necessary to ensure long-term persistence of seeded or pre-burn native plants.	through demonstration projects on improving rehabilitation and revegetation successes in harsh environments.		
Action A-FFM 17: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 17: —	Action C-FFM 17: —	Action D-FFM 17: Within PHMA and GHMA, ensure that post-fire effectiveness monitoring continues until treatment objectives are met.	Action E-FFM 17: TMA-1.1: Utilize the Nevada Sagebrush Ecosystem Council and the Nevada Sagebrush Ecosystem Technical Team to collect and consolidate funding and develop common criteria and requirements for habitat protection, restoration and monitoring.	Action F-FFM 17: —	
Action A-FFM 18: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 18: —	Action C-FFM 18: —	Action D-FFM 18: Increase post-fire restoration activities within PHMA and GHMA through the use of integrated funding opportunities with other resource	Action E-FFM 18: TMA-1.1: Utilize the Nevada Sagebrush Ecosystem Council and the Nevada Sagebrush Ecosystem Technical Team to collect and	Action F-FFM 18: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			programs and partners.	consolidate funding and develop common criteria and requirements for habitat protection, restoration and monitoring.		
Action A-FFM 19: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM 19: —	Action C-FFM 19: —	Action D-FFM 19: BLM and Forest Service planning units (Districts and Forests), in coordination with the USFWS and relevant state agencies, would complete and continue to update GRSG Landscape Wildfire and Invasive Species Habitat Assessments to prioritize at risk habitats, and identify fuels management, preparedness, suppression and restoration priorities necessary to maintain sagebrush habitat to support interconnecting GRSG populations.	Action E-FFM 19: TMA-2.2: Continue successful landscape level habitat assessments in, and in proximity to, SGMAs to identify those habitat areas that are at the highest risk of wildland fire.	Action F-FFM 19: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			These assessments and subsequent assessment updates would also be a coordinated effort with an interdisciplinary team to take into account other GRSG priorities identified in this plan. **Appendix G** describes a minimal framework example and suggested approach for this assessment.			
Action A-FFM 20: No common action across LUPs within the sub-region. See Section **2.10.1**.	Action B-FFM 20: —	Action C-FFM 20: —	Action D-FFM 20: GHMA near where PHMA has been burned by wildfire will be managed as PHMA until the burned GRSG habitat and use has been restored. The location and amount of GHMA to be managed as PHMA will be determined by the BLM or Forest Service and the respective state	Action E-FFM 20: —	Action F-FFM 20: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
			wildlife agency; in Nevada it will be determined by the Sagebrush Ecosystem Technical Team, based on site-specific evaluations.		
Fuels Management					
Action A-FFM-HFM 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 1: —	Action C-FFM-HFM 1: —	Action D-FFM-HFM 1: Implement the RDFs identified in **Appendix D** consistent with applicable law.	Action E-FFM-HFM 1: Implement the RDFs identified in **Appendix D** consistent with applicable law.	Action F-FFM-HFM 1: —
Action A-FFM-HFM 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 2: —	Action C-FFM-HFM 2: —	Action D-FFM-HFM 2: —	Action E-FFM-HFM 2: Limit the use of fire as a management tool in Wyoming Big Sagebrush and Black Sagebrush plant communities.	Action F-FFM-HFM 2: —
Action A-FFM-HFM 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 3: —	Action C-FFM-HFM 3: —	Action D-FFM-HFM 3: Utilizing an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as grazing, prescribed fire,	Action E-FFM-HFM 3: TMA-2.5: Continue to identify State and County highway/road and utility ROWs for fuel breaks; replacing invasive, fire prone species with fire resistant species and performing other	Action F-FFM-HFM 3: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			chemical, biological and mechanical treatments are acceptable.	fuels reduction treatments.		
Action A-FFM-HFM 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 4: —	Action C-FFM-HFM 4: —	Action D-FFM-HFM 4: Identify opportunities for prescribed fire; including where prescribed fire has been identified as the most appropriate tool to meet fuels management objectives and GRSG conservation objectives, and the potential expansion or dominance of invasive species has been determined to be minimal through an invasive species risk determination for the treatment project (see BLM Manual Section 9015).	Action E-FFM-HFM 4: TMA-2.10: Review current processes and, if necessary, develop authorities and expedite the process to utilize a suite of active vegetative treatments (e.g. mechanical, targeted livestock grazing, prescribed fire, and chemical) to reduce weed invasion and maintain resilient post-fire landscapes and control excessive fuel loading throughout the SGMA and constructed fuel breaks	Action F-FFM-HFM 4: —	
Action A-FFM-HFM 5: No common action across LUPs within the sub-region. See	Action B-FFM-HFM 5: —	Action C-FFM-HFM 5: —	Action D-FFM-HFM 5: Upon project completion, monitor and manage fuels	Action E-FFM-HFM 5: TMA-22.1: Develop consistent monitoring protocols and	Action F-FFM-HFM 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Section 2.10.1.			projects to ensure long-term success, including persistence of seeded species and/or other treatment components. Control invasive vegetation post-treatment.	methods to be used across all land jurisdictions and agencies. Compile all project monitoring data into one GRSG database managed by the Nevada Sagebrush Ecosystem Technical Team for use in adaptive management and reporting.		
Action A-FFM-HFM 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 6: —	Action C-FFM-HFM 6: —	Action D-FFM-HFM 6: Apply seasonal restriction, as needed, for implementing fuels management treatments according to the type of seasonal habitat present.	Action E-FFM-HFM 6:TMA-1.6: Following fires, continue the expansion and implementation of sagebrush enhancement and restoration treatments consistent with GRSG management objectives in appropriate ecological sites.	Action F-FFM-HFM 6: —	
Action A-FFM-HFM 7: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 7: —	Action C-FFM-HFM 7: —	Action D-FFM-HFM 7: In coordination with USFWS and relevant state agencies, BLM and	Action E-FFM-HFM 7: TMA-1.7: Continue the expansion and implementation of proactive solutions	Action F-FFM-HFM 7: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			Forest Service planning units (Districts/Forests) will identify annual treatment needs for wildfire and invasive species management as identified in local unit level Landscape Wildfire and Invasive Species Assessments. Annual treatment needs will be coordinated across state/regional scales and across jurisdictional boundaries for long-term conservation of GRSG.	that are market-based, flexible, and take advantage of economies of scale. An example is the "good of the state" contract for fire fuels reduction services initiated by the State Purchasing Division in November 2007 that facilitates the contracting for forest management hand crew services, forestry equipment, hauling services, road construction and rehabilitation, and controlled fire burns. Agencies within the state use these services including the Nevada Division of Forestry and the Tahoe Resource Team to meet fuel reduction objectives TMA-2.4: Continue to support a business environment that incentivizes beneficial		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				uses of biomass and excess fuels (e.g. stewardship contracting and landscape-level long-term projects). TMA-2.7: Continue to utilize Nevada Division of Forestry conservation camp crews for fuels reduction project implementation and as federal grant match		
Action A-FFM-HFM 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 8: In PHMA, design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems. • Do not reduce sagebrush canopy cover to less than 15% (Connelly et al. 2000a; Hagen et al. 2007) unless a fuels management objective requires additional reduction	Action C-FFM-HFM 8: Same as Alternative A.	Action D-FFM-HFM 8: Implementation actions will be tiered to the Local (District/Forest) GRSG Landscape Wildfire & Invasive Species Assessment described in GEN-1, utilizing best available science related to the conservation of GRSG.	Action E-FFM-HFM 8: TMA-2.6: Continue to identify and utilize all cross-boundary authorities available to improve project coordination and implementation on the ground.	Action F-FFM-HFM 8: Design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems. • Do not reduce sagebrush canopy cover to less than 15% (Connelly et al. 2000a; Hagen et al. 2007) unless a fuels	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	in sagebrush cover to meet strategic protection of PHMA and conserve habitat quality for the species. Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in future NEPA documents. • Apply appropriate seasonal restrictions for implementing fuels management treatments according to the type of seasonal habitats present in a priority area. • Allow no fuels treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around				management objective requires additional reduction in sagebrush cover to meet strategic protection of occupied GRSG habitat and conserve habitat quality for the species. • Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in the EA process. • Apply appropriate seasonal restrictions for implementing fuels management treatments according to	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	or in the winter range and will maintain winter range habitat quality. • Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000a; Hagen et al. 2007; Beck et al. 2009). However, if as a last resort and after all other treatment opportunities have been explored and site-specific variables allow, the use of prescribed fire for fuel breaks that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very				the type of seasonal habitats present. • Allow no fuels treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around or in the winter range and will maintain winter range habitat quality. • Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000a; Hagen	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	minor component in the understory (Brown 1982). • Monitor and control invasive vegetation post-treatment. • Rest treated areas from grazing for two full growing seasons unless vegetation recovery dictates otherwise (WGFD 2011). • Require use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, nonnative seeds may be used as long as they meet GRSG habitat objectives (Pyke				et al. 2007; Beck et al. 2009). However, if as a last resort and after all other treatment opportunities have been explored and site-specific variables allow, the use of prescribed fire for that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very minor component in the understory (Brown 1982). • Design post fuels management projects to ensure long-	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	2011). • Design post fuels management projects to ensure long-term persistence of seeded or pre-treatment native plants. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006).				term persistence of seeded or pre-treatment native plants, including sagebrush. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006).	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 9: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 9: —	Action C-FFM-HFM 9: Lands will be managed to be in the good or better ecological condition to help minimize adverse impacts of fire.	Action D-FFM-HFM 9: —	Action E-FFM-HFM 9: —	Action F-FFM-HFM 9: —	
Action A-FFM-HFM 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 10: —	Action C-FFM-HFM 10: Any fuels treatments will focus on interfaces with human habitation or significant existing disturbances.	Action D-FFM-HFM 10: —	Action E-FFM-HFM 10: —	Action F-FFM-HFM 10: —	
Action A-FFM-HFM 11: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 11: Design fuels management projects in PHMA to strategically and effectively reduce wildfire threats in the greatest area. This may require fuels treatments implemented in a more linear versus block design (Launchbaugh et al. 2007).	Action C-FFM-HFM 11: Same as Alternative A.	Action D-FFM-HFM 11: —	Action E-FFM-HFM 11: TMA-2.9: Review current processes and, if necessary, the Federal agencies should obtain authority and expedite the process to implement vegetative treatments for fuels reduction projects in strategic areas for protection of sagebrush habitat	Action F-FFM-HFM 11: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 12: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 12: During fuels management project design, consider the utility of using livestock to strategically reduce fine fuels (Diamond et al. 2009), and implement grazing management that will accomplish this objective (Davies et al. 2011; Launchbaugh et al. 2007). Consult with ecologists to minimize impacts on native perennial grasses.	Action C-FFM-HFM 12: Same as Alternative A.	Action D-FFM-HFM 12: —	Action E-FFM-HFM 12: TMA-2.10: Review current processes and, if necessary, develop authorities and expedite the process to utilize a suite of active vegetative treatments (e.g. mechanical, targeted livestock grazing, prescribed fire, and chemical) to reduce weed invasion and maintain resilient post-fire landscapes and control excessive fuel loading throughout the SGMA and constructed fuel breaks.	Action F-FFM-HFM 12: —	
Action A-FFM-HFM 13: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 13: —	Action C-FFM-HFM 13: —	Action D-FFM-HFM 13: —	Action E-FFM-HFM 13: Manage wildland fires in the SGMA to reduce the number of wildfires that escape initial attack and become greater than 300 acres down to two to three percent	Action F-FFM-HFM 13: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				of all wildfire ignitions over a ten year period. In this context, fire should not be used in Phase III Pinyon and/or Juniper areas due to a lack of a sufficient sagebrush seed stock in the ground.		
Action A-FFM-HFM 14: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 14: —	Action C-FFM-HFM 14: —	Action D-FFM-HFM 14: —	Action E-FFM-HFM 15: Identify and develop suppression plans, including mapping of the SGMA, to improve initial attack suppression actions.	Action F-FFM-HFM 14: —	
Action A-FFM-HFM 15: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 15: —	Action C-FFM-HFM 15: —	Action D-FFM-HFM 15: —	Action E-FFM-HFM 15: Increase initial attack capability by training and equipping volunteer firefighters, as well as agricultural and other industry work forces for assignment during periods of high fire activity. Trained volunteers who are remotely located will	Action F-FFM-HFM 15: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				serve as first responders when necessary and appropriate.		
Action A-FFM-HFM 16: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 16: —	Action C-FFM-HFM 16: —	Action D-FFM-HFM 16: —	Action E-FFM-HFM 16: Integrate suppression resource locations within the SGMA and pre-position resources as conditions dictate.	Action F-FFM-HFM 16: —	
Action A-FFM-HFM 17: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 17: In PHMA, prioritize suppression, immediately after life and property, to conserve the habitat.	Action C-FFM-HFM 17: Same as Alternative A.	Action D-FFM-HFM 17: Fire fighter and public safety are the highest priority. GRSG habitat will be prioritized commensurate with property values and other important habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for GRSG.	Action E-FFM-HFM 17: TMA-3: Manage wildland fires in the SGMA to reduce the number of wildfires that escape initial attack and become greater than 300 acres down to two to three percent of all wildfire ignitions over a ten year period. In this context, fire should not be used in Phase III Pinyon and/or Juniper areas due to a lack of a	Action F-FFM-HFM 17: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				sufficient sagebrush seed stock in the ground.		
Action A-FFM-HFM 18: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 18: In GHMA, prioritize suppression where wildfires threaten PHMA.	Action C-FFM-HFM 18: Same as Alternative A.	Action D-FFM-HFM 18: —	Action E-FFM-HFM 18: TMA-3: Manage wildland fires in the SGMA to reduce the number of wildfires that escape initial attack and become greater than 300 acres down to two to three percent of all wildfire ignitions over a ten year period. In this context, fire should not be used in Phase III Pinyon and/or Juniper areas due to a lack of a sufficient sagebrush seed stock in the ground.	Action F-FFM-HFM 18: —	
Action A-FFM-HFM 19: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 19: Follow BMPs (WO IM 2013-128).	Action C-FFM-HFM 19: Same as Alternative A.	Action D-FFM-HFM 19: Implement the RDFs identified in Appendix D consistent with applicable law.	Action E-FFM-HFM 19: TMA-5: Through the Nevada Sagebrush Ecosystem Council, utilizing the avoid, minimize, and mitigate strategy, and with the goal of	Action F-FFM-HFM 19: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				restoring the appropriate role of wildfire, the following successful Nevada Division of Forestry programs that are a benefit to GRSG will continue. TMA-5.1: Continue statewide resource programs, including: • Native seed collection, cleaning, bagging, storage, and application with quad seeders and seed drills. • Private landowner technical assistance, project implementation and cost share grants for Pinyon and/or Juniper removal (Forest Health) in sagebrush habitats; fuels reduction; green stripping; prescribed fire; and related habitat improvements on		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				nonfederal lands. • Federal and state land project implementation through contracts for numerous vegetation improvement projects, water developments, timber stand improvements, fuels reduction, and green stripping. TMA-5.2: Continue statewide fire programs, including: • Fuels reduction planning, technical assistance, cost share grants and project implementation on state and private lands as well as assisting federal agency projects. • The Nevada Division of Forestry Wildland Fire Program to		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				improve wildfire management in participating counties through strengthened initial attack, landowner education, improved coordination with federal land managers, and fuels reduction. TMA-5.3: Continue the Nevada Division of Forestry Conservation Camp Program that: Provides a trained statewide labor force that can be utilized for numerous GRSG mitigation activities and for wildland fire suppression (State of Nevada 2004).		
Action A-FFM-HFM 20: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 20: Prioritize native seed allocation for use in GRSG habitat in years when preferred native seed	Action C-FFM-HFM 20: Livestock and other disturbed areas will be seeded with local native ecotypes of shrubs, grasses and	Action D-FFM-HFM 20: In PHMA and GHMA, give preference to use of native seeds for restoration based on	Action E-FFM-HFM 20: TMA-4.2: Continue the expansion of, and improvements to, the Nevada Division of	Action F-FFM-HFM 20: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	is in short supply. This may require reallocation of native seed from Emergency Stabilization and Rehabilitation (ESR) (BLM) and/or Burn Area Emergency Rehabilitation (Forest Service) projects outside of PHMA to those inside it. Use of native plant seeds for ESR or Burn Area Emergency Rehabilitation seedings is required based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, nonnative seeds may be used as long as they meet GRSG habitat conservation objectives (Pyke 2011). Re-establishment of	forbs.	availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, nonnative seeds may be used as long as they support GRSG habitat objectives. Choose native plant species outlined in ESDs (Forest Service may use a similar process), where available, to re-vegetate sites. If the commercial supply of appropriate native seed/plants is limited, work with the BLM Native Plant Materials Development Program or NRCS Plant Material Program through your respective State or Forest Supervisor's Office Plant Conservation	Forestry Seedbank & Plant Material program in conjunction with Federal, state and local jurisdiction partners. Utilize Nevada Division of Forestry conservation camp crews to collect native and adapted seed, and for other appropriate rehabilitation activities. Improve storage capabilities for native seed and desirable species that provide a competitive advantage over invasive species; and, improve storage capabilities to promote longevity of available seed.		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	appropriate sagebrush species/subspecies and important understory plants, relative to site potential, shall be the highest priority for rehabilitation efforts.		Program Lead. If currently available supplies are limited, use the materials that provide the greatest benefit for GRSG. In all cases seed must be certified weed-free.			
Action A-FFM-HFM 21: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 21: Design post ESR and Burn Area Emergency Rehabilitation management to ensure long-term persistence of seeded or pre-burn native plants. This may require temporary or long-term changes in livestock grazing, wild horse and burro, and travel management to achieve and maintain the desired condition of ESR and Burn Area Emergency Rehabilitation projects to benefit GRSG (Eiswerth and Shonkwiler 2006).	Action C-FFM-HFM 21: Same as Alternative A.	Action D-FFM-HFM 21: —	Action E-FFM-HFM 21: TMA-4.1: Complete burn severity assessments and identify ecological site potential in, and in proximity to, the SGMA to identify the areas with the highest potential for restoration of habitat functions following fires. Focus rehabilitation efforts on areas of highest potential success based ecological site conditions (soils, precipitation zone, and geography). Utilize revegetation seed mixtures that include native and adapted plant seed	Action F-FFM-HFM 21: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				that will quickly stabilize soils, help to provide long-term hazardous fuels reduction, and increase ecosystem resiliency in appropriate locations.		
Action A-FFM-HFM 22: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 22: Consider potential changes in climate (Miller at al. 2011) when proposing post-fire seedings using native plants. Consider seed collections from the warmer component within a species' current range for selection of native seed. (Kramer and Havens 2009).	Action C-FFM-HFM 22: Same as Alternative A.	Action D-FFM-HFM 22: Same as Alternative A.	Action E-FFM-HFM 22: —	Action F-FFM-HFM 22: Same as Alternative B.	
Action A-FFM-HFM 23: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 23: —	Action C-FFM-HFM 23: —	Action D-FFM-HFM 23: —	Action E-FFM-HFM 23: —	Action F-FFM-HFM 23: Establish and strengthen networks with seed growers to assure availability of native seed for ESR projects.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 24: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 24: —	Action C-FFM-HFM 24: —	Action D-FFM-HFM 24: —	Action E-FFM-HFM 24: —	Action F-FFM-HFM 24: Post fire recovery must include establishing adequately sized exclosures (free of livestock grazing) that can be used to assess recovery.	
Action A-FFM-HFM 25: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 25: —	Action C-FFM-HFM 25: —	Action D-FFM-HFM 25: —	Action E-FFM-HFM 25: —	Action F-FFM-HFM 25: Livestock grazing should be excluded from burned areas until woody and herbaceous plants achieve GRSG habitat objectives.	
Action A-FFM-HFM 26: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 26: —	Action C-FFM-HFM 26: —	Action D-FFM-HFM 26: —	Action E-FFM-HFM 26: —	Action F-FFM-HFM 26: Where burned GRSG habitat cannot be fenced from other unburned habitat, the entire area (e.g., allotment/ pasture) should	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
					be closed to grazing until recovered.	
Action A-FFM-HFM 27: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 27: —	Action C-FFM-HFM 27: Mowing of grass will be used in any fuel break fuels reduction project (roadsides or other areas).	Action D-FFM-HFM 27: —	Action E-FFM-HFM 27: —	Action F-FFM-HFM 27: —	
Action A-FFM-HFM 28: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 28: —	Action C-FFM-HFM 28: —	Action D-FFM-HFM 28: —	Action E-FFM-HFM 28: Protect, maintain and improve sagebrush habitat statewide over time by treating, rehabilitating and restoring at least as many acres of GRSG habitat as are lost to wildfire.	Action F-FFM-HFM 28: —	
Action A-FFM-HFM 29: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 29: —	Action C-FFM-HFM 29: —	Action D-FFM-HFM 29: —	Action E-FFM-HFM 29: Utilize the Nevada Sagebrush Ecosystem Council and the Nevada Sagebrush Ecosystem Technical Team to collect and consolidate funding and develop common	Action F-FFM-HFM 29: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				criteria and requirements for habitat protection, restoration and monitoring.		
Action A-FFM-HFM 30: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 30: —	Action C-FFM-HFM 30: —	Action D-FFM-HFM 30: —	Action E-FFM-HFM 30: Support the Nevada Division of Forestry's "Wildland Fire Protection Program," a statewide comprehensive wildfire management program that engages all interagency partners (federal, state & local), to reduce the threats of catastrophic wildfire, rapidly suppress wildfires, and rehabilitate lands damaged by wildfire.	Action F-FFM-HFM 30: —	
Action A-FFM-HFM 31: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 31: —	Action C-FFM-HFM 31: —	Action D-FFM-HFM 31: —	Action E-FFM-HFM 31: Continue the expansion and implementation of proactive solutions that are market-based, flexible, and take advantage of	Action F-FFM-HFM 31: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				economies of scale.		
Action A-FFM-HFM 32: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 32: —	Action C-FFM-HFM 32: —	Action D-FFM-HFM 32: —	Action E-FFM-HFM 32: Continue successful landscape level habitat assessments in, and in proximity to, the SGMA to identify those habitat areas that are at the highest risk of wildland fire.	Action F-FFM-HFM 32: —	
Action A-FFM-HFM 33: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 33: —	Action C-FFM-HFM 33: —	Action D-FFM-HFM 33: —	Action E-FFM-HFM 33: Continue to support a business environment that incentivizes beneficial uses of biomass and excess fuels (e.g. stewardship, contracting, and landscape-level long-term projects).	Action F-FFM-HFM 33: —	
Action A-FFM-HFM 34: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 34: —	Action C-FFM-HFM 34: —	Action D-FFM-HFM 34: —	Action E-FFM-HFM 34: Continue to identify and utilize all cross-boundary authorities available to improve project coordination and implementation on	Action F-FFM-HFM 34: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				the ground.		
Action A-FFM-HFM 35: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 35: —	Action C-FFM-HFM 35: —	Action D-FFM-HFM 35: —	Action E-FFM-HFM 35: Continue to utilize Nevada Division of Forestry conservation camp crews for fuels reduction project implementation and as federal grant match.	Action F-FFM-HFM 35: —	
Action A-FFM-HFM 36: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 36: —	Action C-FFM-HFM 36: —	Action D-FFM-HFM 36: —	Action E-FFM-HFM 36: Continue to successfully treat existing areas of invasive vegetative that pose a threat to the SGMA through the use of herbicides, fungicides or bacteria to control cheatgrass and medusahead infestations.	Action F-FFM-HFM 36: —	
Action A-FFM-HFM 37: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 37: —	Action C-FFM-HFM 37: —	Action D-FFM-HFM 37: —	Action E-FFM-HFM 37: Update Fire Management Plans, dispatch run cards, and relevant agreements to ensure "closest forces" concepts are being	Action F-FFM-HFM 37: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				utilized at all times, particularly nonfederal suppression resources (e.g. Nevada Division of Forestry helicopters, crews, and volunteer fire departments).		
Action A-FFM-HFM 38: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 38: —	Action C-FFM-HFM 38: —	Action D-FFM-HFM 38: —	Action E-FFM-HFM 38: Establish and utilize IMTs for wildfires in the SGMA.	Action F-FFM-HFM 38: —	
Action A-FFM-HFM 39: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 39: —	Action C-FFM-HFM 39: —	Action D-FFM-HFM 39: —	Action E-FFM-HFM 39: Develop a "suitcase" interagency suppression task force for pre-positioning during high wildfire hazard periods. Activate up to three interagency "suitcase" task forces and pre-position them during Red Flag and predicted lightning events in the SGMA for initial attack response.	Action F-FFM-HFM 39: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 40: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 40: —	Action C-FFM-HFM 40: —	Action D-FFM-HFM 40: —	Action E-FFM-HFM 40: Within the SGMA, eliminate the tactic of "burning out," including backfiring unless there are direct life safety threats.	Action F-FFM-HFM 40: —	
Action A-FFM-HFM 41: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 41: —	Action C-FFM-HFM 41: —	Action D-FFM-HFM 41: —	Action E-FFM-HFM 41: Designate Occupied and Suitable Habitat in the SGMA as a "high priority value" for suppression resource allocation in the Geographical Area Coordination Centers and within the FEMA Fire Management Assistance Grant criteria.	Action F-FFM-HFM 41: —	
Action A-FFM-HFM 42: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 42: —	Action C-FFM-HFM 42: —	Action D-FFM-HFM 42: —	Action E-FFM-HFM 42: Utilize the interagency Fire Planning Assessment system to optimize utilization of fire suppression resources (e.g.	Action F-FFM-HFM 42: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				engines, aircraft, water tenders, and hand crews). Fire Program Analysis enables local and national planners to evaluate the effectiveness of alternative fire management strategies for the purpose of meeting fire and land management goals and objectives		
Action A-FFM-HFM 43: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 43: —	Action C-FFM-HFM 43: —	Action D-FFM-HFM 43: —	Action E-FFM-HFM 43: Encourage use of the State's Air National Guard C-130 Unit with the Modular Airborne Firefighting System (MAFFS) for aerial firefighting support.	Action F-FFM-HFM 43: —	
Action A-FFM-HFM 44: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 44: —	Action C-FFM-HFM 44: —	Action D-FFM-HFM 44: —	Action E-FFM-HFM 44: Increase the fleet of available heavy air tankers and develop a system for prioritizing their use to fight fires when needed.	Action F-FFM-HFM 44: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 45: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 45: —	Action C-FFM-HFM 45—	Action D-FFM-HFM 45: —	Action E-FFM-HFM 45: Eliminate policy and operational inconsistencies by returning jurisdiction over Nevada BLM lands that are currently managed by the California Surprise Field Office, placing that jurisdiction into the Carson City and Winnemucca Field Offices.	Action F-FFM-HFM 45: —	
Action A-FFM-HFM 46: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 46: —	Action C-FFM-HFM 46: —	Action D-FFM-HFM 46: —	Action E-FFM-HFM 46: Develop a specific and concise package of information on management areas within the SGMA for incoming IMTs to ensure an understanding of Nevada conservation priorities that will be included in all Delegations of Authority and Fire Management Plans.	Action F-FFM-HFM 46: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 47: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 47: —	Action C-FFM-HFM 47: —	Action D-FFM-HFM 47: —	Action E-FFM-HFM 47: Assign a local, trained resource advisor with GRSG expertise on all fire suppression responses in the SGMA.	Action F-FFM-HFM 47: —	
Action A-FFM-HFM 48: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 48: —	Action C-FFM-HFM 48: —	Action D-FFM-HFM 48: —	Action E-FFM-HFM 48: Carefully review and evaluate all burned areas within the SGMA in a timely manner to ascertain the reclamation potential for reestablishing GRSG habitat, enhancing ecosystem resiliency, and controlling invasive weed species.	Action F-FFM-HFM 48: —	
Action AFFM-HFM 49: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 49: —	Action C-FFM-HFM 49: —	Action D-FFM-HFM 49: —	Action E-FFM-HFM 49: Complete burn severity assessments and identify ecological site potential in, and in proximity to, the SGMA to identify the areas with the highest potential for restoration of habitat	Action F-FFM-HFM 49: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				functions following fires. Focus rehabilitation efforts on areas of highest potential success based ecological site conditions (soils, precipitation zone, and geography). Utilize revegetation seed mixtures that include native and adapted plant seed that will quickly stabilize soils, help to provide long-term hazardous fuels reduction, and increase ecosystem resiliency in appropriate locations.		
Action A-FFM-HFM 50: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 50: —	Action C-FFM-HFM 50: —	Action D-FFM-HFM 50: —	Action E-FFM-HFM 50: Continue the expansion of, and improvements to, the Nevada Division of Forestry Seedbank & Plant Material program in conjunction with Federal, state and local jurisdiction	Action F-FFM-HFM 50: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				partners. Utilize Nevada Division of Forestry conservation camp crews to collect native and adapted seed, and for other appropriate rehabilitation activities. Improve storage capabilities for native seed and desirable species that provide a competitive advantage over invasive species; and, improve storage capabilities to promote longevity of available seed.		
Action A-FFM-HFM 51: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 51: —	Action C-FFM-HFM 51: —	Action D-FFM-HFM 51: —	Action E-FFM-HFM 51: Continue developing plans and acquiring the necessary resources (e.g. seed collection, seeding equipment pools, and trained staff) for post fire rehabilitation activities and warehouse viable seed stockpiles.	Action F-FFM-HFM 51: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 52: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 52: —	Action C-FFM-HFM 52: —	Action D-FFM-HFM 52: —	Action E-FFM-HFM 52: Continue identifying and obtaining funding opportunities from federal, state, local, industry and land users dedicated to implementing prioritized habitat enhancement, restoration, and conservation activities.	Action F-FFM-HFM 52: —	
Action A-FFM-HFM 53: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 53: —	Action CFFM-HFM 53: —	Action D-FFM-HFM 53: —	Action E-FFM-HFM 53: Continue to focus research and monitoring efforts through demonstration projects on improving rehabilitation and revegetation successes in harsh environments.	Action F-FFM-HFM 53: —	
Action A-FFM-HFM 54: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 54: —	Action C-FFM-HFM 54: —	Action D-FFM-HFM 54: —	Action E-FFM-HFM 54: Continue statewide resource programs, including: • Native seed collection, cleaning,	Action F-FFM-HFM 54: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				bagging, storage, and application with quad seeders and seed drills. • Private landowner technical assistance, project implementation and cost share grants for Pinyon and/or Juniper removal (Forest Health) in sagebrush habitats; fuels reduction; green stripping; prescribed fire; and related habitat improvements on nonfederal lands. • Federal and state land project implementation through contracts for numerous vegetation improvement projects, water developments, timber stand improvements, fuels reduction, and green stripping.		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 55: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 55: —	Action C-FFM-HFM 55: —	Action D-FFM-HFM 55: —	Action E-FFM-HFM 55: Continue statewide fire programs, including: • Fuels reduction planning, technical assistance, cost share grants and project implementation on state and private lands as well as assisting federal agency projects. • The Nevada Division of Forestry Wildland Fire Program to improve wildfire management in participating counties through strengthened initial attack, landowner education, improved coordination with federal land managers, and fuels reduction.	Action F-FFM-HFM 55: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-HFM 56: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 56: —	Action C-FFM-HFM 56: —	Action D-FFM-HFM 56: —	Action E-FFM-HFM 56: Continue the Nevada Division of Forestry Conservation Camp Program.	Action F-FFM-HFM 56: —	
Action A-FFM-HFM 57: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 57: —	Action C-FFM-HFM 57: —	Action D-FFM-HFM 57: —	Action E-FFM-HFM 57: Continue the following statewide resource programs: • Nevada Department of Agriculture, per Nevada Revised Statute, is charged with enforcing regulation that require landowners to remove and or control invasive, noxious plants species that would otherwise alter habitat. • Biological control program that obtains, releases, and monitors a variety of agents (invertebrates & fungi) which have	Action F-FFM-HFM 57: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				been approved by USDA-APHIS, to control specific noxious weeds to restore and retain natural habitat. • Seed lot inspections are conducted to ensure the viability of seed and the absence of invasive, noxious plant species for rangeland restoration projects conducted by the BLM, Forest Service, and other local agencies, governments and groups. • Pesticide applicator education, training, and licensing to ensure that pesticide applications are conducted properly on and around habitat.		
Action A-FFM-HFM 58: No common	Action B-FFM-HFM	Action C-FFM-HFM	Action D-FFM-HFM	Action E-FFM-HFM 58: Continue Nevada	Action F-FFM-	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
action across LUPs within the sub-region. See **Section 2.10.1**.	58: —	58: —	58: —	Department of Agriculture statewide surveys for the detection of incipient invasive and noxious plants in conjunction with United States Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS) and the Nevada Department of Transportation.	HFM 58: —	
Action A-FFM-HFM 59: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-HFM 59: —	Action C-FFM-HFM 59: —	Action D-FFM-HFM 59: —	Action E-FFM-HFM 59: Continue statewide Weed Seed Free Forage and Gravel Certification Program.	Action F-FFM-HFM 59: —	
Climate Change						
Action A-FFM-CC 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-CC 1: —	Action C-FFM-CC 1: —	Action D-FFM-CC 1: Work cooperatively with multiple agencies and stakeholders to establish and maintain a network of climate monitoring sites and stations.	Action E-FFM-CC 1: See Role of Sagebrush Ecosystem Technical Team.	Action F-FFM-CC 1: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFM-CC 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFM-CC 2: —	Action C-FFM-CC 2: —	Action D-FFM-CC 2: As climate change data become available through REAs or other ecological studies, identify areas of unfragmented GRSG habitat and habitat linkages that provide the life-cycle and genetic transfer needs for GRSG. Manage the identified areas as PHMA.	Action E-FFM-CC 2: See Role of Sagebrush Ecosystem Technical Team.	Action F-FFM-CC 2: —	
Livestock Grazing						
Action A-LG 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 1: —	Action C-LG 1: No grazing will be allowed in PHMA. Livestock grazing will be phased out over a period of three years, in accordance with grazing regulations 4110.4-2.	Action D-LG 1: —	Action E-LG 1: —	Action F-LG 1: —	
Action A-LG 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 2: Within PHMA, incorporate GRSG habitat objectives and management considerations into all BLM and Forest	Action C-LG 2: —	Action D-LG 2: Within PHMA and GHMA containing GRSG nesting habitat, implement the following management actions,	Action E-LG 2: Within GRSG habitat, incorporate GRSG habitat objectives (see Table 2-2) and management considerations into all	Action F-LG 2: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	Service grazing allotments through AMPs or permit renewals and/or Forest Service Annual Operating Instructions.		if not meeting GRSG habitat objectives: • Provide periods of rest or deferment during critical herbaceous growth period • Limit grazing duration to allow plant growth sufficient to meet GRSG habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter) • Employ herd management techniques to minimize impacts of livestock on nesting habitat during the nesting season (March 1 – June 30).	BLM and Forest Service grazing allotments through allotment management plans (AMPs), multiple use decisions, or permit renewals and/or Forest Service Annual Operating Instructions. Implement appropriate prescribed grazing conservation actions at scales sufficient to influence a positive population response in GRSG habitat, such as NRCS conservation Practice Standard 528 for prescribed grazing (NRCS 2011).		
Action A-LG 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 3: In priority habitat, work cooperatively on integrated ranch planning within GRSG habitat so operations	Action C-LG 3: —	Action D-LG 3: —	Action E-LG 3: In GRSG habitat, work cooperatively on integrated ranch planning within GRSG habitat so operations	Action F-LG 3: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	with deeded/BLM and/or Forest Service allotments can be planned as single units.			with deeded land, and BLM and/or Forest Service allotments, can be planned as single units, providing flexibility and adaptive management across all ownership and not altering stocking rates on operations for progressive management decisions.		
Action A-LG 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 4: Prioritize completion of land health assessments (Forest Service may use other analyses) and processing grazing permits within PHMA. Focus this process on allotments that have the best opportunities for conserving, enhancing or restoring habitat for GRSG. Utilize BLM Ecological Site Descriptions (ESDs) (Forest Service may use other methods)	Action C-LG 4: —	Action D-LG 4: Continue land health assessments on BLM public lands or other monitoring methods on National Forest System lands in PHMA and GHMA to evaluate current conditions as compared to GRSG habitat objectives described in Table 2-11 in section 2.8.5 of this Chapter. Incorporate the results of BLM and Forest Service monitoring and land	Action E-LG 4: Continue land health assessments on BLM public lands or other monitoring methods on Forest Service-administered lands in GRSG habitat to evaluate current conditions as compared to GRSG habitat objectives described in Table 2-2. Incorporate the results of BLM and Forest Service monitoring and land health assessments into future	Action F-LG 4: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	to conduct land health assessments to determine if standards of range-land health are being met.		health assessments into future management applications to ensure progress toward meeting GRSG habitat objectives.	management applications to ensure progress toward meeting GRSG habitat objectives. Incorporate terms and conditions into grazing permits and adjust these as needed through monitoring and adaptive management to meet GRSG habitat objectives.		
Action A-LG-5: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG-5: In PHMA, conduct land health assessments that include (at a minimum) indicators and measurements of structure/condition/composition of vegetation specific to achieving GRSG habitat objectives (Doherty et al. 2011). If local/state seasonal habitat objectives are not available, use GRSG habitat recommendations from Connelly et al.	Action C-LG 5: —	Action D-LG 5: —	Action E-LG 5: Continue land health assessments on BLM public lands or other monitoring methods on Forest Service-administered lands in GRSG habitat to evaluate current conditions as compared to GRSG habitat objectives described in Table 2-2. Incorporate the results of BLM and Forest Service monitoring and land health assessments	Action F-LG 5: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	2000b and Hagen et al. 2007.			into future management applications to ensure progress toward meeting GRSG habitat objectives. Incorporate terms and conditions into grazing permits and adjust these as needed through monitoring and adaptive management to meet GRSG habitat objectives.		
Action A-LG 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 6: Develop specific objectives to conserve, enhance or restore PHMA based on BLM ESDs (Forest Service may use other methods) and assessments (including within wetlands and riparian areas). If an effective grazing system that meets GRSG habitat requirements is not already in place, analyze at least one	Action C-LG 6: —	Action D-LG 6: —	Action E-LG 6: Implement management actions (grazing decisions, Annual Operating Instructions [Forest Service only], AMP/Conservation Plan development, or other agreements) to modify grazing management to show progress toward meeting seasonal GRSG habitat objectives as defined in Table 2-2 where	Action F-LG 6: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	alternative that conserves, restores or enhances GRSG habitat in the NEPA document prepared for the permit renewal (Doherty et al. 2011; Williams et al. 2011).			current livestock grazing is identified as the causal factor of not meeting those objectives. Consider singly, or in combination, changes in: 1. Season, timing (duration) and/or rotation of use; 2. Distribution of livestock use; 3. Intensity of use; 4. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats; Briske et al. 2011); and 5. Numbers/ AUMs of livestock and other ungulates (includes temporary nonrenewable use, and nonuse). Before imposing grazing restrictions or seeking changes in livestock stocking rates or seasons of permitted use, federal agencies in		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				coordination with grazing permittees must identify and implement all economically and technically feasible livestock distribution, forage production enhancement, weed control programs, prescribed grazing systems, off-site water development by the water rights holder, shrub and pinyon and/or juniper control, livestock salting/supplementing plans, and establishment of riparian pastures and herding. (Eureka County Master Plan 2010) There shall be no unmitigated loss of AUMs.		
Action A-LG 7: No common action across LUPs within the sub-region. See	Action B-LG 7: In PHMA, manage for vegetation composition and	Action C-LG 7: —	Action D-LG 7: —	Action E-LG 7: Implement management actions (grazing decisions,	Action F-LG 7: Manage for vegetation composition and	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Section 2.10.1.	structure consistent with ecological site potential and within the reference state to achieve GRSG seasonal habitat objectives.			Annual Operating Instructions [Forest Service only], AMP/Conservation Plan development, or other agreements) to modify grazing management to show progress toward meeting seasonal GRSG habitat objectives as defined in Table 2-2 where current livestock grazing is identified as the causal factor of not meeting those objectives. Consider singly, or in combination, changes in: 1. Season, timing (duration) and/or rotation of use; 2. Distribution of livestock use; 3. Intensity of use; 4. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats; Briske et al. 2011); and	structure consistent with ecological site potential and within the reference state to achieve GRSG habitat objectives.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				5. Numbers/ AUMs of livestock and other ungulates (includes temporary nonrenewable use, and nonuse). Before imposing grazing restrictions or seeking changes in livestock stocking rates or seasons of permitted use, federal agencies in coordination with grazing permittees must identify and implement all economically and technically feasible livestock distribution, forage production enhancement, weed control programs, prescribed grazing systems, off-site water development by the water rights holder, shrub and pinyon and/or juniper control, livestock salting/supplementing plans, and		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				establishment of riparian pastures and herding. (Eureka County Master Plan 2010) There shall be no unmitigated loss of AUMs.		
Action A-LG 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 8: Implement management actions (grazing decisions, Annual Operating Instructions [Forest Service only], AMP/Conservation Plan development, or other agreements) to modify grazing management to meet seasonal GRSG habitat requirements (Connelly et al. 2011). Consider singly, or in combination, changes in: 1) Season or timing of use; 2) Numbers of livestock (includes	Action C-LG 8: —	Action D-LG 8: —	Action E-LG 8: Implement management actions (grazing decisions, Annual Operating Instructions [Forest Service only], AMP/Conservation Plan development, or other agreements) to modify grazing management to meet seasonal GRSG habitat objectives as defined in Table 2-2 where current livestock grazing is identified as the causal factor of not meeting those objectives. Consider singly, or in combination, changes	Action F-LG 8: Implement management actions (grazing decisions, AMP/Conservation Plan Development, or other plans or agreements) to modify grazing management to meet seasonal GRSG habitat requirements (Connelly et al. 2011). Consider singly, or in combination, changes in: 1) Season, timing, and/or frequency of	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
	temporary nonuse or livestock removal); 3) Distribution of livestock use; 4) Intensity of use; and 5) Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats; Briske et al. 2011).			in: 1. Season, timing (duration) and/or rotation of use; 2. Distribution of livestock use; 3. Intensity of use; 4. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats; Briske et al. 2011); and 5. Numbers/ AUMs of livestock and other ungulates (includes temporary nonrenewable use, and nonuse). Before imposing grazing restrictions or seeking changes in livestock stocking rates or seasons of permitted use, federal agencies in coordination with grazing permittees must identify and implement all economically and technically feasible livestock distribution,	livestock use 2) Numbers/AUMs of livestock (includes temporary non-use or livestock removal) 3) Distribution of livestock use 4) Intensity of livestock use 5) Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats; Briske et al. 2011).

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				forage production enhancement, weed control programs, prescribed grazing systems, off-site water development by the water rights holder, shrub and pinyon and/or juniper control, livestock salting/supplementing plans, and establishment of riparian pastures and herding. (Eureka County Master Plan 2010) There shall be no unmitigated loss of AUMs.		
Action A-LG 9: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 9: During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover. Since there is a lag in vegetation recovery following drought (Thurow and Taylor	Action C-LG 9: —	Action D-LG 9: —	Action E-LG 9: When conditions, i.e., climatic variations (such as drought) and wildfire, requiring unique or exceptional management, work to protect GRSG habitat on a case by case basis and implement adaptive management	Action F-LG 9: During drought periods, prioritize evaluating effects of drought in GRSG habitat areas relative to their biological needs, as well as drought effects on ungrazed	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation recovery that meets GRSG needs in PHMA.			to allow for vegetation recovery that meets resistance, resilience, and GRSG life cycle needs in GRSG habitat as needed on an individual allotment basis.	reference areas. Since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation recovery that meets GRSG needs in GRSG habitat areas based on GRSG habitat objectives.	
Action A-LG 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 10: Manage riparian areas and wet meadows for proper functioning condition or other similar methodology (Forest Service only) within PHMA.	Action C-LG 10: —	Action D-LG 10: Manage riparian areas and wet meadows for proper functioning condition (Forest Service may use other analysis) within PHMA and GHMA.	Action E-LG 10: Grazing management strategies for riparian areas and wet meadows should, at a minimum, maintain or achieve riparian Proper Functioning Condition (PFC) and promote brood rearing/summer habitat objectives, as described in Table 2-	Action F-LG 10: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				2, within GRSG habitat. Within GRSG habitat, manage wet meadows to maintain a component of available perennial forbs with diverse species richness to facilitate brood rearing and stabilizing riparian species (Burton et al. 2011) near where water flows to achieve or maintain PFC. Use Ecological Site Descriptions (ESDs) or locally relevant information about soils, hydrology, soil moisture, and site potential to set realistic objectives and evaluate assessments and monitoring data (Swanson et al. 2006). Also conserve or enhance wet meadow complexes to maintain or increase amount of edge and		

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Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				cover near that edge to minimize elevated mortality during the late brood rearing period (Hagen et al. 2007; Kolada et al. 2009a; Atamian et al. 2010) as observed throughout the reach of the stream/watershed and not on specific sites. Some defined areas of concentrated use may be necessary to protect and enhance the overall riparian area.		
Action A-LG 11: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 11: Within PHMA and GHMA, manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow	Action C-LG 11: No similar action	Action D-LG 11: No similar action	Action E-LG 11: Grazing management strategies for riparian areas and wet meadows should, at a minimum, maintain or achieve riparian Proper Functioning Condition (PFC) and promote brood rearing/summer habitat objectives, as described in Table 2-2, within GRSG	Action F-LG 11: Within GRSG habitats, manage wet meadows to maintain a component of perennial forbs with diverse species richness and productivity relative to site potential (e.g., reference state) to facilitate brood	

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Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	complexes to maintain or increase amount of edge and cover within that edge to minimize elevated mortality during the late brood rearing period (Hagen et al. 2007; Kolada et al. 2009a; Atamian et al. 2010).			habitat. Within GRSG habitat, manage wet meadows to maintain a component of available perennial forbs with diverse species richness to facilitate brood rearing and stabilizing riparian species (Burton et al. 2011) near where water flows to achieve or maintain PFC. Use Ecological Site Descriptions (ESDs) or locally relevant information about soils, hydrology, soil moisture, and site potential to set realistic objectives and evaluate assessments and monitoring data (Swanson et al. 2006). Also conserve or enhance wet meadow complexes to maintain or increase amount of edge and cover near that edge	rearing. Also conserve or enhance these wet meadow complexes to maintain or increase the amount of edge and cover within that edge to minimize elevated mortality during the late brood-rearing period (Hagen et al. 2007; Kolada et al. 2009; Atamian et al. 2010).	

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Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				to minimize elevated mortality during the late brood rearing period (Hagen et al. 2007; Kolada et al. 2009a; Atamian et al. 2010) as observed throughout the reach of the stream/watershed and not on specific sites. Some defined areas of concentrated use may be necessary to protect and enhance the overall riparian area.		
Action A-LG 12: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 12: Where riparian areas and wet meadows meet PFC or meet standards using other similar methodology (Forest Service only), strive to attain reference state vegetation relative to the ecological site description.	Action C-LG 12: —	Action D-LG 12: —	Action E-LG 12: Grazing management strategies for riparian areas and wet meadows should, at a minimum, maintain or achieve riparian PFC and promote brood rearing/ summer habitat objectives as described in Table 2-2 within GRSG habitat. Within GRSG habitat,	Action F-LG 12: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				manage wet meadows to maintain a component of available perennial forbs with diverse species richness to facilitate brood rearing and stabilizing riparian species (Burton et al. 2011) near where water flows to achieve or maintain PFC. Use ESDs or locally relevant information about soils, hydrology, soil moisture, and site potential to set realistic objectives and evaluate assessments and monitoring data (Swanson et al. 2006). Also conserve or enhance wet meadow complexes to maintain or increase amount of edge and cover near that edge to minimize elevated mortality during the		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				late brood rearing period (Hagen et al. 2007; Kolada et al. 2009a; Atamian et al. 2010).		
Action A-LG 13: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 13: Within PHMA, reduce hot season grazing on riparian and meadow complexes to promote recovery or maintenance of appropriate vegetation and water quality. Utilize fencing/herding techniques or seasonal use or livestock distribution changes to reduce pressure on riparian or wet meadow vegetation used by GRSG in the hot season (summer) (Aldridge and Brigham 2002; Crawford et al. 2004; Hagen et al. 2007).	Action C-LG 13: —	Action D-LG 13: In PHMA and GHMA, apply principles of prescriptive livestock grazing that control time and timing of grazing so that hot season use does not occur on an annual basis.	Action E-LG 13: Grazing management strategies for riparian areas and wet meadows should, at a minimum, maintain or achieve riparian Proper Functioning Condition (PFC) and promote brood rearing/summer habitat objectives, as described in Table 2-2, within GRSG habitat. Within GRSG habitat, manage wet meadows to maintain a component of available perennial forbs with diverse species richness to facilitate brood rearing and stabilizing riparian species (Burton et al. 2011) near where water flows to achieve or	Action F-LG 13: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				maintain PFC. Use Ecological Site Descriptions (ESDs) or locally relevant information about soils, hydrology, soil moisture, and site potential to set realistic objectives and evaluate assessments and monitoring data (Swanson et al. 2006). Also conserve or enhance wet meadow complexes to maintain or increase amount of edge and cover near that edge to minimize elevated mortality during the late brood rearing period (Hagen et al. 2007; Kolada et al. 2009a; Atamian et al. 2010) as observed throughout the reach of the stream/watershed and not on specific sites. Some defined areas of concentrated use may		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				be necessary to protect and enhance the overall riparian area.		
Action A-LG 14: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 14: Authorize new water development for diversion from spring or seep source only when PHMA would benefit from the development. This includes developing new water sources for livestock as part of an AMP/conservation plan to improve GRSG habitat.	Action C-LG 14: —	Action D-LG 14: Authorize new water development for diversion from spring or seep source when PHMA and GHMA would benefit from the development.	Action E-LG 14: Authorize new water development for diversion from spring or seep sources only when GRSG habitat would not be net negatively affected by the development. This includes developing new water sources for livestock as part of an AMP/conservation plan to improve GRSG habitat.	Action F-LG 14: Authorize no new water developments for diversion from spring or seep sources within GRSG habitat.	
Action A-LG 15: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 15: Analyze springs, seeps and associated pipelines to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within PHMA. Make	Action C-LG 15: —	Action D-LG 15: —	Action E-LG 15: Analyze springs, seeps and associated pipelines to find mutually beneficial opportunities to restore functionality to riparian areas within GRSG habitat, and allow those opportunities to be	Action F-LG 15: Analyze springs, seeps and associated water developments to determine if modifications are necessary to maintain the continuity of the predevelopment	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
	modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to GRSG.			developed.	riparian area within GRSG habitats. Make modifications where necessary, including dismantling water developments.
Action A-LG 16: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 16: In PHMA, only allow treatments that conserve, enhance or restore GRSG habitat (this includes treatments that benefit livestock as part of an AMP/Conservation Plan to improve GRSG habitat).	Action C-LG 16: —	Action D-LG 16: Unless targeted grazing is the preferred treatment, livestock grazing would not be authorized within treatment areas during implementation of each treatment. Any livestock grazing closure for the purpose of a vegetation treatment would be done through the grazing decision prior to treatment. Livestock grazing would be authorized to resume within a treatment project area after resource monitoring	Action E-LG 16: In GRSG habitat, encourage and allow vegetation treatments that conserve, enhance or adaptively restore resilience and resistance over time. This includes adaptive management as part of an AMP/Conservation Plan to improve GRSG habitat.	Action F-LG 16: Ensure that vegetation treatments create landscape patterns which most benefit GRSG. Only allow treatments that are demonstrated to benefit GRSG and retain sagebrush height and cover consistent with GRSG habitat objectives (this includes treatments that benefit livestock as part of an AMP/Conservation Plan to improve

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			data verifies the treatment objectives are being met and an appropriate grazing regime has been developed.		GRSG habitat).	
Action A-LG 17: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 17: Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PHMA to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If these seedings are part of an AMP/Conservation Plan or if they provide value in conserving or enhancing the rest of the PHMA, then no restoration would be necessary. Assess the compatibility of these seedings for GRSG habitat or as a	Action C-LG 17: —	Action D-LG 17: —	Action E-LG 17: Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to GRSG habitat to determine if additional efforts should be made to restore sagebrush or habitat of a higher quality for GRSG. If these seedings are part of an AMP/Conservation Plan or if they provide value in conserving, enhancing, or protecting the rest of the GRSG habitat, then no restoration may be necessary.	Action F-LG 17: Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to GRSG habitat to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If these seedings provide value in conserving or enhancing GRSG habitats, then no restoration would be necessary. Assess the compatibility of	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	component of a grazing system during the land health assessments (or other analyses [Forest Service only]) (Davies et al. 2011).			Assess the compatibility of these seedings for GRSG habitat or as a component of a grazing system during the land health assessments (Davies et al. 2011) (or other analyses such as the Humboldt-Toiyabe Resource Implementation Protocol for Rapid Assessment Matrices (Forest Service - HTNF 2007)	these seedings for GRSG habitat during the land health assessments.	
Action A-LG 18: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 18: In PHMA, design any new structural range improvements and location of supplements (salt or protein blocks) to conserve, enhance, or restore GRSG habitat through an improved grazing management system relative to GRSG objectives. Structural range improvements, in this	Action C-LG 18: Livestock infrastructure, including fences, spring developments, pipelines, stock ponds and other harmful facilities will be removed (active restoration).	Action D-LG 18: In PHMA and GHMA, assess and modify as needed existing structural range developments to make sure they conserve, enhance, or restore GRSG habitat.	Action E-LG 18: In GRSG habitat, ensure that the design of any new structural range improvements and plan the location of supplements (salt or protein blocks) enhance GRSG habitat or minimize impacts and to promote GRSG objectives (see Table 2-2). Structural range improvements, in this	Action F-LG 18: Avoid all new structural range developments in PHMA and GHMA unless independent peer-reviewed studies show that the range improvement structure benefits GRSG. Structural range developments, in	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	context, include but are not limited to: cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.			context, include but are not limited to: cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or their increase following construction must be considered in the project plan and then monitored, treated, and rehabilitated post-construction.	this context, include but are not limited to cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
					Consider the comparative cost of changing grazing management instead of constructing additional range developments.	
Action A-LG 19: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 19: When developing or modifying water developments in PHMA, use applicable RDFs consistent with applicable law (see Appendix C of NTT report) to mitigate potential impacts from West Nile virus (Clark et al. 2006; Doherty 2007; Walker et al. 2007; Walker and Naugle 2011).	Action C-LG 19: —	Action D-LG 19: Modify existing water development projects as needed or feasible to ensure riparian habitats in PHMA and GHMA are being maintained or improved.	Action E-LG 19: —	Action F-LG 19: Same as Alternative B.	
Action A-LG 20: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 20: In PHMA, evaluate existing structural range improvements and location of supplements (salt or	Action C-LG 20: —	Action D-LG 20: Salting and supplemental feeding locations, livestock watering and handling facilities (e.g., corrals	Action E-LG 20: Salting and supplemental feeding locations, temporary and/or mobile watering and new	Action F-LG 20: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	protein blocks) to make sure they conserve, enhance or restore GRSG habitat.		and chutes) would be located at least 0.5-mile from riparian zones, springs, and meadows, or active leks in PHMA and GHMA. The distance can be greater based on local conditions.	handling facilities (e.g., corrals and chutes) would be located at least 1/2-mile from riparian zones, springs, meadows, or 1 mile from active leks in GRSG habitat, unless the pasture is too small or another location offers equal or better habitat benefits. The distance should be based on local conditions.		
Action A-LG 21: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 21: To reduce outright GRSG strikes and mortality, remove, modify or mark fences in high risk areas within PHMA based on proximity to lek, lek size, and topography (Christiansen 2009; Stevens 2011).	Action C-LG 21: —	Action D-LG 21: Remove, modify, or mark permanent and/or temporary fences in areas of high risk for bird strikes within PHMA and GHMA. Permanent and/or temporary fences would not be located on or across active GRSG leks. Remove and re-locate existing fences that are located on or across	Action E-LG 21: To reduce GRSG strikes and mortality, remove, modify or mark fences in high risk areas within GRSG habitat based on proximity to lek, lek size, and topography (Christiansen 2009; Stevens 2011). Consideration of the utility of the fence should also be taken into consideration to ensure that its	Action F-LG 21: Remove, modify or mark fences in areas of moderate or high risk of GRSG strikes within GRSG habitat based on proximity to lek, lek size, and topography (Christiansen 2009; Stevens 2011).	

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			GRSG active leks.	removal does not promote degradation of the overall management for habitat or other objectives (Swanson et al. 2006).		
Action A-LG 22: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 22: In PHMA, monitor for, and treat invasive species associated with existing range improvements (Gelbard and Belnap 2003; Bergquist et al. 2007).	Action C-LG 22: —	Action D-LG 22: —	Action E-LG 22: In GRSG habitat, monitor, treat and if necessary, rehabilitate sites with invasive species associated with existing range improvements (Gelbard and Belnap 2003; Bergquist et al. 2007). State listed noxious weeds (NRS 555) should be given the highest priority. In general, monitor, map, treat (using IPM and associated tools), and rehabilitate sites that have invasive and noxious weed species, especially those associated with disturbance activities.	Action F-LG 22: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-LG 23: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 23: Maintain retirement of grazing privileges as an option in priority GRSG areas when the current permittee is willing to retire grazing on all or part of an allotment. Analyze the adverse impacts of no livestock use on wildfire and invasive species threats (Crawford et al. 2004) in evaluating retirement proposals.	Action C-LG 23: —	Action D-LG 23: Consider retirement of grazing privileges on all voluntary relinquishments in PHMA and GHMA where removal of livestock grazing would enhance the ability to achieve GRSG habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter).	Action E-LG 23: All permit relinquishments should be voluntary. All options to allow responsible management of livestock grazing on an allotment should be considered before any voluntary withdrawal of a grazing permit is considered, in conformance with the multiple use sections of the Taylor Grazing Act.	Action F-LG 23: Same as Alternative B.	
Action A-LG 24: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 24: —	Action C-LG 24: —	Action D-LG 24: Establish vegetation treatment project monitoring sites prior to project implementation. Measure project monitoring sites annually during the livestock grazing closure period.	Action E-LG 24: Prior to implementation, establish project monitoring sites where vegetation treatment is planned and monitor at least annually during the recovery period. To ensure effective recovery, monitoring should continue for a number of years immediately following	Action F-LG 24: Any vegetation treatment plan must include pretreatment data on wildlife and habitat condition, establish nongrazing exclosures, and include long-term monitoring where treated areas are	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				the livestock exclusion period, depending on local site conditions. To reduce the risk of fire and enhance restoration in large contiguous blocks of cheatgrass-dominated sagebrush or sage grouse habitats that are next to highly flammable cheatgrass dominated lands, create local NEPA documented plans to use, e.g. dormant season temporary nonrenewable (TNR) AUM authorizations and stewardship contracted grazing to reduce fuels in areas dominated by invasive plants (Schmelzer et al., in press). Use adaptive management to allow the use of TNR during other seasons, if science emerges demonstrating	monitored for at least three years before grazing returns. Continue monitoring for five years after livestock are returned to the area, and compare to treated, ungrazed exclosures, as well as untreated areas.	

Table 2-16
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				effectiveness of such practices. Planning should be conducted on an allotment specific basis, and may be contained in allotment management plans (AMPs), multiple use decisions, or permit renewals.	
Action A-LG 25: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 25: —	Action C-LG 25: —	Action D-LG 25: Within PHMA and GHMA, incorporate terms and conditions into grazing permits to meet GRSG habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter).	Action E-LG 25: Continue land health assessments on BLM public lands or other monitoring methods on Forest Service-administered lands in GRSG habitat to evaluate current conditions as compared to GRSG habitat objectives described in Table 2-2. Incorporate the results of BLM and Forest Service monitoring and land health assessments into future management applications to ensure	Action F-LG 25: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				progress toward meeting GRSG habitat objectives. Incorporate terms and conditions into grazing permits and adjust these as needed through monitoring and adaptive management to meet GRSG habitat objectives.		
Action A-LG 26: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 26: —	Action C-LG 26: —	Action D-LG 26: Grazing permit transfers would not be approved without review of GRSG habitat conditions. Where GRSG objectives (See Table 2-11 in section 2.8.5 of this Chapter) are not being met in an allotment and causal factors are attributable to livestock grazing, adjust the annual grazing authorization or operating instructions to reflect the allowable use	Action E-LG 26: The allotment should be meeting objectives or if not, changes should already be in place to make upwards trends possible. Waiting for a change of ownership and making changes is not consistent with the goals and objectives of this section or the state plan. (Refer to Action E LG8: in EIS)	Action F-LG 26: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			levels (as identified in Table 2-12 in section 2.8.5 of this Chapter) prior to the next grazing season. The Habitat Assessment Framework will be the tool to determine the level to which standards are or not being met.			
Action A-LG 27: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 27: —	Action C-LG 27: —	Action D-LG 27: Utilize the GRSG habitat assessment framework and adjust terms and conditions in the grazing permit renewal process where GRSG objectives (See Table 2-11 in section 2.8.5 of this Chapter) are not being met in an allotment and causes are attributable to livestock grazing. Where habitat conditions (as defined in Table 2-11 in section 2.8.5 of this Chapter)are not being met, and causal	Action E-LG 27: TMA-12: Ensure that existing grazing permits maintain or enhance habitat in the SGMA. Utilize livestock grazing when appropriate as a management tool to improve GRSG habitat quantity, quality or to reduce wildfire threats. Based on a comprehensive understanding of seasonal GRSG habitat requirements, and in conjunction with flexibility of livestock operators, encourage land	Action F-LG 27: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			factors are attributable to livestock grazing, adjust the annual grazing authorization or operating instructions to reflect the allowable use levels (as identified in Table 2-12 in section 2.8.5 of this Chapter) prior to the next grazing season. The Habitat Assessment Framework will be the tool to determine the level to which standards are or not being met.	management agencies to cooperatively make timely, seasonal range management decisions to respond to vegetation management objectives, including fuels reduction.		
Action A-LG 28: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 28: —	Action C-LG 28: —	Action D-LG 28: Under appropriate conditions implement *Drought Policy* (BLM 2011c) to protect GRSG PHMA and GHMA. Implement post-drought management to allow for vegetation recovery that meets GRSG life cycle needs in PHMA and GHMA.	Action E-LG 28: When conditions, i.e., climatic variations (such as drought) and wildfire, requiring unique or exceptional management, work to protect GRSG habitat on a case by case basis and implement adaptive management to allow for vegetation recovery	Action F-LG 28: —	

Table 2-16
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				that meets resistance, resilience, and GRSG life cycle needs in GRSG habitat as needed on an individual allotment basis.		
Action A-LG 29: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 29: —	Action C-LG 29: —	Action D-LG 29: During the annual grazing application, work with permittees to avoid concentrated turn-out locations for livestock within approximately 3 miles of known lek areas during the March 1 to May 15 period. Avoid domestic sheep use and bedding areas, and herder camps within at least 1.24 miles (2 kilometers) of known lek locations. Utilize land features and roads on maps provided to the permittee to help demarcate livestock use avoidance areas. Require terms and conditions language	Action E-LG 29: During the annual grazing application, work with permittees to avoid consistent concentrated turn-out locations for livestock within approximately 3 miles of known lek areas during the March 1 to May 15 period. During the March 1 to May 15 period, avoid domestic sheep use, bedding areas, and herder camps within at least 1.24 miles (2 kilometers) of known lek locations. Utilize land features and roads on maps provided to the permittee to help demarcate livestock	Action F-LG 29: —	

Table 2-16
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			for affected livestock grazing permits regarding livestock use during the lekking period.	use avoidance areas. Require terms and conditions language for affected livestock grazing permits regarding livestock turnout locations during the lekking period. During the lekking period, use best management practices to avoid livestock aggregation around the lekking grounds.		
Action A-LG 30: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 30: —	Action C-LG 30: —	Action D-LG 30: During the permit renewal process, include terms and conditions language regarding livestock use during the lekking period.	Action E-LG 30: Strive to improve and maintain regular communication at the allotment level between land management agency and the permittee to encourage proper management techniques. Land management agencies should coordinate with relevant state, local and tribal government agencies and permittees to	Action F-LG 30: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				conduct regular trend monitoring at the allotment level. Encourage cooperative permittee monitoring, such as described in Perryman et al 2006.		
Action A-LG 31: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 31: —	Action C-LG 31: —	Action D-LG 31: —	Action E-LG 31: Ensure that existing grazing permits maintain or enhance habitat within the SGMA. Utilize livestock grazing when appropriate as a management tool to improve GRSG habitat quantity, quality or to reduce wildfire threats. Based on a comprehensive understanding of seasonal GRSG habitat requirements, and in conjunction with flexibility of livestock operators, encourage land management agencies to cooperatively make timely, seasonal	Action F-LG 31: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				range management decisions to respond to vegetation management objectives, including fuels reduction.		
Action A-LG 32: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 32: —	Action C-LG 32: —	Action D-LG 32: —	Action E-LG 32: Promote and implement proper livestock grazing practices that promote the health of the perennial herbaceous vegetation component. Perennial grasses, especially, are strong competitors with cheatgrass (Booth et al. 2003; Chambers et al. 2007; Davies et al. 2008; Blank and Morgan 2012). Field research has demonstrated that moderate levels of livestock grazing can increase the resiliency of sagebrush communities, reduce the risk and severity	Action F-LG 32: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				of wildfire, and decrease the risk of exotic weed invasion (Davies et al. 2009 and Davies et al. 2010).		
Action A-LG 33: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG 33: —	Action C-LG 33: —	Action D-LG 33: —	Action E-LG 33: Grazing management strategies for riparian areas should, at a minimum, maintain or achieve riparian PFC. Specific management actions include riparian fencing to provide control of the season, duration or degree of herbivory, providing alternate water sources away from the riparian area, changing the grazing system, or other grazing management practices that promote herbage removal within acceptable limits.	Action F-LG 33: —	
Action A-LG 34: No common action	Action B-LG 34: —	Action C-LG 34: —	Action D-LG 34: —	Action E-LG 34: Identify and apply	Action F-LG 34: —	

Table 2-16
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.				appropriate habitat management (e.g. livestock management and vegetation treatments), and all predator control practices (e.g. control of artificial nest and roost sites, increased take, and decrease anthropogenic subsidies) that decrease the effectiveness of predators.		
Climate Change						
Action A-LG-CC 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG-CC 1: —	Action C-LG-CC 1: —	Action D-LG-CC 1: As climate change data become available through REAs or other ecological studies, identify areas of unfragmented GRSG habitat and key habitat linkages that provide the life-cycle and genetic transfer needs for GRSG. Manage the identified areas as PHMA.	Action E-LG-CC 1: To aid in planning adaptive management for the purpose of maintaining health of important forage plants (perennials needed for resilience and resistance), cooperatively strategize how various areas in GRSG habitat allotments can be managed differently each year to achieve	Action F-LG-CC 1: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				positive grazing response index scores (Perryman et al 2006; Reed et al. 1999; Wyman et al. 2006; and USDA FOREST SERVICE 1996) and meet resource objectives.		
Action A-LG-CC 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG-CC 2: —	Action C-LG-CC 2: —	Action D-LG-CC 2: Work cooperatively with multiple agencies and stakeholders to establish and maintain a network of climate monitoring sites and stations.	Action E-LG-CC 2: —	Action F-LG-CC 2: —	
Drought						
Action A-LG-D 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LG-D 1: —	Action C-LG-D 1: —	Action D-LG-D 1: Due to drought conditions, changes in livestock management may be required to protect PHMA. The Field Manager or the Forest Service District Ranger should encourage permittees to take voluntary measures to delay turnout,	Action E-LG-D 1: When conditions, i.e., climatic variations (such as drought) and wildfire, requiring unique or exceptional management, work to protect GRSG habitat on a case by case basis and implement adaptive management to allow for vegetation recovery	Action F-LG-D 1: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			reduce numbers, and adjust livestock operations. Absent voluntary measures to change livestock management by permittees, the District Manager or Forest Service District Ranger would implement appropriate changes to livestock grazing through decision or Annual Operating Instructions	that meets resistance, resilience, and GRSG life cycle needs in GRSG habitat as needed on an individual allotment basis.		
Recreation and Visitor Services						
No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-REC 1: Only allow BLM SRPs and Forest Service Recreation Special Use Authorizations (RSUAs) in PHMA that have neutral or beneficial effects on PHMA.	Action C-REC 1: Same as Alternative A.	Action D-REC 1: Allow SRPs and Forest Service Recreation Special Use Authorization (RSUA) in PHMA and GHMA that have neutral or beneficial effects on GRSG.	Action E-REC 1: All new proposed SRPs and Forest Service Recreation Special Use Authorizations (RSUA) within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of	Action F-REC 1: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-REC 2: —	Action C-REC 2: Same as Alternative A.	Action D-REC 2: No new recreation facilities would be constructed in PHMA and GHMA (e.g. Campgrounds, day-use areas, scenic	Action D-REC 2: All proposed new recreation facilities (e.g. campgrounds, day-use areas, scenic pullouts, and trailheads) within the	Action F-REC 2: Seasonally prohibit camping and other nonmotorized recreation within 4 miles of active	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			pullouts, and trailheads).	SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit	GRSG leks.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				System (see Action E-SSS-ACDM 5).	
Action A-REC 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-REC 3: —	Action C-REC 3: —	Action D-REC 3: —	Action E-REC 3: In the SGMA, continue successful programs following the avoid, minimize, and mitigate strategy for recreation and OHV impacts on GRSG habitat.	Action F-REC 3: —
Action A-REC 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-REC 4: —	Action C-REC 4: —	Action D-REC 4: —	Action E-REC 4: Study the impact caused by recreational and OHV use in GRSG habitat.	Action F-REC 4: —
Action A-REC 5: —	Action B-REC 5: —	Action C-REC 5: —	Action D-REC 5: —	Action E-REC 5: Work collaboratively through LAWGs, State, and Federal agencies to designate OHV areas outside of the SGMA.	Action F-REC 5: —
Comprehensive Travel and Transportation Management					
Action A-CTTM 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 1: In PHMA, limit motorized travel to existing roads, primitive roads, and trails at a minimum,	Action C-CTTM 1: Motorized travel would be limited to existing roads, primitive roads, and trails in PHMA.	Action D-CTTM 1: In plans that have been completed and are being implemented (e.g., Northeastern California and Forest	Action E-CTTM 1: In Core and Priority habitat limit motorized travel to existing roads, primitive roads, and	Action F-CTTM 1: Same as Alternative D.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
	until such time as travel management planning is complete and routes are either designated or closed.		Service plans), motorized travel would be limited to designated routes in PHMA and GHMA. In areas where travel planning has not been completed, motorized travel would be limited to existing routes in PHMA and GHMA.	trails at a minimum, until such time as travel management planning is complete and routes are either designated or closed.	
Action A-CTTM 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 2: —	Action C-CTTM 2: —	Action D-CTTM 2: —	Action E-CTTM 2: Work collaboratively through LAWGs, State, and Federal agencies to designate OHV areas outside of the SGMA.	Action F-CTTM 2: —
Action A-CTTM 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 3: —	Action C-CTTM 3: Same as Alternative A.	Action D-CTTM 3: —	Action E-CTTM 3: Design roads to an appropriate standard, no higher than necessary, to accommodate their intended purpose and level of use (see Appendix O).	Action F-CTTM 3: Prohibit new road construction within 4 miles of active GRSG leks, and avoid new road construction in PHMA and GHMA.
Action A-CTTM 4: No common action across LUPs within	Action B-CTTM 4: In PHMA, travel management should	Action C-CTTM 4: Some roads that intrude into lek or	Action D-CTTM 4: In PHMA and GHMA, new travel	Action E-CTTM 4: —	Action F-CTTM 4: Same as

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
the sub-region. See **Section 2.10.1**.	evaluate the need for permanent or seasonal road or area closures.	winter habitats will be removed or seasonally closed.	management plans would evaluate vehicle routes and determine the need for permanent or seasonal road closures, and mode of travel (e.g. motorcycle, ATV, and UTV) restrictions, including noise levels and speed. Where such closures or restrictions are infeasible due to administrative or public need, consider re-routing road to improve or protect GRSG habitat. Periods of seasonal road closures would be identified in the travel management plan taking into account the adverse effect on the particular life-cycle need of GRSG in the area of the seasonal closure. Routes in PHMA not required		Alternative B.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
			for public access or recreation with current administrative/agency purpose or need should be evaluate for administrative access only in the implementation-level transportation management plans.		
Action A-CTTM 5: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 5: Complete activity level travel plans within five years of the ROD. During activity level planning, where appropriate, designate routes in PHMA with current administrative/agency purpose or need to administrative access only.	Action C-CTTM 5: Same as Alternative A.	Action D-CTTM 5: Same as Alternative A.	Action E-CTTM 5: TMA-8.1: Follow a strategy that seeks to avoid conflict with GRSG by locating facilities and activities in Non-Habitat wherever possible (State of Nevada 2012).	Action F-CTTM 5: Same as Alternative B.
Action A-CTTM 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 6: In PHMA, limit route construction to realignments of existing designated routes if that realignment has a	Action C-CTTM 6: Same as Alternative A.	Action D-CTTM 6: In PHMA and GHMA, no new roads would be allowed except those necessary for public safety, administrative or	Action E-CTTM 6: All proposed new roads within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of	Action F-CTTM 6: Limit route construction to realignments of existing designated routes if that

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
	minimal impact on GRSG habitat, eliminates the need to construct a new road, or is necessary for motorist safety.		public need to accommodate valid existing rights. Limit route construction to realignments of existing routes if the realignment: 1) maintains or enhances PHMA, 2) eliminates the need to construct a new road, or 3) is necessary for public safety, 4) Minimize impacts on GRSG habitat through application of RDFs consistent with applicable law (see **Appendix D**) and other mitigation measures.	the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	realignment has a minimal impact on GRSG habitat, eliminates the need to construct a new road, or is necessary for motorist safety. Mitigate any impacts with methods that have been demonstrated to be effective to offset the loss of GRSG habitat.
Action A-CTTM 7: No common action across LUPs within	Action B-CTTM 7: In PHMA, use existing roads, or	Action C-CTTM 7: Same as Alternative	Action D-CTTM 7: In PHMA and GHMA, access to valid	Action D-CTTM 7: All proposed new anthropogenic	Action F-CTTM 7: Same as Alternative B

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
the sub-region. See **Section 2.10.1**.	realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the priority area. If that disturbance exceeds 3 % for that area, then evaluate and implement additional, effective mitigation necessary to offset the resulting loss of GRSG habitat (see Objectives).	A.	existing rights would be addressed to provide the minimum access necessary to exercise the right and maintain or enhance GRSG habitat through mitigation necessary to off-set loss to PHMA.	disturbances, including those necessary to access valid existing rights, within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to	using a 4-mile buffer from leks to determine road route.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	
Action A-CTTM 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 8: In PHMA, allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless the upgrading would have minimal impact on GRSG habitat, is necessary for motorist safety, or eliminates the need to construct a new road.	Action C-CTTM 8: Same as Alternative A.	Action D-CTTM 8: In PHMA and GHMA, allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless the upgrade would maintain or enhance GRSG habitat, provide a fuel break to protect native vegetation, is necessary for public safety, or eliminates the need to construct a new road.	Action E-CTTM 8: All proposed upgrades of existing routes, including those which would change route category (road, primitive road, or trail) within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category	Action F-CTTM 8: Allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless it is necessary for motorist safety, or eliminates the need to construct a new road. Any impacts shall be mitigated with methods that have been demonstrated to be effective to offset the loss of GRSG habitat.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				(Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	
Action A-CTTM 9: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 9: In PHMA, conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in WSAs and within lands with wilderness characteristics that have been selected for protection in	Action C-CTTM 9: Same as Alternative A.	Action D-CTTM 9: In PHMA and GHMA, close primitive roads and trails not designated in travel management plans so they are effectively closed to motorized travel.	Action E-CTTM 9: Conduct rehabilitation of roads, primitive roads, and trails not designated in travel management plans where such plans exist and have been approved for implementation. This also includes primitive route/roads that were not designated in wilderness study areas and within lands	Action F-CTTM 9: Same as Alternative B.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
	previous LUPs.			managed for wilderness characteristics that have been selected for protection, with due consideration given to any historical significance of existing trails. (See Appendix D)	
Action A-CTTM 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-CTTM 10: When reseeding roads, primitive roads and trails in PHMA, use appropriate seed mixes and consider the use of transplanted sagebrush.	Action C-CTTM 10: Same as Alternative A.	Action D-CTTM 10: In PHMA and GHMA, obliterate and seed roads, primitive roads and trails not designated in travel management plans, with appropriate seed mixes and transplanted sagebrush when applicable. Use fire resistant species to provide for fire breaks where appropriate. Seed must be certified weed-free.	Action E-CCTM 10: When reseeding roads, primitive roads, and trails, use appropriate seed mixes and consider the use of transplanted sagebrush in order to meet GRSG habitat restoration objectives. Where invasive annual grasses are present, herbicides may be used to enhance the effectiveness of any seeding and to also establish islands of desirable species for dispersion. (See	Action F-CTTM 10: When reseeding closed roads, primitive roads and trails, use appropriate native seed mixes and require the use of transplanted sagebrush.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				Appendix D)	
Lands and Realty					
Land Use Authorizations					
Action A-LR-LUA 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 1: Make PHMA exclusion areas for new BLM ROW or Forest Service Special Use Authorization (SUA) permits. Consider the following exceptions: • Within designated ROW or SUA corridors encumbered by existing ROW or SUA: new ROWs or SUAs may be co-located only if the entire footprint of the proposed project (including construction and staging), can be	Action C-LR-LUA 1: Make PHMA ROW exclusion areas including new ROWs within corridors New corridors/facilities will be sited in nonhabitat and bundled with existing corridors to the maximum extent possible.	Action D-LR-LUA 1: Designate PHMA as ROW avoidance areas for all other ROWs or SUAs. Development within avoidance areas could occur if the development incorporates appropriate RDFs, consistent with applicable law, in design and construction (e.g. noise, tall structure, and seasonal restrictions) and development results in no net un-mitigated loss of PHMA and GHMA.	Action E-LR-LUA 1: All proposed ROWs and SUAs within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-	Action F-LR-LUA 1: PHMA and GHMA shall be exclusion areas for new ROWs permits. Consider the following exceptions: • Within designated ROW corridors encumbered by existing ROW authorizations: new ROWs may be co-located only if the entire footprint of the proposed project

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	completed within the existing disturbance associated with the authorized ROWs or SUAs. Subject to valid existing rights: where new ROWs or SUAs associated with valid existing rights are required, co-locate new ROWs or SUAs within existing ROWs or SUAs or where it best minimizes impacts on GRSG. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the		Subject to valid, existing rights: where new ROWs or SUAs associated with valid existing rights are required, co-locate new ROWs or SUAs within existing ROWs or SUAs to achieve no net un-mitigated loss of PHMA.	Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5). This is similar to designation as ROW avoidance areas. Site new linear features in existing corridors or, at a minimum, co-locate with existing linear features in the SGMA.	(including construction and staging); can be completed within the existing disturbance associated with the authorized ROWs. • Subject to valid, existing rights: where new ROWs associated with valid existing rights are required, co-locate new ROWs within existing ROWs or where it best minimizes Impacts on GRSG. Use existing roads, or realignments as described above, to access valid existing rights	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	total disturbance in the priority area. If that disturbance exceeds 3% for that area, then evaluate and implement additional effective mitigation on a case-by-case basis to offset the resulting loss of GRSG habitat.				that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the priority area. If that disturbance exceeds 3% for that area, then make additional mitigation that has been demonstrated to be effective to offset the resulting loss of GRSG habitat.	
Action A-LR-LUA 2: No common action	Action B-LR-LUA 2: Evaluate and take	Action C-LR-LUA 2: Same as Alternative	Action D-LR-LUA 2: Where appropriate,	Action E-LR-LUA 2: Bury distribution	Action F-LR-LUA 2: Same as	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.	advantage of opportunities to remove, bury, or modify existing power lines within PHMA.	A.	bury new and existing utility lines as mitigation unless not technically feasible.	power lines of up to 35kV where ground disturbance can be minimized. Where technology and economic factors allow, bury higher kV power lines. (See Appendix D).	Alternative B	
Action A-LR-LUA 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 3: Where existing leases or ROWs or SUAs have had some level of development (e.g., road, fence, or well) and are no longer in use, reclaim the site by removing these features and restoring the habitat.	Action C-LR-LUA 3: Same as Alternative A.	Action D-LR-LUA 3: In PHMA and GHMA where existing ROWs or SUAs are no longer in use, coordinate with the lease holder or Forest Service Special Use Permit holder to relinquish the ROW or SUA and reclaim the site by removing overhead lines and other infrastructure.	Action E-LR-LUA 3: Where existing leases or rights-of-way (ROWs) have had some level of development (e.g., road, fence, or well) and are no longer in use, reclaim the site by removing these features, without interfering with valid pre-existing rights, and restoring the habitat. (See Appendix D).	Action F-LR-LUA 3: Same as Alternative B	
Action A-LR-LUA 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 4: Planning Direction Note: Relocate existing designated ROW corridors crossing PHMA void	Action C-LR-LUA 4: Same as Alternative A.	Action D-LR-LUA 4: —	Action E-LR-LUA 4: —	Action F-LR-LUA 4: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	of any authorized ROWs, outside of the PHMA. If relocation is not possible, undesignate that entire corridor during the planning process.					
Action A-LR-LUA 5: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 5: Make GHMA "avoidance areas" for new ROWs or SUAs.	Action C-LR-LUA 5: See Action C-LR-LUA 1.	Action D-LR-LUA 5: Designate GHMA as ROW avoidance areas for new communication site ROWs or SUAs. Development within avoidance areas could occur if the development incorporates appropriate RFDs in design and construction (e.g. noise, tall structure, and seasonal restrictions) and development results in no net un-mitigated loss of PHMA or GHMA.	Action E-LR-LUA 5: All proposed new communication site ROWs and SUAs within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action	Action F-LR-LUA 5: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5). This is similar to designation as ROW avoidance areas.		
Action A-LR-LUA 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 6: Where new ROWs or SUAs are necessary in GHMA, co-locate new ROWs or SUAs within existing ROWs or SUAs where possible.	Action C-LR-LUA 6: Same as Alternative A.	Action D-LR-LUA 6: In PHMA and GHMA, co-locate new utility (e.g., power or telephone) lines with other existing linear surface ROWs, such as roads and pipelines.	Action E-LR-LUA 6: TMA-18.6: Site new linear features in existing corridors or, at a minimum, co-locating with existing linear features in the SGMA.	Action F-LR-LUA 6: —	
Action A-LR-LUA 7: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 7: —	Action C-LR-LUA 7: —	Action D-LR-LUA 7: Manage landfills and transfer stations on public lands to reduce opportunities for nesting, cover, or	Action E-LR-LUA 7: TMA-9.3: Continue successful programs that have eliminated external food sources for ravens,	Action F-LR-LUA 7: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			perches for predators. Identify and close trespass landfills and dumps on public lands.	particularly landfills, waste transfer facilities, and road kill that subsidize raven populations. Enforce existing State laws that require daily covering of landfills. Continue to reduce and minimize external food sources for ravens: particularly landfills, waste transfer facilities, and road kill that subsidize raven populations.		
Action A-LR-LUA 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 8: —	Action C-LR-LUA 8: —	Action D-LR-LUA 8: —	Action E-LR-LUA 8: The Nevada Sagebrush Ecosystem Council and the Nevada Sagebrush Ecosystem Technical Team will meet energy goals and GRSG conservation measures through close coordination with all interest groups and adherence to NRS 701.610 (amended by the	Action F-LR-LUA 8: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				2011 Nevada Legislature) that requires state agency review of all energy development proposals. Attention will be focused on the series of transmission corridors currently being studied to consider the longer term transmission needs required to meet the nation's renewable energy demands. On federal lands, activities that have an approved BLM notice, plan of operation, ROW, or drilling plan, and on State/Private lands, projects with an approved Nevada Division of Environmental Protection permit, are exempt from any new mitigation requirements above and beyond what has already been		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				stipulated in the projects' approvals.		
Action A-LR-LUA 9: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 9: —	Action C-LR-LUA 9: —	Action D-LR-LUA 9: —	Action E-LR-LUA 9: Follow a strategy that seeks to avoid conflict with GRSG by locating facilities and activities in Non-Habitat wherever possible.	Action F-LR-LUA 9: —	
Action A-LR-LUA 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 10: —	Action C-LR-LUA 10: —	Action D-LR-LUA 10: —	Action E-LR-LUA 10: In the SGMA, limit conflict through avoidance and minimization of impacts, adaptive management, and appropriate mitigation	Action F-LR-LUA 10: —	
Action A-LR-LUA 11: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 11: —	Action C-LR-LUA 11: —	Action D-LR-LUA 11: —	Action E-LR-LUA 11: Energy developers will work closely with state and federal agency experts to determine important nesting, brood rearing and winter habitats and avoid those areas.	Action F-LR-LUA 11: —	
Action A-LR-LUA 12: No common action across LUPs within	Action B-LR-LUA 12: —	Action C-LR-LUA 12: —	Action D-LR-LUA 12: —	Action E-LR-LUA 12: A company representative will	Action F-LR-LUA 12: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
the sub-region. See **Section 2.10.1**.				provide environmental training to on-site personnel and be responsible for overseeing compliance with all protective measures and coordination in accordance with the permitting authority.		
Action A-LR-LUA 13: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 13: —	Action C-LR-LUA 13: —	Action D-LR-LUA 13: —	Action E-LR-LUA 13: Vehicle trips shall be limited to those times that least impact nesting or wintering GRSG.	Action F-LR-LUA 13: —	
Action A-LR-LUA 14: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 14: —	Action C-LR-LUA 14: —	Action D-LR-LUA 14: —	Action E-LR-LUA 14: Current transmission and generation siting and construction practices to be reviewed and potentially refined by the Nevada Sagebrush Ecosystem Council and Nevada Sagebrush Ecosystem Technical Team pursuant to the "Resource Selection	Action F-LR-LUA 14: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				Function Model" (Coates) and other best available science include proximity to active leks and nesting habitat, relation to migratory and nonmigratory populations, and relation to movement corridors.		
Action A-LR-LUA 15: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 15: —	Action C-LR-LUA 15: —	Action D-LR-LUA 15: Eliminate existing raven nesting opportunities created by anthropogenic development on public lands (e.g., remove infrastructure, power line, and communication facilities no longer in service).	Action E-LR-LUA 15: Remove power lines that traverse important GRSG habitats when facilities being serviced are no longer in use or when projects are completed (see Appendix D).	Action F-LR-LUA 15: —	.
Action A-LR-LUA 16: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LUA 16: —	Action C-LR- LUA 16: —	Action D-LR-LUA 16: In PHMA and GHMA, require ROW holders to retro-fit existing power lines and other utility structure with perch-	Action E-LR-LUA 16: Work with existing rights-of-way holders to encourage installation of perch guards on all poles where existing utility	Action F-LR- LUA 16: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			deterring devices during ROW renewal process.	poles are located within 5 km (3.2 miles) of known leks (Coates et al. 2013) (see Appendix D).		
Action A-LR- LUA 17: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR- LUA 17: —	Action C-LR- LUA 17: —	Action D-LR-LUA 17: —	Action E-LR- LUA 17: Development or infrastructure features should not be placed within a 0.6 mile (1 km) radius around seeps, springs and wet meadows within identified brood rearing habitats wherever possible. These features can provide a competitive advantage for avian predators; therefore increasing GRSG mortality during a period when birds may be susceptible.	Action F-LR- LUA 17: —	
Action A-LR- LUA 18: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR- LUA 18: —	Action C-LR- LUA 18: —	Action D-LR-LUA 18: Do not designate new utility corridors in PHMA and GHMA.	Action E-LR-LUA 18: Proposed new utility corridors within the SGMA will trigger SETT Consultation (See Action E-SSS-	Action F-LR- LUA 18: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-LR-LUA 19: —	Action B-LR-LUA 19: —	Action C-LR-LUA 19: —	Action D-LR-LUA 19: —	Action E-LR-LUA 19: Aggressively engage in reclamation/weed control efforts during pre-and post-project construction.	Action F-LR-LUA 19: —	
Action A-LR-LUA 20: —	Action B-LR-LUA 20: —	Action C-LR-LUA 20: —	Action D-LR-LUA 20: —	Action E-LR-LUA 20: Apply measures to deter raptor perching and raven nesting on elevated structures	Action F-LR-LUA 20: —	
Land Tenure						
Action A-LR-LT 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LT 1: Retain public ownership of PHMA. Consider exceptions where: • There is mixed ownership, and land exchanges would allow for additional or more contiguous federal ownership patterns within the PHMA. Under PHMA with minority federal ownership, include an additional, effective mitigation agreement	Action C-LR-LT 1: All public lands in ACECs, PHMA, and identified restoration and rehab land areas will be retained in public ownership.	Action D-LR-LT 1: Retain public ownership of PHMA and GHMA. Consider exceptions when: • Disposal and/or acquisitions of public lands would allow for more contiguous federal ownership patterns within the GRSG habitat area, or where a land tenure adjustment would result in a net gain in amount or quality of GRSG habitat.	Action E-LR-LT 1: —	Action F-LR-LT 1: Same as Alternative B, without exceptions for disposal to consolidate ownership that would be beneficial to GRSG.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	for any disposal of federal land. As a final preservation measure consideration should be given to pursuing a permanent conservation easement.					
Action A-LR-LT 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-LT 2: Where suitable conservation actions cannot be achieved in PHMA, seek to acquire state and private lands with intact subsurface mineral estate by donation, purchase or exchange in order to best conserve, enhance or restore GRSG habitat.	Action C-LR-LT 2: BLM and Forest Service will strive to acquire important private lands in BLM-designated ACECs and Forest Service GRSG Special Areas. Acquisition will be prioritized over easements.	Action D-LR-LT 2: Where significant conservation actions could be achieved in PHMA, seek to acquire lands with intact subsurface mineral estate by donation, purchase, or exchange in order to best conserve, enhance or restore GRSG habitat.	Action E-LR-LT 2: —	Action F-LR-LT 2: —	
Withdrawals						
Action A-LR-W 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-W 1: Propose lands within PHMA recommended for mineral withdrawal.	Action C-LR-W 1: Propose lands within PHMA recommended for mineral withdrawal.	Action D-LR-W 1: Same as Alternative A.	Action E-LR-W 1: —	Action F-LR-W 1: Same as Alternative B.	
Action A-LR-W 2: No common action across LUPs within	Action B-LR-W 2: In PHMA, do not recommend	Action C-LR-W 2: Same as Alternative	Action D-LR-W 2: Same as Alternative	Action E-LR-W 2: —	Action F-LR-W 2: Do not approve withdrawal	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
the sub-region. See **Section 2.10.1**.	withdrawal proposals not associated with mineral activity unless the land management is consistent with GRSG conservation measures. (For example; in a proposed withdrawal for a military training range buffer area, manage the buffer area with GRSG conservation measures.)	A.	A.		proposals not associated with mineral activity unless the land management is consistent with GRSG conservation measures. (For example, in a proposed withdrawal for a military training range buffer area, manage the buffer area with GRSG conservation measures that have been demonstrated to be effective.	
Action A-LR-W 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-W 3: —	Action C-LR-W 3: ROWs will be amended to require features that enhance GRSG habitat security. Existing designated corridors in BLM ACECs and Forest Service Special Areas	Action D-LR-W 3: —	Action E-LR-W 3: —	Action F-LR-W 3: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
		may be accessed for maintenance.				
Action A-LR-W 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-W 4: —	Action C-LR-W 4: —	Action D-LR-W 4: In priority and general habitat, no new road ROWs would be authorized except those necessary for public safety or administrative or public need tied to valid existing rights. Limit route construction to realignments of existing ROWs if the realignment: 1) maintains or enhances priority GRSG habitat, 2) eliminates the need to authorize a new ROW to construct a new road, or 3) is necessary for public safety, New ROW authorizations would be evaluated on a case-by-case basis. If	Action E-LR-W 4: All proposed new road ROWs within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and	Action F-LR-W 4: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			new road construction is necessary, minimize impacts on GRSG habitat through application of RDFs and other mitigation measures consistent with applicable law.	Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-LR-W 5: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-W 5: —	Action C-LR-W 5: —	Action D-LR-W 5: Within PHMA and GHMA, allow industrial coal-fired or natural gas-fired energy facilities associated with existing industrial infrastructure (e.g. a mine site) to provide on-site power generation.	Action E-LR-W 5: All proposed industrial coal-fired or natural-gas fired energy facilitates associated with existing infrastructure (e.g. a mine site) within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process"	Action F-LR-W 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-LR-W 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-W 6: —	Action C-LR-W 6: —	Action D-LR-W 6: Lands that are acquired (exchange, purchase or easement) for GRSG habitat, would be managed as PHMA.	Action E-LR-W 6: —	Action F-LR-W 6: —	
Wind Energy Development						
Action A-LR-WED 1: No common action across LUPs within the sub-region. See	Action B-LR-WED 1: Make PHMA exclusion areas for utility-scale	Action C-LR-WED 1: Make PHMA exclusion areas for utility-scale	Action D-LR-WED 1: Designate PHMA and GHMA as ROW exclusion for utility-	Action E-LR-WED 1: All proposed utility-scale commercial wind energy facilities	Action F-LR-WED 1: Do not site wind energy development in	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Section 2.10.1.	commercial wind energy facilities. Make GHMA avoidance areas for utility-scale commercial wind energy facilities.	commercial wind energy facilities.	scale commercial wind energy facilities (facilities that generate large amounts of electricity that is delivered to many users through transmission and distribution systems).	within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit	PHMA and GHMA (Jones 2012).	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				System (see Action E-SSS-ACDM 5).		
Action A-LR-WED 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-WED 2: —	Action C-LR-WED 2: —	Action D-LR-WED 2: —	Action E-LR-WED 2: All proposed utility-scale commercial wind energy facilities within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action	Action F-LR-WED 2: Site wind energy development at least five miles from active GRSG leks.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-LR-WED 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-WED 3: —	Action C-LR-WED 3: —	Action D-LR-WED 3: Within PHMA and GHMA allow industrial wind facilities associated with existing industrial infrastructure (e.g. a mine site) to provide on-site power generation.	Action E-LR-WED 3: All proposed industrial wind energy facilities associated with existing industrial infrastructure (e.g. a mine site) within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the	Action F-LR-WED 3: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix)D to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Industrial Solar						
Action A-LR-IS 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-IS 1: — Designate PHMA and GHMA as ROW exclusion for utility-scale solar energy facilities on BLM land. Designate PHMA as open and GHMA as ROW avoidance for utility-scale solar energy facilities on	Action C-LR-IS 1: Designate PHMA and ACECs as ROW exclusion for utility-scale solar energy facilities.	Action D-LR-IS 1: Designate PHMA and GHMA as ROW exclusion for utility-scale solar energy facilities.	Action E-LR-IS 1: All proposed utility-scale commercial solar energy facilities within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of	Action F-LR-IS 1: Designate PHMA and GHMA as ROW exclusion for utility-scale solar energy facilities.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	Forest Service Lands.			GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-LR-IS 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-IS 2: —	Action C-LR-IS 2: —	Action D-LR-IS 2: Within PHMA and GHMA, allow industrial solar energy facilities associated with existing industrial	Action E-LR-IS 2: All proposed industrial solar energy facilities associated with existing infrastructure (e.g. a mine site) within the SGMA will	Action F-LR-IS 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			infrastructure (e.g. a mine site) to provide on-site power generation.	trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				SSS-ACDM 5).		
Urbanization						
Action A-LR-U 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LR-U 1: —	Action C-LR-U 1: —	Action D-LR-U 1: —	Action E-LR-U 1: TMA-20: When a county or city considers a change to its master plan for a land use of higher intensity affecting the SGMA, the county or city should consult with the Nevada Sagebrush Ecosystem Council through its Nevada Sagebrush Ecosystem Technical Team.	Action F-LR-U 1: —	
Leased Federal Fluid Mineral Estate						
Action A-FFME 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 1: In PHMA, apply actions through LUP implementation decisions (e.g., approval of an Application for Permit to Drill, and Sundry Notice) and	Action C-FFME 1: Same as Alternative B.	Action D-FFME 1: —	Action E-FFME 1: —	Action F-FFME 1: Apply the following conservation measures as COAs at the project and well permitting stages, and through RMP	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	upon completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is "reasonable" (43 CFR 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.				implementation decisions and upon completion of the environmental record of review (43 CFR § 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is "reasonable" (43 CFR § 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved RMP.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFME 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 2: In PHMA, provide the following conservation measures as terms and conditions of the approved LUP: Do not allow new surface occupancy on federal leases within PHMA, this includes winter concentration areas (Doherty et al. 2008; Carpenter et al. 2010) during any time of the year. Consider an exception: • If the lease is entirely within PHMA, apply a 4-mile NSO around the lek, and limit permitted disturbances to 1 per section with no more than 3% surface disturbance in that section. • If the entire lease is within the 4-mile lek perimeter, limit permitted	Action C-FFME 2: Same as Alternative B.	Action D-FFME 2: —	Action E-FFME 2: All proposed surface disturbances on leased federal fluid mineral estates, within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and	Action F-FFME 2: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	disturbances to 1 per section with no more than 3% surface disturbance in that section. Require any development to be placed at the most distal part of the lease from the lek, or, depending on topography and other habitat aspects, in an area that is less demonstrably harmful to GRSG.			Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-FFME 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 3: Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and early brood-rearing season in all PHMA during this period.	Action C-FFME 3: Timing avoidance periods will be required.	Action D-FFME 3: Apply requisite seasonal restriction on exploratory drilling that prohibits surface-disturbing activities in winter habitat and during the lekking, nesting, and early brood-rearing season in all PHMA. See **Appendix N**, Leasable Mineral Stipulations, Waivers, Modifications, and	Action E-FFME 3: During the period specified, manage discretionary surface disturbing activities and uses to prevent disturbance to GRSG during life cycle periods. Seasonal protection is identified for the following: -Seasonal protection within three (3) miles of active GRSG leks	Action F-FFME 3: Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and brood-rearing season in all PHMA and GHMA during this period. This seasonal	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			Exceptions.	from March 1 through June 15 during lekking hours of 1-hour before sunrise until 10:00 am -Seasonal protection of GRSG suitable wintering areas from November 1 through March 31; -Seasonal protection of GRSG suitable brood-rearing habitat from May 15 to August 15. (See Appendix D)	restriction shall also to apply to related activities that are disruptive to GRSG, including vehicle traffic and other human presence.	
Action A-FFME 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 4: BLM should closely examine the applicability of categorical exclusions in PHMA. If extraordinary circumstances review is applicable, BLM should determine whether those circumstances exist.	Action C-FFME 4: Same as Alternative B.	Action D-FFME 4: —	Action E-FFME 4: —	Action F-FFME 4: Same as Alternative B.	
Action A-FFME 5: No common action	Action B-FFME 5: Complete Master	Action C-FFME 5: Same as Alternative	Action D-FFME 5: —	Action E-FFME 5: —	Action F-FFME 5: Same as	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.	Development Plans in lieu of APD-by-APD processing for all but wildcat wells.	B.			Alternative B.	
Action A-FFME 6: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 6: When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3% for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of GRSG (see Objectives). o When necessary, conduct additional, effective mitigation in 1) PHMA or – less preferably – 2) GHMA (dependent upon the area-specific ability to increase	Action C-FFME 6: Same as Alternative B.	Action D-FFME 6: On leased federal fluid mineral estate, when permitting Master Development Plans in PHMA on leases not yet developed, the proposed surface disturbance must achieve no net unmitigated loss of PHMA. Apply requisite seasonal restrictions on exploratory drilling that prohibits surface-disturbing activities in winter habitat and during the lekking, nesting, and early brood-rearing season in all PHMA. When necessary, prioritize and conduct additional mitigation: • Within the same	Action E-FFME 6: All proposed surface disturbances on leased federal fluid mineral estates, within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-	Action F-FFME 6: When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3% <u>per section</u> for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of GRSG (see Objectives). o When necessary, conduct additional, effective mitigation in	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	GRSG populations). o Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same Management Zone as the impact, per 2006 WAFWA Strategy – pg. 2-17.		population area where the impact is realized; or Within the same WAFWA Management Zone as the impact, unless greater population benefits can be realized outside the population area or WAFWA management zone, subject to BLM and State Wildlife agency consultation and agreement.	Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	PHMA and GHMA (dependent upon the area-specific ability to increase GRSG populations). o Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same Management Zone as the impact, per 2006 WAFWA Strategy – pg. 2-17.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFME 7: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 7: Require unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring) to minimize adverse impacts on GRSG according to the Federal Lease Form, 3100-11, Sections 4 and 6.	Action C-FFME 7: Same as Alternative B.	Action D-FFME 7: —	Action E-FFME 7: —	Action F-FFME 7: Same as Alternative B.	
Action A-FFME 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 8: Identify areas where acquisitions (including subsurface mineral rights) or conservation easements, would benefit GRSG habitat.	Action C-FFME 8: Same as Alternative B.	Action D-FFME 8: —	Action E-FFME 8: —	Action F-FFME 8: Same as Alternative B.	
Action B-FFME 9: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 9: For future actions, require a full reclamation bond specific to the site in accordance with 43 CFR 3104.2, 3104.3, and 3104.5. Insure bonds are sufficient	Action C-FFME 9: Same as Alternative B.	Action D-FFME 9: —	Action E-FFME 9: —	Action F-FFME 9: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	for costs relative to reclamation (Connelly et al. 2000a, Hagen et al. 2007) that would result in full restoration of the lands to the condition it was found prior to disturbance. Base the reclamation costs on the assumption that contractors for the BLM or Forest Service will perform the work.					
Action A-FFME 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 10: Make applicable RDFs consistent with applicable law (see Appendix D of the NTT Report) mandatory as COAs within priority GRSG habitat.	Action C-FFME 10: Same as Alternative B.	Action D-FFME 10: On leased federal fluid mineral estate (where no APD has been issued), RDFs would be attached as lease notices consistent with applicable law.	Action E-FFME 10: On lease fluid mineral estate, Site-Specific Consultation Based Design Features will be required and determined through the SETT Consultation process (see Appendix D).	Action F-FFME 10: Same as Alternative B.	
Action A-FFME 11: No common action across LUPs within	Action B-FFME 11: —	Action C-FFME 11: Agencies will explore options to amend,	Action D-FFME 11: —	Action E-FFME 11: —	Action F-FFME 11: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
the sub-region. See **Section 2.10.1**.		cancel, or buy out leases in ACECs and PHMA.				
Action A-FFME 12: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 12: —	Action C-FFME 12: Include conditions that require relinquishment of leases/authorizations if doing so will: 1) mitigate the impact of a proposed development, or 2) mitigate the unanticipated impacts of an approved development.	Action D-FFME 12: —	Action E-FFME 12: —	Action F-FFME 12: —	
Action A-FFME 13: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 13: —	Action C-FFME 13: No waivers will be issued.	Action D-FFME 13: —	Action E-FFME 13: —	Action F-FFME 13: —	
Action A-FFME 14: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 14: —	Action C-FFME 14: —	Action D-FFME 14: On leased federal fluid mineral estate within PHMA complete Master Development Plans in lieu of APD-by-APD processing for all but wildcat wells.	Action E-FFME 14: —	Action F-FFME 14: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FFME 15: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FFME 15: —	Action C-FFME 15: —	Action D-FFME 15: On leased federal fluid mineral estate within PHMA, require a full reclamation bond specific to the site. Insure bonds are sufficient for costs relative to reclamation that would result in full restoration. Base the reclamation costs on the assumption that contractors for the BLM will perform the work.	Action E-FFME 15: —	Action F-FFME 15: —	
Fluid Minerals						
Action A-FM 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FM 1: Close PHMA to fluid mineral leasing. Consider an exception when there is an opportunity for the BLM and Forest Service to influence conservation measures where surface and/or mineral ownership is not entirely federally owned (i.e.,	Action C-FM 1: Close PHMA to fluid mineral leasing.	Action D-FM 1: In un-leased federal fluid mineral estate in PHMA apply a NSO stipulation and do not allow for waivers, exceptions, or modifications to that stipulation. Upon expiration or termination of existing leases within PHMA, apply the same stipulation as	Action E-FM 1: All un-leased federal fluid mineral estate within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic	Action F-FM 1: Close PHMA and GHMA to fluid mineral leasing. Consider an exception: When there is an opportunity for the BLM to influence conservation measures where surface and/or	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	checkerboard ownership). In this case, a plan amendment may be developed that opens the priority area for new leasing. The plan must demonstrate long-term population increases in the priority area through mitigation (prior to issuing the lease) including lease stipulations and off-site mitigation, and avoid short-term losses that put the GRSG population at risk from stochastic events leading to extirpation.		above.	disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	mineral ownership is not entirely federally owned (i.e., checkerboard ownership). In this case, a plan amendment may be developed that opens GRSG habitat for new leasing. The plan must demonstrate long-term population increases in the priority area through mitigation (prior to issuing the lease) including lease stipulations, and off-site mitigation, and avoid short-term losses that put the GRSG population at risk from stochastic events leading to extirpation.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-FM 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FM 2: Same as Alternative A.	Action C-FM 2: See C-FM 1.	Action D-FM 2: In un-leased federal fluid mineral estate in GHMA, apply a NSO stipulation, but allow for waivers, exception, or modifications consistent with the objective. Upon expiration or termination of existing leases within GHMA, apply the same stipulation as above.	Action E-FM 2: All un-leased federal fluid mineral estate within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and	Action F-FM 2: See Action F-FM 1.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-FM 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FM 3: Allow geophysical exploration within PHMA to obtain exploratory information for areas outside of and adjacent to PHMA. Only allow geophysical operations by helicopter-portable drilling methods and in accordance with seasonal timing restrictions and/or other restrictions that may apply.	Action C-FM 3: Same as Alternative B.	Action D-FM 3: Allow geophysical exploration within PHMA and GHMA that does not result in crushing of sagebrush vegetation or create new or additional surface disturbance. Heli-portable drilling methods, articulated rubber-tired vehicles that "leave no trace," and vibroseis geophysical operations conducted on existing roads and bladed shoulders would be allowed. Geophysical operations would be subject to TLs and CSU stipulations established for GRSG in PHMA and GHMA.	Action E-FM 3: All proposed geophysical exploration within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation	Action F-FM 3: Allow geophysical exploration within PHMA and GHMA to obtain exploratory information for areas outside of and adjacent to PHMA. Only allow geophysical operations by helicopter-portable drilling methods and in accordance with seasonal timing restrictions and/or other restrictions that may apply. Geophysical exploration shall be subject to seasonal restrictions that preclude activities	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			Allow no use of surface shot methods within PHMA.	Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	in breeding, nesting, brood rearing and winter habitats during their season of use by GRSG.	
Action A-FM 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-FM 4: —	Action C-FM 4: —	Action D-FM 4: In un-leased federal fluid mineral estate in GHMA, apply a NSO stipulation, but allow for waivers, exception, or modifications consistent with the objective. Upon expiration or termination of existing leases within GHMA, apply the same stipulation as above.	Action E-FM 4: All un-leased federal fluid mineral estate within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority,	Action F-FM 4: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Locatable Minerals						
Action A-LOC 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 1: In PHMA, recommend for withdrawal from mineral entry based on risk to the GRSG and its habitat from conflicting locatable mineral potential and development. • Make any existing claims within the withdrawal area subject to validity exams or buy out. Include claims that	Action C-LOC 1: In PHMA, recommend for withdrawal from mineral entry.	Action D-LOC 1: BLM Public Lands-Authorize locatable mineral development activity per the 43 CFR 3809 regulations through Plan of Operation Approvals and apply mitigation and GRSG RDFs (consistent with applicable law) that minimizes the loss of PHMA or provides for enhancement of PHMA through off-	Action E-LOC 1: All new proposed locatable mineral development activities (per the 43 CFR 3809 and 36 CFR 228 Subpart A regulations for BLM and Forest Service administered lands respectively) through Plan of Operation Approvals within the SGMA will trigger SETT Consultation (See Action E-SSS-	Action F-LOC 1: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	have been subsequently determined to be null and void in the proposed withdrawal. • In plans of operations required prior to any proposed surface disturbing activities, include the following: o Additional, effective mitigation in perpetuity for conservation (In accordance with existing policy, WO IM 2008-204). Example: purchase private land and mineral rights or severed subsurface mineral rights within the priority area and deed to US Government). o Consider		site mitigation within the WAFWA management zone. Forest Service: Require that new plans of operation on National Forest System lands authorized under 36 CFR 228 Subpart A – Locatable Minerals, include measures to avoid or minimize adverse effects on GRSG populations or their habitat.	ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
	seasonal restrictions if deemed effective.					
Action A-LOC 2: —	Action B-LOC 2: —	Action C-LOC 2: —	Action D-LOC 2: —	Action E-LOC 2: All new proposed mineral exploration activities within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design	Action F-LOC 2: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-LOC 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 3: Make applicable RDFs (consistent with applicable law), Appendix E of the NTT) mandatory as COAs within PHMA.	Action C-LOC 3: Same as Alternative B.	Action D-LOC 3: —	Action E-LOC 3: TMA-15.1: —	Action F-LOC 3: Same as Alternative B.	
Action A-LOC 4: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 4: —	Action C-LOC 4: —	Action D-LOC 4: —	Action E-LOC 4: Through the Nevada Sagebrush Ecosystem Council, encourage the strong conservation ethic in the mining industry by implementing effective avoidance management, and enhancement and reclamation of disturbed lands to preserve, protect, and improve habitat in the	Action F-LOC 4: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				SGMA. On federal lands, activities that have an approved BLM or Forest Service notice of intent, plan of operation, ROW, or drilling plan, and on State/Private lands, projects with an approved Nevada Division of Environmental Protection permit, are exempt from any new mitigation requirements above and beyond what has already been stipulated in the projects' approvals.		
Action A-LOC 5: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 5: —	Action C-LOC 5: —	Action D-LOC 5: —	Action E-LOC 5: Implement a centralized impact assessment process overseen by the Nevada Sagebrush Ecosystem Council that provides consistent evaluation, reconciliation, and guidance for project	Action F-LOC 5: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				development that avoids or minimizes conflicts with GRSG in the SGMA.		
Action A-LOC 6: —	Action B-LOC 6: —	Action C-LOC 6: —	Action D-LOC 6: —	Action E-LOC 6: Follow a strategy that seeks to avoid conflict with GRSG by locating facilitates and activities in Non-Habitat wherever possible.	Action F-LOC 6: —	
Action A-LOC 7:: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 7: —	Action C-LOC 7: —	Action D-LOC 7: —	Action E- LOC 7: Recognize existing state and federal regulatory mechanisms that govern mining and exploration activities, including BLM 43 CFR 3809 surface management regulations for hard rock mining, Forest Service 36 CFR 228A regulations governing mining and exploration, and NAC 519A regulations for reclamation of mining	Action F- LOC 7: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				and exploration projects, that are adequate to conserve GRSG and sagebrush habitats in the interim until future Suitable conservation plans are approved by the Nevada Sagebrush Ecosystem Council.		
Action A-LOC 8: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 8: —	Action C-LOC 8: —	Action D-LOC 8: —	Action E-LOC 8: Aggressively engage in reclamation efforts as projects are completed, and target reclamation where the ecological site potential exists in the SGMA. Focus efforts on habitat that has the greatest potential for use by GRSG as guided by ecological site descriptions and other restoration priorities established by the Nevada Sagebrush Ecosystem Council.	Action F-LOC 8: —	
Action A-LOC 9: No common action	Action B-LOC 9: —	Action C-LOC 9: —	Action D-LOC 9: —	Action E-LOC 9: Recognize that	Action F-LOC 9: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
across LUPs within the sub-region. See **Section 2.10.1**.				stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim areas of impact and remove those barriers in order to achieve immediate and effective reclamation.		
Action A-LOC 10: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 10: —	Action C-LOC 10: —	Action D-LOC 10: —	Action E-LOC 10: Prioritize areas for habitat improvement utilizing sound resource information including soil surveys, ecological site descriptions, and GRSG population data.	Action F-LOC 10: —	
Action A-LOC 11: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 11: —	Action C-LOC 11: —	Action D-LOC 11: —	Action EB-LOC 11: Design exploration projects for mineral access and the betterment of habitat. Ensure roads and other ancillary features that impact GRSG habitat are designed to avoid where feasible and	Action F-LOC 11: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				otherwise minimize and mitigate impacts in the short and long term.		
Action A-LOC 12: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 12: —	Action C-LOC 12: —	Action D-LOC 12: —	Action E-LOC 12: Differentiate between short-(exploration) and long-term (active mining) impacts and manage timing of operations and physical disturbance accordingly.	Action F-LOC 12: —	
Action A-LOC 13: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-LOC 13: —	Action C-LOC 13: —	Action D-LOC 13: Close or mitigate abandon mines sites within PHMA and GHMA to reduce predation of GRSG by eliminating physical structures that could provide nesting opportunities and perching sites for predators.	Action E-LOC 13: —	Action F-LOC 13: —	
Salable Minerals						
Action A-SAL 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SAL 1: Close PHMA to mineral material sales.	Action C-SAL 1: Close PHMA to mineral material sales.	Action D-SAL 1: Allow no new salable mineral material sites in PHMA and GHMA.	Action E-SAL 1: All new proposed salable mineral sites within the SGMA will trigger SETT Consultation	Action F-SAL 1: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				(See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
Action A-SAL 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SAL 2: In PHMA, restore salable mineral pits no longer in use to meet GRSG habitat conservation objectives.	Action C-SAL 2: Same as Alternative B.	Action D-SAL 2: In PHMA, reclaim salable mineral materials sites no longer in use to meet GRSG habitat objectives (see Table 2-11 in section 2.8.5 of this Chapter).	Action E-SAL 2: See Role of Sagebrush Ecosystem Technical Team.	Action F-SAL 2: Same as Alternative B.	
Action A-SAL 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-SAL 3: —	Action C-SAL 3: —	Action D-SAL 3: On existing mineral materials sites, allow mineral materials sales in PHMA and GHMA as required, to meet Federal, Tribal, State, County and public needs. Loss of habitat through disturbance in PHMA and GHMA would be off-set through mitigation. Additional mitigation, including off-site mitigation would be required to off-set any net loss of habitat as a result of authorizing expansion of existing materials	Action E-SAL 3: Existing mineral material sites would only trigger SETT Consultation and the "avoid, minimize mitigate" process if there is a proposal to expand activities within the SGMA. Allow mineral materials sales in the SGMA as required, to meet Federal, Tribal, State, County, and public needs.	Action F-SAL 3: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
			pits. Habitat loss in PHMA and GHMA would be off-set through mitigation to ensure no net un-mitigated loss. All mineral materials activities would be subject to compliance with standard surface use stipulations (general occupancy, seasonal and yearlong TLs, and CSU stipulations) for GRSG in PHMA and GHMA.			
Action A-SAL 4: No common action across LUPs within the sub-region. See **Section 2.10.10.1**.	Action B-SAL 4: —	Action C-SAL 4: —	Action D-SAL 4: Close or mitigate abandon mines sites within PHMA and GHMA to reduce predation of GRSG by eliminating physical structures that could provide nesting opportunities and perching sites for predators.	Action E-SAL 4: —	Action F-SAL 4: —	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Nonenergy Leasable Minerals					
Action A-NEL 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-NEL 1: Close PHMA to nonenergy leasable mineral leasing. This includes not permitting any new leases to expand an existing mine.	Action C-NEL 1: Close PHMA to nonenergy leasable mineral leasing.	Action D-NEL 1: Close PHMA and GHMA to nonenergy leasable mineral leasing.	Action E-NEL 1: All new proposed nonenergy leasable mineral leasing within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and	Action F-NEL 1: Same as Alternative B.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	
Action A-NEL 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-NEL 2: —	Action C-NEL 2: —	Action D-NEL 2: Issue no nonenergy leasable prospecting permits within PHMA and GHMA.	Action E-NEL 2: All new proposed nonenergy leasable prospecting permits within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action	Action F-NEL 2: —

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
				E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).	
Action A-NEL 3: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-NEL 3: For existing nonenergy leasable mineral leases in PHMA, in addition to the solid minerals RDFs consistent with applicable law (Appendix E of NTT), follow the same RDFs applied to Fluid Minerals consistent with applicable law (Appendix D of NTT), when wells are used for solution mining.	Action C-NEL 3: Same as Alternative B.	Action D-NEL 3: —	Action E-NEL 3: —	Action F-NEL 3: Same as Alternative B.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
Mineral Split Estate					
Action A-MSE 1: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-MSE 1: Where the federal government owns the mineral estate in PHMA, and the surface is in nonfederal ownership, apply the conservation measures applied on public lands.	Action C-MSE 1: Same as Alternative B.	Action D-MSE 1: Where the federal government owns the mineral estate in PHMA and GHMA and the surface is in nonfederal ownership and adjacent to public lands, apply the appropriate conservation measures and RDFs consistent with applicable law on public lands.	Action E-MSE 1: All new proposed surface development activities in which the federal government owns the mineral estate and the surface is in nonfederal ownership within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3);	Action F-MSE 1: Same as Alternative B.

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Action A-MSE 2: No common action across LUPs within the sub-region. See **Section 2.10.1**.	Action B-MSE 2: Where the federal government owns the surface, and the mineral estate is in nonfederal ownership in PHMA, apply appropriate Fluid Mineral RDFs consistent with applicable law (see Appendix D of NTT) to surface development.	Action C-MSE 2: Same as Alternative B.	Action D-MSE 2: Where the federal government owns the surface and the mineral estate is in nonfederal ownership in PHMA and GHMA, apply appropriate surface use stipulations and RDFs to surface development consistent with applicable law.	Action E-MSE 2: All new proposed surface development activities in which the federal government owns the surface and the mineral estate is in nonfederal ownership within the SGMA will trigger SETT Consultation (See Action E-SSS-ACDM 1) for application of the "avoid, minimize, mitigate" process to ensure no net unmitigated loss of GRSG habitat due to anthropogenic	Action F-MSE 2: Same as Alternative B.	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
				disturbances within the SGMA. This includes application of the "avoid process" according to the applicable management category (Core, Priority, General, and Non-Habitat) (see Action E-SSS-ACDM 3); incorporation of Site-Specific Consultation Based Design Features (see Action E-SSS-ACDM 4 and Appendix D) to minimize impacts; and mitigation of impacts through the Conservation Credit System (see Action E-SSS-ACDM 5).		
Special Designations-Areas of Critical Environmental Concern (ACECs)						
Action A-SD 1: No common action across LUPs within the sub-region. See **Section 2.10.1**. No new ACECs are proposed. Continue	Action B-SD 1: —	Action C-SD 1: Designate the following proposed ACECs and Zoological Conservation Areas (FS)to preserve, protect, conserve,	Action D-SD 1: Same as Alternative A.	Action E-SD 1: —	Action F-SD 1: Designate the following proposed ACECs (BLM) and Zoological Conservation Areas (FS) as	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
to manage 246,276 acres in 29 existing ACECs (which contain GRSG PHMA and GHMA habitat) in accordance with existing ACEC management prescriptions for the protection of their respective Relevance and Importance Values. Some management prescriptions for the existing ACECs will also be beneficial to GRSG habitat.		restore, and sustain GRSG populations and the sagebrush ecosystem on which the GRSG relies. • Black Rock (239,300 acres) • Butte/Buck/White Pine (669,800 acres) • Central Elko (1,680,500 acres) • Central Great Basin (1,216,500 acres) • East High Desert (241,500 acres) • Lassen/South Washoe (683,400 acres) • Likely Tables PMU (9,600 acres) • Lone Willow (332,200 acres) • Monitor (444,100 acres) • Northeast Elko (317,600 acres) • Northwest Great Basin – NV (1,086,700 acres) • Northwest Interior			sagebrush reserves to conserve GRSG- and other sagebrush-dependent species. • Bates Mountain (242,200 acres) • Cortez Range (76,300 acres) • Fish Creek Mountains (39,500 acres) • Little Fish Lake Valley (87,700 acres) • Monitor (53,400 acres) • Monitor Valley (173,600 acres) • Reese River (92,200 acres) • Roberts Mountain (74,400 acres) • Telegraph Mountain (9,100 acres) Continue to manage 237,000	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
		(176,500 acres) • Owyhee (1,357,900 acres) • Pueblo Range (7,200 acres) • Ruby (504,200 acres) • Smith/Reese (283,200 acres) • Southeastern Nevada (315,900 acres • West Pershing (7,200 acres) Continue to manage 237,000 acres in 29 existing ACECs (which contain GRSG PHMA and GHMA habitat) in accordance with existing ACEC management prescriptions for the protection of their respective Relevance and Importance Values. The more restrictive management prescriptions in either existing management			acres in 29 existing ACECs (which contain GRSG PHMA and GHMA habitat) in accordance with existing ACEC management prescriptions for the protection of their respective Relevance and Importance Values. The more restrictive management prescriptions in either existing management or proposed management will predominate. Special Management: To protect the relevance and importance values of the GRSG and	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F	
		or proposed management will predominate. Special Management: To protect the relevance and importance values of the GRSG and habitat, . Management prescriptions for PHMA, as addressed under every resource above, would apply.			habitat, management prescriptions for PHMA, as addressed under every resource above, would apply. There are a few management prescriptions that would be unique for the ACECs under this alternative: • No new mechanized or motorized routes within 4 miles of leks or within PHMA. • Seasonally prohibit camping and nonmotorized recreation within 4 miles of active leks • Prioritize acquisition of private lands in ACECs over easements	

Table 2-16
Description of Alternative Actions

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E*	Alternative F
					• Do not use Categorical Exclusion to resolve Section 390 resource conflicts in PHMA

*Alternative E was submitted by the State of Nevada's Governor's office and only covers land within the decision area in the State of Nevada (also in Appendix O). The State of California did not submit a Sage Grouse Conservation Plan as part of this planning effort, therefore, under Alternative E, the lands in California were analyzed as the No Action Alternative.

[1]The use of — indicates that there is no similar action, or that the similar action is reflected in another management action in the alternative.

[2]BMPs as currently referred to would become RDFs to be applied consistent with applicable law.

2.11 ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

The following alternatives were considered but were not carried forward for detailed analysis because of the following:

- They would not fulfill the requirements of FLPMA, NFMA or other existing laws or regulations
- They did not meet the purpose and need
- They were already part of an existing plan, policy, or administrative function
- They did not fall within the limits of the planning criteria

FLPMA requires the BLM and Forest Service to manage the public lands and resources in accordance with the principles of multiple use and sustained yield.

2.11.1 Close All or Portions of Preliminary Priority or Preliminary General Management Areas to OHV Use

Through this LUPA, the BLM has identified, but has not studied in detail, an alternative to designate new area closures for OHV use in PHMAs or GHMAs. However, as explained more fully below, the BLM has analyzed alternatives to designate all areas in PHMAs and GHMAs as limited to OHV use if not already closed by existing planning efforts. Further, subsequent TMPs will be developed to identify specific routes in limited areas that will be closed and eliminated in order to protect and conserve GRSG and its habitat. These plans would be completed within five years of the ROD. Finally, the BLM has analyzed existing OHV area closures in PHMAs and GHMAs as part of the No Action Alternative and as a decision common to all alternatives.

The following provides the BLM's rationale:

- There are areas in PHMAs and GHMAs that are currently closed to OHV use (e.g., congressional designations, including Wilderness Areas). While these areas were closed to OHV use for purposes other than GRSG conservation, the BLM will analyze the impacts that these closures have on protection of GRSG and its habitat. These closures are analyzed in the No Action Alternative and will be carried forward across all alternatives in this Proposed LUPA/Final EIS.
- This Proposed LUPA/Final EIS is considering eliminating cross-country travel by analyzing limiting travel to existing roads and trails, as no new areas will be designated as open to OHV use. In at least one alternative, all existing areas that are designated as open will become limited.
- For BLM-administered lands in Nevada, routes in PHMAs and GHMAs are being inventoried, based on coordinated efforts

between the BLM and USFWS staff. (Route inventories for BLM-administered lands in California and National Forest System lands in both Nevada and California are complete.)

Once the inventories are complete, the BLM will initiate travel and transportation planning, which will undergo a NEPA analysis and will include public involvement. Through subsequent travel and transportation planning, the BLM will identify and consider closing specific existing routes that may be affecting GRSG habitat. Any decision to close routes to OHV use in the travel and transportation plans would be based on consideration of the GRSG habitat objectives and the overall goal of conserving, enhancing, or restoring sagebrush ecosystems on which GRSG populations depend.

- Each Ranger District in the Humboldt-Toiyabe National Forest has completed its travel management plans. This included inventorying, notifying the public, and complying with NEPA. The travel management analyses disclosed the effects on GRSG. The decisions identified which travel routes are open to vehicle use and which routes are being closed to public motorized vehicles.
- During the LUP revision/amendment process, travel and transportation area decisions (open, limited, or closed) would be revisited at the local level, based on existing inventory information associated with a myriad of resources and resource uses.
- During the public scoping period for this LUPA, there were no specific areas identified for closure to carry forward for detailed analysis.

For the reasons identified above, this subject was not carried forward for detailed analysis.

2.11.2 Elko County Sage-Grouse Plan

Elko County, Nevada, has developed an approach for conserving GRSGs (Elko County 2012). The plan emphasizes the need to maintain the multiuse concept and to avoid further restrictive federal polices to conserve GRSGs.

The goals of the plan "are not only to conserve, protect and restore GRSG populations and habitat it is also to protect the rights of the citizens and the multiple use concept that has been the heritage and culture of this region before the inception of the BLM, Forest Service, and USFWS as federal land managers."

The plan questions the rationale and science used by the USFWS in its determination of the status of GRSGs. To resolve this disagreement, the Elko Plan identifies the need for "pilot programs" to be implemented so as to determine the actual resource impacts on GRSG. The Elko Plan identifies a suite of action items by program areas to resolve current issues associated with the

conservation of the GRSG. The plan also identifies the need for a financial incentive plan to compensate users of public lands for potential adjustments in their management.

The Elko Plan was not analyzed as a separate alternative because of the following:

- Many of the actions items are contained in either Alternatives A, D, E, or the Proposed Plan.
- The results of the pilot program would be appropriate to include in the adaptive management program; however, the pilot program would not provide sufficient certainty to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat.
- The Elko County GRSG Plan would not, as a stand-alone plan, fully meet the BLM and Forest Service Purpose and Need as described in **Chapter 1**.
- Several of the action items are outside the scope of this decision, such as the following:
  - Offering private landowners incentives when and where appropriate to achieve GRSG habitat objectives
  - Discouraging and preventing additional regulations and prohibitions and limiting and preventing livestock grazing and agricultural uses on federally managed lands and private properties
  - Using Nevada Division of Forestry Conservation Camp Crews for fuels reduction projects and to support a federal grant
  - Expanding authorizations to include fire restoration projects under NEPA categorical exclusion provisions
  - Identifying funding opportunities from federal, state, local, industry, and land users dedicated to implementing prioritized habitat enhancement, restoration, and conservation

2.11.3 Increased Grazing Alternative

During scoping and the alternatives development process, a number of individuals and cooperating agencies requested that the BLM and Forest Service consider an alternative that would increase the amount of livestock grazing in GRSG habitat. This recommendation was based on empirical evidence that shows there could be a correlation between declines in GRSG and declines in the amount of livestock grazing on public lands. This alternative was considered but eliminated from detailed analysis for the following reasons:

- Alternatives being considered in this Proposed LUPA/Final EIS are science-based conservation measures that would meet the purpose and need for the project: to identify and incorporate appropriate conservation measures in LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat. There are currently no science-based studies that demonstrate that increased livestock grazing on public lands would enhance or restore GRSG habitat or maintain or increase GRSG abundance and distribution.
- Actual livestock use in GRSG habitat on BLM-administered lands in the Nevada and Northeastern California Sub-region is generally less than permitted active use. For example, in 2011 actual livestock use was approximately 60 percent of permitted active use. Unless current actual use levels are tied specifically to GRSG habitat management, permitted active use could increase under current grazing permits.

2.12 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Management actions across the range of alternatives would result in more, less, or equivalent impacts on GRSG habitat and applicable resource program areas. **Table 2-17** summarizes and compares the impacts of management actions across alternatives.

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
Greater Sage-Grouse						
Continued implementation of BLM vegetation and soil management policies and standards in sagebrush habitat would decrease invasive species, help re-establish native plants, reduce the risk of wildfire, and reduce juniper and/or pinyon and invasive grasses, leading to a long-term improvement in quality and quantity of GRSG habitat. Continuation of national and local livestock management plans and policies would not specifically protect GRSG habitat, though they could provide indirect benefits through preservation of existing sagebrush habitat. Management of riparian areas to achieve PFC would improve GRSG brood-rearing habitats. Range improvements would be designed to meet range and wildlife objectives, which could protect GRSG habitats. Most LUPs do not include provisions for managing fires and fuels to protect GRSG habitat. Under Alternative A, wildfires would likely continue to increase in size and frequency in seven of the nine populations/subpopulations in the sub-region. GRSG would subsequently continue to be degraded or lost. Small and heavily disturbed populations with dominance of invasive grass understory would be particularly susceptible to these impacts. Wild horses and burros would continue to be managed on HMAs/WHBTs, but management would not be based specifically on the habitat needs of GRSG. Keeping horses and burros at AML would reduce overall impacts on vegetation, especially nesting cover and riparian brood-rearing habitats, during periods of drought.	Alternative B management prescriptions for vegetation and soil applied to PHMA (9,573,300 acres) and GHMA (6,953,300 acres) would provide greater protection and restoration efforts for GRSG habitat compared with Alternative A. Under Alternative B, the same number of acres would be open to livestock grazing as under Alternative A. In comparison with Alternative A, Alternative B management actions would further reduce, but would not eliminate, impacts from livestock grazing on GRSG and its habitat. Under Alternative B, impacts on GRSG from fire suppression activities would be largely the same as Alternative A. Relative to the amount of GRSG habitat that is expected to burn based on current trends and is outside the control of the BLM or Forest Service, Alternative B may provide localized but minimal protections and improvements to GRSG habitat. Alternative B provides significant short-term and localized improvements to grass cover and forb availability from changes in wild horse and burro management, compared with Alternative A. Fluid minerals management under Alternative B would	Management under Alternative C would not prioritize restoration treatments within occupied habitats; therefore, it would decrease the potential for restoring GRSG habitat, compared with Alternative A. Livestock use would be closed on about 16,526,600 acres of PHMA. Under Alternative C, impacts on GRSG would be reduced compared with Alternative A in upland sites but increased in riparian sites. Removal of fencing would reduce the potential of GRSG direct strikes but would increase negative impacts on brood-rearing habitats from wild horses and burros having access to more riparian sites. Impacts on GRSG from wildfire suppression and fuels management would be the same as Alternative B. Under Alternative C, wild horses and burros would be managed on the same HMA/WHBT acreage as under Alternative A. However, horses and burros would be expected to range over a larger area than under Alternative A and would cause greater adverse impacts on quality GRSG habitat.	Management under Alternative D would focus on vegetation management within PHMA and GHMA with a goal of maintaining a resilient sagebrush vegetative community, restoring sagebrush communities to reduce habitat fragmentation, and maintaining and re-establishing habitat connectivity over the long term. Habitat trends for 10 and 50 years would improve compared with Alternative A and would be similar to Alternative B. Compared with Alternative A, Alternative D livestock management actions would further reduce, but would not eliminate, impacts from grazing on GRSG and its habitat. Impacts from wildfire and fuels management are expected to be similar to but slightly less than Alternative B due to the fact that fuels management treatments and post-fire rehabilitation projects in PHMA are focused on maximizing benefits to GRSG. Similar to Alternative B, wild horse and burro management under Alternative D provides significant, short-term, and localized improvements to grass cover and forb availability.	In comparison with Alternative A, Alternative E would provide greater benefits to GRSG and its habitats by establishing regulatory mechanisms that would provide protections for GRSG on lek or nesting habitat. Riparian impacts would be expected to be reduced in comparison to Alternative A. Management under Alternative E would provide for more vegetation treatments within occupied GRSG habitat than under Alternative A, similar to Alternatives B and D. Ten and fifty year habitat trends would improve compared to Alternative A and would be similar to Alternatives B and D. Livestock grazing management under Alternative E would emphasize cooperative implementation of appropriate prescribed grazing conservation actions at scales sufficient to influence a positive response in GRSG habitat. Riparian areas would be managed, at a minimum, for PFC. BLM riparian areas would be managed to meet RAC standards. Alternative E would promote riparian grazing improvements along with additional infrastructure in order to control season, duration, and degree of use. These improvements would be beneficial to late summer brood-rearing habitat for GRSG. Effects from wildfire suppression and fuels management would be similar to the effects described under Alternative D but would emphasize economic incentives to promote rehabilitation and restoration activities. Impacts from wild horse and burro management under Alternative E would be similar to Alternatives B and D.	Vegetation management under Alternative F would provide about the same level of, or slightly less, protection to GRSG and its habitat as Alternative B. In comparison with Alternative A, livestock management under Alternative F would provide more indirect benefits to GRSG due to increases in nesting and brood-rearing habitat amount and quality. Alternative F may increase some direct impacts on nesting GRSG when compared with Alternative A by not applying timing restrictions to livestock during GRSG nesting periods. This is likely offset by closure of 25 percent of each planning area to livestock grazing each year and a 25 percent reduction in AUMs and removal of certain livestock-related structures such as fences. Effects on GRSG from wildfire and fuels management would be the same as Alternative B. Under Alternative F, AML for wild horses and burros would be reduced by 25 percent in all HMAs and WHBTs in GRSG habitat. All other management would be the same as under Alternative B. Leasable minerals management under Alternative F would close	***Vegetation*** Management for vegetation under the Proposed Plan would increase the amount and quality of GRSG habitat compared with Alternative A and similar to Alternative D for all GRSG seasonal life-cycle requirements, including breeding, nesting, brood-rearing, and wintering. Management would be focused in PHMA and GHMA with a goal of maintaining a resilient sagebrush vegetative community, restoring sagebrush communities to reduce habitat fragmentation, and maintaining and re-establishing habitat connectivity over the long term. ***Livestock*** These management actions would speed recovery of negatively impacted GRSG habitats as compared with Alternative A. Direct impacts on breeding and/or nesting GRSG individuals and habitats would also be reduced due to the use of various herd management actions (e.g., seasonal timing restrictions) applied during the GRSG breeding and nesting season as compared to Alternative A. Removing livestock ponds outside of perennial waterways and requiring salting locations and range facilities to be moved farther away from riparian areas, springs, and meadows would reduce long-term negative impacts on riparian brood-rearing habitats. ***Fire and Fuels*** Incorporation of the FIAT and

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
Currently 1,884,300 acres of PHMA and GHMA are closed to fluid minerals leasing. Lands closed to mineral entry comprise 521, 600 acres of PHMA and GHMA. There are 1,884,300 acres closed to mineral material disposal within PHMA and GHMA. Closed areas provide an increased level of protection to nesting habitat associated with leks. Under current land use and realty management, ROW exclusion would affect 1,884,300 acres of GRSG habitat. Acres of PHMA and GHMA identified as available for disposal total 766,300 under Alternative A. Under this alternative, ROW exclusion and avoidance management would be expected to continue to reduce both direct and indirect impacts on GRSG. Under Alternative A, 1,884,300 acres are managed for exclusion and 0 acres are managed for avoidance of wind energy within existing PHMA/GHMA. Under Alternative A, 521,600 acres of PHMA and GHMA would be closed to motorized vehicle use.	close 10,120,700 acres of PHMA to leasing. Withdrawal from mineral leasing would result in long-term beneficial impacts on GRSG habitats associated with all seasonal life history requirements. Under Alternative B, management of locatable minerals would be more protective of GRSG habitat than under Alternative A. Proposed withdrawals from mineral entry under Alternative B would include 9,342,600 acres of PHMA. Within modeled nesting habitat there would be 10,522,300 acres of PHMA. Alternative B closes 10,120,700 acres of PHMA to mineral material sales. Closing PHMA to leasing, entry, and sales would provide an increased level of protection to GRSG and its habitat during all seasonal life-cycle requirements. Under Alternative B, more habitat would be managed as ROW avoidance (6,470,600 acres) and exclusion (10,056,000 acres) areas than under Alternative A. Impacts on GRSG from lands and realty management would be reduced by greatly increasing acreage subject to ROW avoidance and exclusion and by protection and acquisition of important GRSG habitats. Under Alternative B, impacts from management of lands for wind and solar energy	Under Alternative C, fluid mineral leasing would be precluded for all ACECs, including all PHMA. Closed acreage would protect all occupied or potentially occupied GRSG habitat. Mineral entry withdrawal would be proposed for PHMA and all ACECs, protecting all occupied or potentially occupied GRSG habitat and providing an increased level of protection to all associated populations and sub-populations. Management under Alternative C would close PHMA (16,526,600 acres) to mineral material sales. Closure would increase protection of all acres of PHMA. Under Alternative C, ROW avoidance acres would remain the same as under Alternative A. Within PHMA, there are more acres managed as ROW exclusion under Alternative C (16,526,600 acres) than under Alternative A (1,884,300 acres). Under this alternative, fewer acres are identified for disposal and more areas are prioritized for acquisition. This alternative would result in fewer direct or indirect impacts on GRSG and their habitats compared with Alternative A.	Alternative D would allow fluid mineral leasing on all lands with federal fluid mineral estate, but within PHMA and GHMA, leasing would only be allowed with NSO stipulations. NSO stipulations would provide an increased level of protection to all acres of PHMA and GHMA compared with Alternative A. Impacts on GRSG habitat from locatable minerals management would be the same as under Alternative A. Impacts on GRSG habitat from salable minerals management would be the same as under Alternative C. Applying avoidance criteria throughout PHMA and GHMA would result in greater control of impacts on GRSG in these habitats than would occur under Alternative A. ROW exclusion areas would be the same as under Alternative A; therefore, these impacts would be expected to be the same. Under Alternative D, all PHMA and GHMA would be managed as ROW exclusion for wind facilities. This level of closure provides the maximum preservation of sagebrush habitat. Under Alternative D, PHMA	Management under Alternative E would allow leasing within the SGMA on all lands with federal fluid mineral estate. This would include moderate stipulations (TL and CSU) and would be subject to avoid, minimize, and mitigate policy. Under Alternative E, lands would be generally open to mineral location, except if already withdrawn under current management. Effects on GRSG populations and habitat would be similar to Alternative A. Management under Alternative E would avoid mineral material sales within the SGMA and apply a policy of avoid, minimize, and mitigate. The Nevada Conservation Credit System would be implemented. Existing withdrawn acreage, avoidance, and implementation of the avoid, minimize, and mitigate policy would provide an increased level of protection to all acres of GRSG habitats. Impacts from lands and realty management would be similar to Alternative D, establishing core and priority habitats within SGMA as avoidance areas subject to an avoid, minimize, and mitigate strategy, which would reduce direct and indirect impacts on GRSG and its habitat. Under Alternative E, renewable energy management would site projects outside of GRSG habitat wherever possible. Because this strategy would not rule out the construction of projects within or adjacent to GRSG habitat, there would be the possibility for more land use for both wind and solar energy development than under Alternative A. Impacts from travel and transportation management would be the same as	PHMA and GHMA to fluid mineral leasing, as under Alternative C. Impacts from locatable minerals management would be the same as for Alternative B. Impacts from salable minerals management would be the same as for Alternative A. Lands and realty management would be expected to provide greater direct protections to GRSG than Alternative A due to the larger number of acres managed as ROW exclusion. Indirect impacts on habitat would be expected to also be less than Alternative A. For example, all PHMA would be managed as ROW exclusion for new permits, with exceptions for co-location of projects within existing footprints and valid, existing rights. Under Alternative F, solar development would be the same as Alternative A, and the same nature and scope of impacts would be expected. Under Alternative F, wind energy development would be the same as under Alternative D, and solar energy development would be the same as under Alternative A. Impacts from travel and transportation management would be the same as under Alternative B.	Resistance and Resilience concepts would reduce impacts from invasive annual grasses and altered fire regimes on the sagebrush ecosystem as well as reduce the rate of conifer encroachment in order to reduce GRSG habitat fragmentation and maintain or re-establish habitat connectivity over the long term and at a landscape scale compared with Alternative A. Fuel breaks would also be implemented to better contain wildfires, and during firefighting operations, sagebrush habitat would be protected, to the extent possible, as a valuable resource, increasing protection to GRSG habitats from wildfire as compared with Alternative A. ***WHB*** As with livestock grazing, these reductions would be expected to provide long-term benefits to GRSG and its habitat by increasing the overall quality of riparian and upland habitats through increased diversity and availability of vegetation, as well as reducing potential direct impacts on GRSG from wild horse and burros, compared with Alternative A. ***Fluid Minerals*** This alternative affords increased protection of all seasonal GRSG habitats from disturbance, decreases fragmentation, and reduces disturbance from structures and noise as compared to Alternative A. NSO stipulations within PHMA and SFAs would prohibit occupancy and all surface-

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
	development would be the same as for Alternative A. Under Alternative B, 521,600 acres of PHMA and GHMA would be closed to motorized vehicle use, and 9,599,100 acres would be limited to existing roads and trails. Compared to Alternative A, Alternative B would reduce the potential for vehicle disturbance to GRSG within PHMA during all phases of their seasonal life history.	Compared with Alternative A, Alternative C eliminates the impacts from renewable energy development on GRSG and its habitat in all seasonal ranges. Under Alternative C, any designated open roads within PHMA would be managed as limited for motorized travel with the exception of existing closed areas within PHMA.	and GHMA would be managed as ROW exclusion for new solar energy facilities. This would provide a high level of protection for sagebrush, excluding 22,245,600 acres of GRSG habitat from new development. Under Alternative D, areas designated as open to cross-country travel within PHMA and GHMA would be managed as limited to motorized travel, making it the most limiting to travel management designations.	under Alternative D.		disturbing activities on all or part of the lease for the life of the lease. The NSO would protect more acres of PHMA than under Alternative A. Direct and indirect impacts on GRSG individuals, populations, and habitat within the NSO would be reduced under the Proposed Plan. Under the Proposed Plan, within PHMA and GHMA on leases not yet developed, proposed surface disturbances must achieve a net conservation gain of GRSG habitat. This requirement would ensure that GRSG habitats within or outside of GRSG habitats are restored to meet GRSG habitat objectives (**Table 2-2**). A 3 percent disturbance cap would also be applied in PHMA. Seasonal restrictions would be applied to exploratory drilling in PHMA and GHMA, minimizing and/or eliminating direct impacts on individual GRSG, populations, and habitat as compared with Alternative A. ***Locatable Minerals*** The Proposed Plan is the similar to Alternatives D and E but includes additional management actions and RDFs that would be applied consistent with applicable law. Management under the Proposed Plan would decrease direct and indirect impacts on GRSG and its habitat by eliminating noise impacts to GRSG during the breeding season as compared with Alternative A. ***Salable*** Management under the Proposed Plan would close PHMA to new

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
						material disposal. RDFs to conserve and maintain the quality and distribution of GRSG habitat would be applicable within all GRSG habitats consistent with applicable law, minimizing or eliminating disturbance to GRSG and its habitat from surface disturbance, noise impacts, West Nile virus, and habitat fragmentation, in addition to a 3 percent disturbance cap in PHMA and a net conservation gain of GRSG habitat compared with Alternative A. ***Lands and Realty*** The management actions under the Proposed Plan would reduce the number of developments within proximity of leks and other seasonal habitats where GRSG are most susceptible to aerial predators. Major and minor ROWs would be managed as avoidance areas in PHMA. In GHMA, major ROWs would be managed as avoidance and minor ROWs would be managed as open. The TransWest Express Transmission project is not subject to the decisions made in this planning effort. Co-locating power and communication lines or siting in non-habitats and application of the net conservation gain goal would decrease direct disturbance to GRSG habitat. Noise and seasonal restrictions would reduce disturbance to GRSG during the breeding season as compared with Alternative A. ***Renewable Energy*** Under the Proposed Plan, PHMA would be managed as exclusion areas for wind energy facilities.

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
						More acres (over 11 million additional acres) would be excluded under the Proposed Plan than under Alternative A. Fewer direct and indirect impacts on GRSG and all of its seasonal habitats would be afforded under the Proposed Plan than under Alternative A. ***Solar*** Under the Proposed Plan, PHMA and GHMA would be managed as exclusion areas for utility-scale commercial solar energy facilities. This represents over 8 million fewer acres open to solar energy development than under Alternative A. Fewer direct and indirect impacts on GRSG and all of its seasonal habitats would be afforded under the Proposed Plan than under Alternative A. ***Travel*** Under the Proposed Plan, no acres would be open to motorized travel, and the BLM would manage over 16 million acres as limited to existing or designated routes. No new roads would be allowed in PHMA or upgrades of existing routes. Seasonal timing restrictions could also be applied to roads near leks. The Proposed Plan would provide fewer impacts on GRSG and its habitat than under Alternative A. ***ACEC*** Similar to Alternatives D and E, GRSG management prescriptions would be extended over 115,300 acres of PHMA, GHMA, and OHMA in 29 existing ACECs. In addition, the recommendation for withdrawal of locatable minerals

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
						in SFAs would include some existing ACECs that are currently open to locatable materials. Direct and indirect impacts on GRSG and its habitat would be less than under Alternative A.
Vegetation and Soils						
Integrated Vegetation Management Handbook policies would continue to be followed and would provide guidance on which treatments and chemicals can be used. Application of these policies would improve vegetation management in sagebrush habitat, thereby likely improving vegetation conditions in these areas. A greater acreage of sagebrush may be burned within PHMA areas since this alternative is the least restrictive on wildland fire management within PHMA and GHMA areas. As a result, a greater loss of vegetation could occur in sagebrush habitats. This could result in an increased risk of annual grass and noxious weed invasion due to the disturbance.	Large-scale disturbances within PHMA would not be permitted and small-scale disturbances would be limited to 3 percent surface disturbance. This would minimize disturbance to vegetation and soils. Soils and vegetation management actions under Alternative B would aim to improve vegetation conditions and prioritize restoration efforts to benefit sagebrush vegetation. As a result, the restoration and vegetation management actions would enhance vegetation beyond the extent and condition relative to Alternative A. Impacts on soils from livestock grazing management are likely to be the same as those identified under Alternative A. Fewer acres of sagebrush habitat would be converted to an early seral stage than under Alternative A. However, there could also be a greater potential for catastrophic fire as a result of fire suppression and exclusion.	This alternative relies more on passive restoration and would lead to fewer acres of vegetation management being treated compared with Alternative A. However, it is likely that more acres of crested wheatgrass seedings and cheatgrass-invaded areas would be treated, improving vegetative conditions for GRSG habitat with success in those areas. With minimizing the use of herbicides to treat annual grasses and noxious weeds, fewer acres of treatment would be completed under this alternative compared with Alternative A. Perennial grass utilization levels of 10-15 percent could leave fine-fuel levels at a high risk for wildfire. Shrub integrity measures could leave sagebrush and other upland shrub species with little impact other than natural forces. All PHMA and GHMA closed to livestock grazing could show a reduction in the potential for invasive species establishment. This may not control or	Lands would be managed to meet GRSG and habitat objectives and as a result, sagebrush/perennial grass ecosystems would be enhanced or maintained. With suppression efforts focused on PHMA and GHMA, more acres would likely burn in areas outside PHMA and GHMA, increasing the need for ESR treatments in non-GRSG habitat. Grazing management to achieve vegetation composition and structure consistent with ecological site potential could maintain or enhance sagebrush and perennial grass conditions within PHMA. Drought management and livestock resting during the growing season would provide a more resilient plant community. Fewer acres of sagebrush habitat in PHMA and GHMA would be converted to an early seral stage, and would have less risk for invasive grass and noxious weed invasion than under Alternative A.	Alternative E uses the avoid, minimize, and mitigate concept to manage vegetation conditions in GRSG habitat. This would limit disturbance to sagebrush/perennial grass communities and likely lead to improved health and vigor of this vegetation. Areas selected for mitigation would likely result in increased sagebrush/perennial grass vegetation communities. This alternative assigns the Nevada Sagebrush Ecosystem Council with establishment of policies for the identification and prioritization of landscape-scale enhancement, restoration, fuel reduction, and mitigation projects. Without knowing what actions would be taken by the Council, it cannot be determined fully what level of impacts would occur as a result of their policies. Grazing management to achieve vegetation composition and structure consistent with ecological site potential could maintain or enhance sagebrush and perennial grass conditions within the SGMA. Impacts from wildland fire management would be the same as under Alternative D. Under Alternative E, OHV routes would be designated to areas outside of the SGMA; disturbance from OHV use on vegetation and soils could be reduced in the SGMA through the avoidance, minimization, and mitigation of sagebrush/perennial grass	Disturbance to sagebrush would be limited to 3 percent surface disturbance. This could maintain sagebrush/perennial grass vegetation communities within PHMA. Impacts from vegetation and soils management would be the same as those described under Alternative B, with the exception that this alternative would exclude livestock grazing from burned areas until woody and herbaceous plants achieve GRSG habitat objectives. This would accelerate burned area recovery towards meeting GRSG habitat requirements. Wild horse AMLs would be reduced by 25 percent within occupied GRSG habitats. While impacts from wild horses and burros would remain, this would reduce the effects of wild horses described under Alternative A. Impacts from wildland fire management would be the same as under Alternative B. Limiting motorized travel to existing routes under Alternative F would minimize disturbance of vegetation and soils from	Under the Proposed Plan, comprehensive strategies to manage GRSG habitat across the planning area would result in sagebrush/perennial grass communities being improved or protected in comparison to Alternative A. Numerous strategies to control invasive weeds and treat hazardous fuels would help to improve the resiliency to disturbance and resistance to exotic plant invasion. Encroaching conifers would be removed in historic sagebrush sites. Invasive or noxious weed populations would be reduced. Limited disturbance due to restricting permitted actions would lead to improved vegetation conditions. Also, limited disturbance of soils due to restricting permitted actions would lead to biological soils crusts being maintained or improved. Establishment of sagebrush focal areas would lead to large blocks of sagebrush/perennial grass communities, and treatments would be prioritized to maintain or improve those stands. Integrated vegetation management at a landscape level is expected to improve the condition of public lands. In addition, increased emphasis on incorporation of GRSG habitat objectives and

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
		reduce the existing invasive species presence. Impacts from wildland fire management would be the same as those described under Alternative A.		communities.	vehicle traffic within the planning area.	considerations into programs such as livestock grazing, recreation, and wild horse and burro management would likely lead to improvements in overall vegetation conditions. The avoid, minimize, and apply compensatory mitigation strategy proposed for anthropogenic activities in GRSG habitat under the Proposed Plan would reduce or eliminate both direct and indirect adverse impacts on vegetation and soils across the planning area.
Riparian Areas and Wetlands						
Overall, condition and trend of important riparian areas and wetlands within PMUs would likely continue to improve. For example, many programs designed to improve watershed function (fire and fuels, vegetation, livestock and wild horse and burro management) would continue to result in improvement in condition and trend of riparian areas and wetlands within the sub-region. As a result of livestock grazing management, condition and trend of riparian areas and wetlands in PHMA and GHMA are likely to continue to improve in portions, but not all, of the sub-region. Riparian areas and wetlands could potentially be impacted from activities associated with leasing fluid minerals over the majority of the planning area, including PHMA and GHMA. Because ROW avoidance and exclusion areas make up a relatively small percent of PHMA or GHMA within the planning area, only limited areas of wetland and riparian habitats would continue to be protected from	Comprehensive actions to reduce land disturbance in priority GRSG habitats would substantially reduce potential for disturbance to riparian areas and wetlands within the planning area. Measures including closing or withdrawing large areas of priority GRSG habitats to both leasable and locatable minerals exploration and development, adding stipulations to GHMA for most minerals programs, establishing ROW avoidance areas, limiting travel, requiring RDFs to be applied consistent with applicable law in PHMA and retaining GRSG habitat in public ownership would benefit riparian areas and wetlands in comparison to Alternative A. Collectively, these measures would reduce direct and indirect adverse impacts on riparian areas from soil and vegetation loss, soil	Alternative C provides for extensive protection of GRSG habitat (including both PHMA and GHMA) through large-scale restrictions on livestock grazing, mining, travel, and energy development. Removing infrastructure such as fences and water developments is also proposed. Collectively, these measures would improve riparian habitats through natural healing and by reducing disturbance over a broad area compared to Alternative A. Proposed restoration of crested wheatgrass seedings and cheatgrass infestations, and reclamation of disturbed areas would also potentially provide indirect benefits to riparian areas through improved watershed function and resiliency.	Under Alternative D, measures to protect and enhance priority GRSG habitats and to reduce disturbance would improve condition and trend of riparian areas and wetlands throughout much of the planning area. Management, evaluation, and protection of GRSG habitat would receive much more focus in comparison to Alternative A. GRSG habitat needs would be prioritized in development of plans for both livestock grazing and for wild horses. Fuels, vegetative treatments, and fire suppression actions would all include strategies for enhancement and/or protection of GRSG habitat. Management actions covering minerals, lands, and recreation would emphasize avoiding, reducing, or minimizing impacts on GRSG habitats.	Alternative E represents a comprehensive strategy to evaluate and manage GRSG habitat and to reduce impacts from anthropogenic disturbance. If successful, innovative approaches, including use of a dedicated technical team to address GRSG habitat issues, development of a mitigation banking and credit system to offset impacts, and greater focus on collaboration across jurisdictional lines, could increase opportunities for improvement of riparian areas and wetlands in GRSG habitat than currently exist under Alternative A. A number of specific requirements included as part of the compensatory mitigation program add a level of certainty to the assertion that more acres of riparian habitats would be improved in comparison to Alternative A. However, Alternative E does not establish a disturbance cap and does not identify fixed areas for exclusion, potentially resulting in more disturbances to some riparian habitats compared to the Proposed Plan. In addition, exceptions tied to habitat values and feasibility could result in	Alternative F is similar to Alternative B but is more comprehensive in scope. Additional restrictions on a wide range of land use activities affecting both renewable and nonrenewable resources would significantly reduce the potential to disturb riparian and wetlands habitats. In addition, designation of sagebrush reserves with further limitations on development and disturbance would result in additional protection of riparian resources. Proposed actions focused on restoration and remediation of damage or disturbance would also directly and indirectly benefit riparian areas and wetlands within the planning area. Collectively, these measures would result in more riparian and wetland habitat improvement	Comprehensive strategies to manage GRSG habitat across the planning area would result in more acres of riparian areas and wetlands being improved or protected compared with Alternative A. Numerous actions to reduce threats from invasive weeds and catastrophic wildfires and to restore degraded plant communities through focused vegetative treatments would benefit riparian habitats by improving functionality and resiliency of surrounding watersheds. Where strategies are focused on limiting or mitigating disturbance in PHMA and GHMA through a screening process, more acres of riparian habitats would be protected or enhanced in comparison to Alternative A. In the case of SFA, all habitat (PHMA, GHMA and OHMA) would be protected from androgenic disturbance, while requirements for a net conservation gain for PHMA and GHMA would likely result in

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
disturbance.	compaction, accelerated erosion, and invasive plant infestations. Retention of priority riparian habitats in public ownership would also preclude opportunities for future development of these important areas. Riparian areas in GRSG habitats would also receive greater focus for livestock and for wild horse and burro management and for application of ecological restoration practices compared to Alternative A. Actions including remediating non-functional water developments, incorporating riparian habitat objectives into the planning process for livestock and wild horses, and placing more emphasis on managing both grazing and vegetation programs for watershed health would collectively improve condition and trend of riparian areas and wetlands in GRSG habitat compared to Alternative A.	However, opportunities for collaborative livestock management affecting intermixed private lands could be reduced or eliminated. Since much priority riparian habitats occur on private lands, fewer acres of riparian habitats on these areas would benefit from targeted or prescriptive management approaches compared to Alternative A. In addition, a proposal to restrict use of helicopters for gathering wild horses could result in increased direct and indirect impacts to riparian areas as a result of fewer numbers of horses being gathered.	Incorporation of RFDs consistent with applicable law into the planning and permitting process would further limit disturbance while providing for consideration of GRSG habitat needs during reclamation for PHMA, GHMA, and OHMA. Collectively, these measures would have the effect of substantially reducing direct and indirect adverse impacts from disturbance on riparian areas and wetlands across the planning area in comparison to Alternative A. In addition, many more acres of riparian habitats would be improved under Alternative D.	situations where impacts to some riparian areas are not avoided. Alternative E also incorporates provisions of the Eureka County Master Plan, which would limit flexibility in making adjustments in livestock grazing to benefit riparian areas and wetlands.	compared with Alternative A. Alternative F generally reduces land disturbances and would result in fewer impacts on riparian habitats associated with a particular use compared with Alternative A. Impacts from GRSG management on riparian areas and wetlands are similar to Alternative B, with additional emphasis on protecting priority GRSG habitat. Added focus on both preserving habitat and limiting disturbance would result in more acres of riparian and wetland habitat being improved or protected in comparison to Alternatives A and B. Identifying no new water developments in occupied habitat unless they can be shown to benefit GRSG and modifying existing developments to maintain the continuity of the predevelopment riparian area within GRSG habitats could result in fewer impacts on riparian habitat than Alternative A. Increased focus on vegetation management for the benefit of GRSG habitat would indirectly benefit riparian and wetland habitat by improving overall watershed health, resulting in greater benefits to these areas in comparison to	greater focus on restoring riparian areas and wetlands than currently exists. Providing for more of a collaborative approach to management of GRSG habitat across jurisdictional boundaries would also benefit riparian areas, since many of these sites occur on private lands or on a combination of private and BLM-administered lands. Increased emphasis on incorporating GRSG habitat needs into programs such as livestock grazing, recreation, travel, and wild horses and burros would likely focus greater management attention on restoring or protecting riparian habitats than currently exists. Better livestock grazing practices and/or reduced use from wild horses would allow for increases in growth and establishment of riparian vegetation. Fewer direct impacts from travel and recreational uses would also lead to increases in riparian plant growth, recovery of compacted soils, and less opportunity for establishment of invasive weeds. The avoid, minimize, and apply compensatory mitigation strategy, including the 3 percent disturbance cap for anthropogenic activities in BSUs (limited exceptions apply in Nevada but not California) and the requirement for a net conservation gain, would reduce or eliminate both direct and indirect adverse impacts on riparian and wetland habitats in PHMA and GHMA. Where impacts on riparian areas cannot be avoided, they would be offset through compensatory mitigation

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
					Alternative A. Condition and trend of riparian habitats would likely improve under Alternative F as a result of a placing greater emphasis on livestock impacts on late summer brood-rearing habitat. Impacts on riparian areas and wetlands are similar to Alternatives A, B, and D. Wild horse and burro AMLs would be reduced by 25 percent within HMAs/WHBTs with occupied GRSG habitat. While impacts from wild horses and burros would remain, this would reduce the effects of wild horses and burros described under Alternatives A, B, and D. Impacts from fluid minerals management would be the same as under Alternative B. Impacts from lands and realty management would be the same as under Alternative C. Travel management under Alternative F is similar to Alternative B, but with more focus on planning and on closing or remediating roads in priority habitat. These measures would reduce impacts on riparian areas and wetlands in comparison to Alternatives A and B.	programs, including the Conservation Credit System in Nevada (this program does not apply to California). Use of the Conservation Credit System would incentivize conservation and potentially result in improvement of many acres of riparian areas and wetlands across the planning area, especially on private lands. Implementing the adaptive management strategy proposed under the Proposed Plan would trigger changes in land uses based on habitat and population trends. Conceivably, this would focus management planning on achieving and maintaining GRSG habitat objectives, including those identified for riparian areas and wetlands. Application of the Monitoring Framework for the Proposed Plan would also help to ensure a more consistent and effective monitoring and tracking system for both positive and negative changes to priority riparian habitats within GRSG habitat.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
Special Status Species						
Most of the management actions for GRSG would be beneficial for the majority of sensitive species inhabiting the planning area. The possible exception would be species that require pinyon and juniper woodlands for at least part of their life-cycle requirements. The BLM and Forest Service acknowledge the requirements of pinyon and juniper obligate species may be contradictory to the restoration of sagebrush habitat for GRSG, but management decisions would need to be made on a local case-by-case basis; therefore, this is not further discussed in this programmatic document.						
Wild Horse and Burros						
Impacts would continue to be the same as those identified in the individual LUP documents.	Protections afforded to GRSG and its habitat would be expected to benefit and impact wild horse and burro populations. However, temporary or long-term management changes to wild horses and burros (e.g., reduction in AML, designation, removals, movement patterns, and forage access) may be necessary to achieve and maintain the desired project objectives. Allowance of vegetation treatments designed to conserve, enhance, or restore GRSG habitat would also benefit wild horses and burros. Managing wild horses and burros and their habitat to protect and maintain PHMA could impact wild horses and burros whose HMAs/WHBTs overlap with these habitats. Prioritizing wild horse and burros gathers in those HMAs/WHBTs that overlap PHMA could impact population management activities within non-GRSG HMAs/WHBTs. Managing livestock grazing to protect and maintain priority GRSG habitat would be expected to benefit wild horses and burros where HMAs/WHBTs overlap with	Protections afforded to GRSG and its habitat would be expected to benefit and impact wild horse and burro populations. However, temporary or long-term management changes to wild horses and burros (e.g., reduction in AML, designations, removals, movement patterns, and forage access) may be necessary to achieve and maintain the desired habitat condition. Impacts from vegetation management would be the same as under Alternative A. Elimination of livestock grazing within SUAs and reducing grazing levels within those areas that retain grazing use to protect and maintain occupied GRSG habitat would benefit wild horses and burros where HMAs/WHBTs overlap with these habitats. Evaluation of AMLs and completing land health assessments may result in need to reduce wild horse and burro numbers within a HMA/WHBT to achieve GRSG habitat needs. Restricting removal and	Protections afforded to GRSG and its habitat would be expected to benefit and impact wild horse and burro populations. However, temporary or long-term management changes to wild horses and burros (e.g., reduction in AML, designations, removals, movement patterns, and forage access) may be necessary to achieve and maintain the desired habitat condition. Evaluation and prioritization of GRSG habitat restoration treatments identified for PHMA or GHMA habitat would benefit wild horse and burro habitat. Associated landscape-scale management and surface disturbance restrictions would also benefit wild horse and burro habitat. Allowance of management treatments designed to conserve, enhance, or restore PHMA and GHMA habitats that benefit livestock would also benefit wild horses and burros. Authorization of new or modification of existing livestock watering sites that benefit or conserve PHMA and GHMA habitats would benefit wild horses and	Alternative E represents a comprehensive strategy to evaluate and manage GRSG habitat and to reduce impacts from anthropogenic disturbance. If successful, innovative approaches, including use of a dedicated technical team to address GRSG habitat issues, development of a mitigation banking and credit system to offset impacts, and greater focus on collaboration across jurisdictional lines, could increase opportunities for improvement of GRSG habitat than currently exist under Alternative A. Impacts from managing livestock grazing under Alternative E would be same as Alternative A. Fire management activities that protect, maintain, and improve sagebrush habitat would benefit wild horses and burros with HMAs/WHBTs that overlap these habitats. Prioritizing wild horse and burro gathers and population growth suppression to those HMAs/WHBTs that overlap SGMA habitat could impact population management activities in HMAs/WHBTs located outside of GRSG habitat. Evaluation of HMA designations and their associated AMLs within the SGMA through completion of land health assessments may result in the need to reduce or eliminate wild horse and burro HMA/WHBT in order to achieve GRSG habitat objectives. Alternative E would require more	Protections afforded to GRSG and its habitat would be expected to benefit wild horses and burros where HMAs/WHBTs overlap with PHMA or GHMA. However, the long-term management change (i.e., 25 percent reduction in HMA/WHBT AMLs) would require prioritization of subsequent NEPA to implement these reductions. However, temporary or long-term management changes to wild horses and burros (e.g., reduction in AML, designations, removals, movement patterns, and forage access) may be necessary to achieve and maintain the desired habitat condition. Vegetation treatments designed to conserve, enhance, or restore GRSG habitat would also benefit wild horses and burros. Managing livestock grazing to protect and maintain PHMA would benefit wild horse and burro habitats. To achieve GRSG habitat objectives, reducing the AMLs of the established HMA/WHBTs within occupied habitat by 25 percent would reduce utilization levels and other impacts associated with wild	Protections afforded to GRSG and its habitat would be expected to benefit and impact wild horse and burro populations. However, temporary or long-term management changes to wild horses and burros (e.g., reduction in AML, designations, removals, movement patterns, and forage access) may be necessary to achieve and maintain the desired habitat condition. Evaluation and prioritization of GRSG habitat restoration treatments identified for SFA, PHMA or GHMA habitat would benefit wild horse and burro habitat. Associated landscape-scale management and surface disturbance restrictions would also benefit wild horse and burro habitat. Allowance of management treatments designed to conserve, enhance, or restore SFA, PHMA, and GHMA habitats that benefit livestock would also benefit wild horses and burros. Authorization of new or modification of existing livestock watering sites that benefit or conserve SFA, PHMA, and GHMA habitats would benefit wild horses and burros. Eliminating existing water sources that may be identified as impacting SFA, PHMA, and GHMA habitats could reduce water availability,

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
	these habitats. Modification or elimination of watering sites in order to conserve GRSG habitat could reduce water availability, resulting in potential need for reduction of wild horse and burro numbers within an HMA/WHBT. Prioritizing the evaluation of AMLs and completing land health assessments may result in need for the reduction of wild horse and burro numbers within an HMA/WHBT in order to achieve GRSG habitat objectives. Alternative B would require more intense management when compared to Alternative A. Alternative B would result in reduced disturbance (i.e., vegetation removal) when compared to Alternative A.	population control techniques could hamper proper management. Alternative C would require more intensive management when compared to Alternative A. Alternative B would result in reduced disturbance (i.e., vegetation removal) when compared to Alternative A.	burros. Elimination of existing water sources that may be identified as impacting PHMA and GHMA habitats could reduce water availability resulting in potential need for reduction of wild horse and burro numbers within an HMA/WHBT. Fuels projects that protect and restore existing sagebrush ecosystems and associated PHMA and GHMA habitats would benefit wild horses and burros where HMAs/WHBTs overlap with these habitats. Prioritizing wild horse and burro gathers to those HMAs/WHBTs that overlap PHMA and GHMA habitats could impact population management activities within non-GRSG HMAs/WHBTs. Evaluation of AMLs may result in need for the reduction of wild horse and burro numbers within a HMA/WHBT to achieve GRSG habitat objectives. Alternative D would require more intensive management when compared to Alternative A. Alternative D would result in reduced disturbance (i.e., vegetation removal) when compared to Alternative A.	intensive management when compared to Alternative A.	horses and burros. Costs of wild horse and burro management would increase, due to a need for additional wild horse and/or burro gathers for removal and population growth suppression treatment to achieve and maintain the newly established AMLs. Reductions to this level could impact herd sustainability and diversity, which could lead to changes in HMA/WHBT designation and long-term management in these occupied habitats. Prioritizing wild horse and burros gathers to those HMAs/WHBTs that overlap PHMA could impact population management activities within non-GRSG HMAs/WHBTs. Modification or elimination of watering sites could reduce water availability, resulting in potential need for reduction of wild horse and burro numbers within a HMA/WHBT. Prioritizing the evaluation of AMLs, HMA designations, and completing land health assessments may result in need for the reduction or elimination of wild horse and burro populations within an HMA/WHBT in order to achieve GRSG habitat objectives. Fuels treatments that protect existing sagebrush ecosystems and associated	resulting in potential need for reduction of wild horse and burro numbers within an HMA/WHBT. Fuels projects that protect and restore existing sagebrush ecosystems and associated SFA, PHMA, and GHMA habitats would benefit wild horses and burros where HMAs/WHBTs overlap with these habitats. Managing wild horse and burro populations and their habitat to achieve GRSG habitat objectives within SFA, PHMA, and GHMA habitats could be expected to impact wild horses and burros whose HMAs/WHBTs overlap with these habitats. Prioritization of gathers within HMAs would directly and indirectly impact WHB. The following HMAs fall within SFAs: Owyhee, Little Owyhee, Rock Creek, and Massacre Lakes. These HMAs would have the highest priority for gathers each year to achieve and maintain AML. This focused management strategy would ensure that AML is maintained along with the necessary forage for the wild horses in these HMAs; however, it may increase the number of gathers needed to maintain AML, which could potentially increase the disturbance to the populations as well as possible disruption of herd dynamics. Prioritization could also put HMAs that fall within the lowest priority at risk for overpopulation; however, under this LUPA, provisions would allow for exceptions as needed for herd health-limiting impacts.

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					PHMA would benefit wild horses and burros where HMAs/WHBTs overlap with these habitats. Alternative F would require more intensive management when compared to Alternative A. Alternative F would result in reduced disturbance (i.e., vegetation removal) when compared to Alternative A.	Evaluation of AMLs and HMA/WHBT designations may result in the need to reduce wild horse and burro numbers within a HMA/WHBT to achieve GRSG habitat objectives. The Proposed Plan when compared to Alternative A would require more intensive management, particularly within the boundaries of the SFA areas. The Proposed Plan would result in reduced disturbance (i.e., vegetation removal) when compared to Alternative A.
Wildland Fire Management						
Few management actions would be applied specific to GRSG habitat protection. Therefore, impacts on fire management would continue to vary across the planning area based on site-specific habitat objectives for other resource concerns.	Focusing fire suppression in PHMA and GHMA would impose some limits on fuels treatments in this area, resulting in a higher level of protection but reduced management options in this area. It would also increase costs for fire management programs as compared with Alternative A because aggressive suppression response to conserve and protect would require more suppression resources. Restricting surface-disturbing activities in PHMA would decrease the chance for human-caused ignition as well as potential annual grass vectors in PHMA. Fuels management projects in PHMA would be designed to reduce wildfire threats in the greatest area, thereby decreasing risk of high-intensity fire in PHMA in the long term. Restrictions on	Alternative C would generally have the broadest restrictions on fuel management activities extending to all occupied habitat by limiting fuel treatments to the interface of human habitation, and existing disturbances. This would impact the fire program's ability to efficiently manage fuels and could increase costs of vegetation management and fire suppression. Broader restrictions on resource uses and a higher level of protection for all occupied GRSG habitat than Alternative A would further reduce opportunities for human-caused fires. Prohibiting livestock grazing within occupied GRSG habitat would increase fine fuels and fire	Impacts would be similar to those described under Alternative B, but with an added emphasis on region-specific habitat needs and variations in requirements for specific GRSG habitat types resulting in more site-specific variation in fire management impacts. Alternative D also places added emphasis to pre-suppression planning, prevention, and educational objectives for fire suppression personnel. Alternative D would generally have broader restrictions on resource use and the highest level of protection for all occupied GRSG habitat than Alternative A. This would further reduce opportunities for human-caused fires. Impacts from vegetation management would be	Alternative E represents a comprehensive strategy to evaluate and manage GRSG habitat and to reduce impacts from anthropogenic uses. Management actions would allow for some level of fuels treatments, providing greater flexibility for wildfire management. This alternative places added emphasis on a comprehensive wildfire management program that engages all interagency partners (federal, state, and local) to reduce the threats of catastrophic wildfire, rapidly suppress wildfires, and rehabilitate lands damaged by wildfire. Achieving "no net unmitigated loss" of GRSG habitat by implementation of a strategy to avoid, minimize, and mitigate impacts on GRSG would cause a shift in FRCC to a more historical regime. As shrub and grass cover becomes more continuous and ground cover is higher, the risk for large uncharacteristic fires would increase. Impacts from vegetation management would be similar to those described under Alternative B. Management	Similar to Alternative B, this alternative would impose some limits on fuels treatments in this area, resulting in a higher level of protection but reduced management options. Alternative F also prioritizes fire suppression in only PHMA, while Alternative B includes both PHMA and GHMA. The effects would be the same as Alternative B, except there would be a slight reduction in fire suppression costs under this alternative. Maintaining or increasing sagebrush cover to at least 70 percent of the decision area may cause an increase in fire severity and size due to the increase in fuel loading over time. Alternative F also identifies the need to designate sagebrush reserves (e.g., ACECs and Special Conservation Areas), which	Under the Proposed Plan, comprehensive strategies to manage GRSG habitat across the planning area would result in more acres treated and protected than Alternative A. Impacts would be similar to those described under Alternative D, but with added emphasis on regional specific habitat needs and variations and requirements for specific GRSG habitat types, resulting in more site-specific variation in fire management impacts. Additional fuels treatments and other habitat treatments would be permitted with an emphasis in maintaining, protecting, and expanding sagebrush ecosystems. Emphasis would be concentrated in PHMA; therefore, the long-term reduction in risk of high-intensity fire would occur in these areas, with particular importance to Condition Class II and III. Management under the Proposed Plan should also place added emphasis on pre-suppression

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	the location of fuel breaks and location of other fuels treatments, however, would reduce management options and would increase costs of fuel management.	risk throughout occupied habitat. Reducing vegetation treatments that mimic the natural fire effects would increase the FRCC, resulting in an increased potential for large, intense wildfires. This increased potential for large wildland fire would increase costs associated with both fire suppression and post fire rehabilitation. An increase in fire size would increase the exposure to firefighters and public to the inherent risks associated with firefighting.	similar to those described under Alternative B. Impacts from livestock grazing management would be similar to those described under Alternative B. Emphasizing fuels and habitat treatments in PHMA would result in a long-term reduction in risk of high-intensity fire in these areas, of particular importance in FRCC III.	under Alternative E for riparian areas would lessen impacts from fire by providing technical assistance, project success monitoring, and financial support to areas across the state that were previously burned and currently threatened by fires due to noxious weed infestations or fire fuels. Prepositioning and preventative actions would increase the likelihood of successful fire management actions with response to wildfire but would increase overall management costs. Fuels reduction treatments would be similar to Alternative D, with added emphasis on coordination of state and local agencies and individual landowners.	would cause an increase in planning and implementation costs associated with special designations. Restrictions from vegetation management would impact the ability to efficiently manage fuels and could increase costs of vegetation management and limit fire suppression options. Impacts from livestock grazing management would be similar to those described under Alternative D.	planning prevention, fuels management, and educational objectives for fire suppression personnel as outlined in **Appendix G**, Greater Sage Grouse Wildfire and Invasive Annual Grasses Assessment and Concepts of Resistance and Resilience (FIAT Report; Chambers et. al. In press.). This two-step process assesses the resistance to invasive species annual grasses and resilience after disturbance of those habitats to wildfire, cheatgrass invasion, and conifer species expansion. It then prioritizes focal habitats for conservation and restoration and identifies geospatially explicit management strategies to conserve GRSG habitats. The assessment process sets the stage for: 1a. Identification of Priority Areas for Conservation (PACs) 1b. Identification of Management Unit Applications of Invasives as described in **Appendix G**, page 4 Impacts on Fire Management would also be greater compared to Alternative D by adding more priority areas for fire suppression, fuels management, and post-fire rehabilitation, which would result in an increase in both fuels management and fire suppression costs and possibly increase fire fighter exposure and overall risk.
Livestock Grazing						
Management designed to address nonattainment of wildlife habitat standards would likely reduce permitted AUMs. Grazing management changes would include the timing,	Land health assessments would be conducted on all allotments open to grazing; however, under this alternative, allotments	No livestock grazing would be allowed on 16,526,600 acres in the decision area for a total of 0 AUMS in the decision	Impacts from GRSG management would be similar to those under Alternative A. Impacts from livestock	Impacts from GRSG management would be the similar to Alternative A. Alternative E stresses cooperative, seasonal adjustments to grazing use to ensure that they maintain or enhance	Impacts from GRSG management would be the same as under Alternative A. This alternative rests 25 percent of occupied habitat	***BLM*** Impacts are similar to Alternative D, including impacts from meeting GRSG habitat objectives in **Table**

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duration, or frequency of permitted use, including temporary closures. Current levels and seasons of use would continue pending completion of land health assessments. Forage availability may increase in the long term due to improved land health and forage productivity. Weed control treatments would increase forage availability in the long term by improving native plant productivity. Wildfire would remove livestock forage over the short term but can result in increases in forage post-fire. Impacts on livestock operations could also occur when a livestock grazing rest period is required following vegetation stabilization and rehabilitation treatments post-fire. These required rest periods may impact the ability of livestock operators to fully use permitted AUMs.	overlapping PHMA would be the highest priority. Changes to permitted AUMs could occur on some or all PHMA habitat acres first. The effect would be less than under Alternative A due to the reduced area. Completion of land health assessments and permits would be prioritized within PHMA, particularly those with the best opportunity to conserve, enhance, or restore habitat for GRSG. As a result, impacts on range management would be most likely to occur in these areas. Management actions (grazing decisions, AMP/Conservation Plan developments, or other agreements) to modify grazing management would be made to meet seasonal GRSG habitat requirements Such changes would have the potential to decrease management options and, therefore, result in increased time and costs required for permittees/lessees. Vegetation restoration may directly affect livestock grazing if treatments include restrictions on available grazing acreage or changes to permitted AUMs, grazing strategies, or season of use, which could result in increased cost to permittees. Required rest periods following treatments may impact the ability of livestock operators to fully utilize permitted AUMs. Impacts	area. This would force permittees/lessees to graze on private lands or give up their grazing operations.	grazing management would be greater than those under Alternative A. All PHMA and GHMA acres would be required to meet rangeland health standards, and range improvements would be evaluated to make sure they conserve, enhance, or restore GRSG habitat. Wet meadow treatments may result in more restrictions to livestock grazing and the ability to continue existing terms and conditions of permits. Additional acres may be closed to grazing temporarily within allotments to allow for riparian areas and meadows to rest from grazing in order to improve vegetation composition for GRSG habitat. Impacts from wildland fire management would be similar to those described under Alternative B.	the habitat in the SGMA. Under Alternative A, in contrast, BLM grazing permits are evaluated against Rangeland Health Standards, and grazing management changes must be implemented by the next grazing season, if necessary, when currently permitted use is determined to be causing a GRSG habitat-related standard to be unmet or not making significant progress. Alternative E would result in positive impacts on GRSG habitat in the SGMA where cooperation is present. Impacts from livestock grazing management would be the similar to Alternative A, as current BLM grazing management is required to meet many or all of the desired conditions outlined in Alternative E. Impacts from vegetation management would be the same as under Alternative A. Impacts from wildland fire management would be the same as under Alternative B.	each year. Also, utilization levels are limited to 25 percent. These actions would reduce permitted use drastically in occupied habitat. Range improvement construction would increase due to the need to fence out PHMA/GHMA areas from grazing use being permitted on adjacent areas. Impacts from vegetation management would be the same as under Alternative A. Impacts from wildland fire management would be the same as under Alternative A.	**2-2**. All SFA, PHMA, and GHMA acres would be required to meet rangeland health standards, including GRSG habitat objectives. However, management would be prioritized within allotments located within SFAs, followed by PHMAs and then GHMAS. This prioritization would require more intensive management of allotments that fall within these areas and reduce resources available for managing allotments outside of SFAs. Impacts are similar to Alternative D. The difference is that the designation of SFAs would require more intensive management of allotments that fall within these areas. All SFA, PHMA, and GHMA acres would be required to meet rangeland health standards, including GRSG habitat standards. Range improvements would be evaluated to make sure they conserve, enhance, or restore GRSG habitat. Wet meadow treatments may result in more restrictions to livestock grazing and the ability to continue existing terms and conditions of permits. Additional acres may be closed to grazing temporarily within allotments to allow for riparian areas and meadows to rest from grazing in order to improve vegetation composition for GRSG habitat. Impacts from wildland fire management would be similar to those described under Alternative

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	could occur should treatments for GRSG habitat not match with vegetation objectives for livestock grazing; however, in most cases, treatment would improve forage conditions in the long term. Measures to protect sagebrush habitat might reduce the spread of wildfire and the associated disruption to livestock operations. Forage availability would be maintained or increased long term. Mechanical, manual, and chemical treatments would be utilized to prevent confer encroachment and prevent the spread of undesirable annual grass and weed species. These actions could improve forage in the long term.					B. ***Forest Service*** The difference in impacts on livestock grazing under Forest Service management versus BLM management is that under the Forest Service Proposed Plan, term grazing permits would be amended with seasonal habitat restrictions in GRSG habitat, resulting in additional adjustments in grazing strategies.
Recreation						
Existing recreation opportunities in the planning area would be maintained.	Only BLM SRPs and Forest Service SUPs that have neutral or beneficial effects would be allowed in approximately 9,599,100 acres of PHMA. This may restrict some types of permitted uses. As a result, some types of permitted activities (e.g., OHV races) that could negatively affect PHMA may be impacted, resulting in fewer opportunities to engage in those types of events and activities in those areas. However, opportunities for nonmotorized recreation, such as hiking, horseback	Impacts of Alternative C would be the same as under Alternative A.	Only BLM SRPs and Forest Service SUPs that have neutral or beneficial effects would be allowed on approximately 16,005,000 acres of both PHMA and GHMA. As a result, some types of permitted activities (e.g., OHV races) that could negatively affect PHMA/GHMA may be impacted, resulting in fewer opportunities to engage in those types of events and activities in those areas. Construction of new recreational facilities such as campgrounds, day-use facilities, and trailheads	Impacts from Alternative E would be the same as under Alternative A.	Only BLM SRPs and Forest Service SUPs that have neutral or beneficial effects would be allowed on approximately 16,005,000 acres in PHMA. As a result, some types of permitted activities (e.g., OHV races) that could negatively affect PHMA/GHMA may be impacted, resulting in fewer opportunities to engage in those types of events and activities in those areas. Additional management actions that would seasonally prohibit camping and other nonmotorized recreation activities within	Impacts from the Proposed Plan would be the same as or similar to those under Alternative D, except the Proposed Plan would allow the construction of new recreation facilities in GHMA and construction of new recreational facilities in PHMA if there is a net conservation gain to GRSG habitat such as diverting use away from critical areas.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
	riding, and hunting, in a more natural or primitive setting may be expanded and enhanced.		would be prohibited in PHMA and GHMA.		four miles of active leks would decrease the area available for recreational opportunities such as camping, mountain biking, and hiking, resulting in seasonal reductions in recreational opportunities.	
Travel and Transportation Management						
The decision area is open to cross-country OHV travel except in areas designated as WSAs, WAs. In addition, all lands managed by CA BLM in the planning area and all forest service lands are limited to designated roads and trails. This provides greater than 12 million acres of open travel opportunities for OHV recreational users in the planning area.	There would be 5,739,500 acres in PHMA previously open to cross-country travel where motorized travel would be limited to existing routes. This would reduce opportunities for cross-country travel in the decision area. The 3 percent disturbance cap could restrict the amount of new routes that could be constructed; any routes constructed in excess of the disturbance cap would require mitigation necessary to offset the resulting loss of habitat. Impacts from implementation actions, such as evaluating the need for permanent or seasonal road closures, activity-level travel plans, limiting new route construction, and restoration of routes in PHMA would be analyzed in subsequent NEPA documents.	There would be 12,145,400 acres in PHMA and GHMA previously open to cross-country travel where motorized travel would be limited to existing routes. This would reduce opportunities for cross-country travel in the decision area. Impacts from implementation actions, such as evaluating the need for permanent or seasonal road closures in PHMA/GHMA would be analyzed in subsequent NEPA documents.	There would be 12,145,400 acres in PHMA and GHMA previously open to cross-country travel where motorized travel would be limited to existing routes. This would reduce opportunities for cross-country travel in the decision area. Upgrades to existing routes that would change the route category would be prohibited, and route construction would be limited to realignments of existing routes that minimize impacts on PHMA/GHMA. These actions would result in fewer upgrades to the travel network to accommodate current and future use. Impacts from implementation actions, such as evaluating the need for permanent or seasonal road closures in PHMA/GHMA, would be analyzed in subsequent NEPA documents.	Impacts from Alternative E would be the same as those under Alternative A.	Impacts would be the same as or similar to those under Alternative D, except Alternative F would further restrict the construction of new routes by not allowing new routes within a 4-mile buffer from leks. This would result in fewer new travel opportunities.	Impacts from the Proposed Plan would be the same as or similar to those under Alternative D.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
Lands and Realty						
Authorizations Under Alternative A, the BLM and Forest Service would continue to administer ROWs under current management systems, and existing ROWs in the decision area would continue to provide access and utilities for permittees and lease-holders. No acres would be designated as ROW avoidance, while 1,884,300 acres would continue to be designated exclusion. All other lands within the decision area would continue to be open for land use authorization development, thereby allowing the BLM and Forest Service to accommodate future ROW demand. BLM -administered and National Forest System lands would continue to be available for multiple-use and single-use communication sites and road access ROW (or SUAs) on a case-by-case basis pursuant to Title V of FLPMA, and 43 CFR Part 2800 and 2900 regulations (BLM) and 36 CFR § 251 Subpart B (Forest Service). All new linear ROWs, fiber optic cables, transmission lines, pipelines, and communication sites would be encouraged to locate within designated corridors and existing sites. All LUA applications would be reviewed using the criteria of following existing corridors wherever practical and avoiding the proliferation of separate authorizations (e.g., through co-location). Where existing development is not present, co-location requirements can limit options for new development. ***Utility Corridors*** Currently there are 1,322,800 acres of utility corridors within the sub-region.	***Authorizations*** This alternative, which would designate PHMA as ROW exclusion areas and GHMA as avoidance areas while encouraging the BLM and Forest Service to take advantage of opportunities to remove, bury, or modify existing power lines in PHMA, would impose greater limitations on future authorizations compared to Alternative A. In PHMA, there would be limited to no opportunity for new ROW development. Exclusion areas would result in reconfigurations of proposed infrastructure, such as electrical transmission lines and pipelines, so as to avoid GRSG habitat. While management under Alternative B encourages co-location, often co-location is not feasible. In ROW avoidance areas, RDFs (to be applied consistent with applicable law) and other GRSG habitat mitigation requirements could increase project costs, lengthen agency review periods, and in some cases result in projects being withdrawn or relocated outside GRSG habitat. In addition, ROW exclusion and avoidance designations could extend processing time for renewals of existing LUAs and make siting of new linear or site LUAs more difficult	***Authorizations*** This alternative, which would designate all lands within the planning area as ROW exclusion areas, would impose the greatest limitations on future authorizations, including linear ROWs such as transmission lines and pipelines, and site authorizations such as communication facilities. For linear ROWs, this alternative could increase the length of these projects to avoid GRSG habitat, thus increasing project costs. In some areas, there could be opportunities to co-locate new infrastructure with compatible ROW developments; however, these opportunities would likely be limited in scope and location and incur additional costs compared to Alternative A. ***Utility Corridors*** All utility corridors under Alternative C would be managed as ROW exclusion, thereby eliminating any incentive for placement of ROW infrastructure in those locations. This would impact the utility market by reducing the future service availability to customers.	***Authorizations*** The designation of PHMA and GHMA as ROW avoidance areas under Alternative D would allow ROW development to occur if development incorporates specific design and mitigation measures and stipulations that would result a net conservation gain of GRSG habitat. These additional restrictions would impact processing time for the BLM and Forest Service and could increase costs for the applicants. Alternative D would have greater impacts on the lands and realty program than Alternative A. Under Alternative D, ROW authorizations in GRSG habitat would be required to apply RDFs consistent with applicable law, such as retrofitting with anti-perching devices, to minimize impacts on GRSG and its habitat. Application of RDFs consistent with applicable law could result in increased development costs and construction timelines. ***Utility Corridors*** New authorizations in designated corridors would be required to incorporate RDFs consistent with applicable law to minimize impacts on GRSG habitat. This could reduce the incentives for locating	***Authorizations*** In California, impacts under this alternative would be the same as Alternative A. In Nevada, specific mitigation measures would be set in place to avoid, minimize, and mitigate impacts on breeding, nesting, brood-rearing, and wintering habitats. Proposed management to conserve GRSG habitat would result in the modification of proposed ROW actions and/or incorporation of conditions to lessen any adverse effects on GRSG and its habitat. Under Alternative E, ROW applicants would be required to incorporate Site-Specific Consultation-Based Design Features (see **Appendix D**), such as reducing the disturbance footprint, seasonal use limitations, and co-location of structures. These measures could restrict infrastructure development in specific areas and could impact management and maintenance of existing and future development. Under Alternative E, in the State of Nevada only, the application of RDFs consistent with applicable law, such as consolidating ROWs within existing utility corridors and burying power lines, could affect lands and realty by limiting the availability of lands suitable for consolidated development. Requirements to bury transmission lines could result in the added cost of the development prohibiting completion or restricting the scope of the project. ***Utility Corridors*** For lands in California, impacts on utility corridors would be the same as Alternative A. For lands in Nevada, encouraging the use of existing	***Authorizations*** Impacts on land use authorizations under Alternative F would be similar to Alternative C, with the exception that new ROWs would be allowed if co-located with existing ROWs, particularly those within designated utility corridors. Although no areas in GRSG habitat would be open to new ROW development, demand for new ROWs could be accommodated if co-located with existing ROWs. Restricting all new authorizations to co-location would minimize opportunities for new development compared to Alternative A and likely increase the complexity and costs of proposed ROWs in GRSG habitat. Because existing infrastructure is limited to select locations in the planning area, other areas without existing ROWs would be excluded from future ROW development. The BLM and Forest Service would only authorize new communication infrastructure where it could be co-located in an existing site. When enhancements are needed, restrictions on new communication site leases would prevent the optimal transmittal of communication signals	***Authorizations*** The Proposed Plan, which distinguishes between major and minor ROWs, would designate PHMA as ROW avoidance areas for major and minor ROWs. GHMA would be open to minor ROWs, while major ROWs would be avoided. In PHMA, new authorizations would be required to meet GRSG screening criteria, which require the project to demonstrate a net conservation gain to GRSG and its habitat, incorporate specific conditions, apply mitigation measures, noise stipulations, and RDFs, abide by lek buffer distances, and meet tall structure requirements. Proposed ROWs within GHMA would also be required to follow GRSG screening criteria, including achievement of net conservation gain for GRSG, RDFs, noise limitations, and seasonal buffers. Collectively, these screening criteria would impact BLM and Forest Service processing times and increase costs for the applicants. In some cases, this could restrict smaller ROW applicants from receiving a ROW due to financial feasibility. The Proposed Plan would exempt the Trans West Express transmission line from the requirements of this plan. Allowing the Trans West Express transmission line would enable the BLM and Forest Service to accommodate a portion of the future bulk transmission demand in the planning area. The previously authorized South

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There would be no new corridors designated. Widths in existing corridors vary from 0.5 mile up to 3 miles wide. These corridors would continue to be the preferred location for new ROW development. ***Land Tenure*** Under Alternative A, approximately 766,300 acres of BLM lands (within PHMA and GHMA) would continue to be available for disposal. Land disposal, which must meet the criteria under FLPMA Section 203 and applicable LUPs, would improve BLM lands and realty program and overall BLM management efficiency. The Forest Service has not identified specific lands for exchange or disposal.	than under Alternative A. Exclusion and avoidance designations under Alternative B would also result in impacts on the location and design of communication towers on both BLM-administered and National Forest System lands. In PHMA, new facilities would be excluded and only modifications to the existing communication tower network (e.g., expansion of existing facilities) in PHMA would be allowed. In GHMA, conditions on tower design (e.g., tower height) may prevent the effective transmittal of communication signals to adjacent towers. ***Utility Corridors*** Actions towards corridors under Alternative B would reduce the available lands open to entry for linear ROWs and could cause new linear ROWs to concentrate uses in existing corridors, causing existing designated corridors within GRSG habitat to become full and subsequently unavailable for additional linear ROWs. This could impact the utility market by potentially reducing the service availability to customers. ***Land Tenure*** Alternative B, which would result in PHMA being retained in public ownership except where a more contiguous federal ownership	***Land Tenure*** Requirements under Alternative C for the BLM and Forest Service to retain public ownership in PHMA with no exceptions would preclude opportunities to consolidate land ownership and improve land and resource management efficiency. Under Alternative C, the BLM and Forest Service would recommend all GRSG habitat, including mineral split-estate, for mineral withdrawal. Eliminating locatable mineral development in GRSG habitat would eliminate any demand for ancillary land use authorizations to support mineral development.	development in corridors. ***Land Tenure*** Management actions under Alternative D that prioritize GRSG habitat for acquisition and limit disposal of these lands would assist the BLM and Forest Service in prioritizing future land tenure and land ownership adjustments. Disposal and/or acquisitions of BLM-administered lands would allow for more contiguous federal ownership patterns within the GRSG habitat area, or where a land tenure adjustment would result in a net gain in the amount or quality of GRSG habitat.	corridors for new ROW development could result in corridors eventually becoming overcrowded with ROWs and unfeasible for additional development, which could result in costly retrofitting of existing infrastructure to increase capacity or redirect new development to areas within or outside of GRSG habitat. This could impact the utility market by potentially reducing the service availability to customers. ***Land Tenure*** Impacts on land tenure would be the same as Alternative A.	throughout the network. ***Utility Corridors*** Alternative F, which identifies corridors with existing ROW infrastructure as the desired location for future ROW development, would limit new ROWs to 1,322,800 acres (8 percent of the planning area). Limiting the amount of lands available to new ROW development to only 8 percent of the planning area would preclude additional development in the remaining 92 percent.. Concentrating new development in existing corridors could also preclude long-term development in those locations as corridors become overcrowded. The result could be costly retrofitting of existing infrastructure in the corridors to increase capacity. New development could also be redirected to areas outside of GRSG habitat, thereby impacting the utility market by potentially reducing the service availability or increasing costs for customers. ***Land Tenure*** Impacts from land tenure and land ownership adjustments would be the same as Alternative B.	West Intertie line would accommodate additional demand for north-south electricity transmission. Under the Proposed Plan, all new ROW development in PHMA, except the Trans West Express project, would contribute toward a 3 percent anthropogenic disturbance cap. Exceedance of the cap in any BSU would prohibit any future ground-disturbing authorizations in those areas. Impacts in BSUs where the cap exceeds 3 percent would be the same as Alternative C. ***Utility Corridors*** Under the Proposed Plan, existing utility corridors would be open for new ROWs in GRSG habitat; however, 1,097,800 acres of existing utility corridors would be undesignated, and the width of the remaining 225,000 acres of designated corridors would be set at a maximum width of 3,500 feet. These actions towards corridors would reduce the available lands open to entry for linear ROWs and could cause new linear ROWs to concentrate in existing corridors. Over time, corridors could become overcrowded and unfeasible for additional ROW development. Costly retrofitting of existing infrastructure or redirecting new development to areas outside of GRSG habitat could increase capacity. These added costs would negatively impact the utility market by potentially reducing the availability of affordable service to customers.

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	pattern or more effective management of GRSG habitat would result from the land tenure action, would limit land tenure actions compared to Alternative A. Recommending the withdrawal of 9,342,600 additional acres for locatable mineral entry in PHMA would decrease future demand for ROWs in those areas.					***Land Tenure*** Management under the Proposed Plan that prioritizes GRSG habitat for acquisition and limits disposal would assist the BLM and Forest Service in prioritizing future land tenure and land ownership adjustments. By allowing land tenure actions that result in the net conservation gain of GRSG habitat, the BLM and Forest Service could carry out actions that consolidate land ownership or acquire lands with higher-quality GRSG habitat. Recommending the withdrawal of SFAs (2,797,400 additional acres compared to Alternative A) for locatable mineral entry would decrease the short- and long-term demand for ROWs to support mineral development.
Renewable Energy						
Within existing PHMA/GHMA 1,884,200 acres of lands would be affected by wind ROW/SUA exclusion areas and 15,896,500 acres of lands would be affected by solar ROW exclusion or avoidance areas. All other lands with renewable energy potential would continue to be open for ROW and SUA applications on a case-by-case basis. Continuation of current management would have direct impacts on the ROW program by allowing new facilities to be constructed and continuing the demand for ROWs (e.g., transmission lines) to service renewable energy projects.	Under Alternative B, the management of PHMA (10,120,700 acres) as ROW/SUA exclusion areas and GHMA (6,405,900 acres) as wind ROW avoidance areas would eliminate or restrict wind energy development in GRSG habitat. Management of areas as ROW exclusion would force development to occur outside PHMA and/or on private lands. Within avoidance areas, mitigation requirements (e.g., RDFs consistent with applicable law) could increase project costs, lengthen review periods, and create more complex projects. Requirements for siting	Under Alternative C, GRSG habitat (16,526,600 acres) would be excluded from wind and solar ROW applications. While the exclusion area would eliminate development potential in PHMA, the areas most affected would be those areas of moderate to high potential for wind energy development, which are confined largely to mountain ridge tops. Excluding wind energy ROWs in GRSG habitat would force development to occur on federal lands outside habitat and/or on private lands. Excluding other ROWs,	Direct short- and long-term impacts under Alternative D would be the same as Alternative C. Because Alternative D would have slightly fewer restrictions on other ROW types (e.g., transmission lines), the indirect effects on renewable energy development under Alternative D would be less in unmapped areas outside PHMA and GHMA.	In California, impacts under Alternative E would be the same as Alternative A. In Nevada, the BLM and Forest Service would avoid core, priority, and general habitat wherever possible and would only allow ROW development within these areas to occur if SETT consultation was completed and the appropriate mitigation measures were applied (e.g., through RDFs consistent with applicable law and the conservation credit system). These increased measures would restrict renewable energy development in specific areas and would impact management and maintenance of existing and future development. Limitations on new ROWs and above-ground linear features such as transmission lines would limit the BLM's and Forest Service's ability to	Impacts on wind and solar energy ROWs within GRSG habitat would be the same as Alternative C. Alternative F would also prohibit wind energy development within five miles of active leks, which could result in a larger area where wind and solar ROWs are excluded.	Under the Proposed Plan, the BLM and Forest Service would manage PHMA (10,296,100 acres) as ROW exclusion for utility-scale commercial wind and solar. GHMA (6,516,700 acres) would be managed as ROW avoidance for wind and exclusion for solar ROWs. Impacts on wind energy ROWs in PHMA and solar ROWs in PHMA and GHMA would be the same as Alternative D. Although new wind ROWs could be developed in GHMA, the BLM and Forest Service would only allow ROW development within avoidance areas to occur if the development meets the GRSG screening criteria (Action SSS 1) and incorporates appropriate RDFs consistent with applicable law in design and construction

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	projects in avoidance areas could also redirect wind energy development from federal to non-federal lands. Direct short- and long-term impacts on solar energy ROWs would be the same as Alternative A. Indirect impacts from restrictions on other ROWs (e.g., transmission lines) in GRSG habitat could further restrict solar and wind ROW opportunities even where those ROWs are not excluded.	such as transmission lines, would indirectly affect renewable energy development potential outside PHMA if that infrastructure is needed across GRSG habitat to support renewable energy development on adjacent non-habitat lands. Determining lands of non-habitat would allow the BLM to be more transparent regarding lands that would have fewer restrictions for future development. Renewable energy companies would be able to identify what lands are available and open to development.		accommodate demand for renewable energy ROW development, which in turn could restrict the availability of energy or service availability and reliability for communication systems.		(e.g., noise, tall structure, or seasonal restrictions). Facilities would have to be sited and developed in non-habitat or mitigated so that there is a net conservation gain to GRSG and its habitat. Added restrictions in GHMA would increase project costs, design complexity, and agency review times compared to Alternative A The requirement to apply RDFs consistent with applicable law in OHMA could increase project costs and agency review times for projects in those areas. Limitations on other types of new ROWs (e.g., transmission lines) under the Proposed Plan could indirectly limit the BLM's and Forest Service's ability to accommodate demand for renewable energy ROW development in GHMA and OHMA.
Minerals – Fluid						
This alternative is the least restrictive and would continue to allow fluid mineral development to continue on 14,642,300 acres with standard stipulations. It is projected that 100 new exploratory and development wells would be drilled during the life of the LUP. Of these new wells, 41 are expected to be producing oil and gas (see **Appendix P**).	Overall, as a result of increased restrictions and limitations as compared to Alternative A, Alternative B would result in an increase in the magnitude and duration of effects on fluid minerals development over time with the closure of 61 percent (10,120,700 acres) of the decision area. Geophysical exploration would be permitted within PHMA areas with restrictions. These restrictions would likely reduce the amount of geophysical exploration within the decision area,	The Forest Service and BLM would develop strategies to terminate existing leases and close the entire decision area to fluid mineral leasing. This would reduce the amount of fluid mineral resource exploration and development on existing leases within the decision area. No lands within the decision area would be available for new ROWs. Because federally managed lands are closed to leasing under this alternative, there would be no	All federal fluid minerals in PHMA and GHMA would be open to fluid mineral leasing subject to an NSO stipulation that provides no exception, modification, or waiver language. Geophysical exploration would be permitted within GHMA and PHMA areas; however, PHMA would be subject to restrictions. These restrictions would likely reduce the amount of geophysical exploration within the decision area, which could reduce the amount of fluid mineral resources that are identified	Under Alternative E, all GRSG habitat would be managed under moderate stipulations (TL and CSU) and would apply the avoid, minimize, and mitigate strategy as described in the state plan. These management requirements could increase cost and time to develop the resource compared to Alternative A.	Impacts would be the same as or similar to those under Alternative C. Overall, as a result of increased restrictions and limitations as compared to Alternative A, Alternative F would result in an increase in the magnitude and duration of effects on fluid minerals development over time with the closures of 100 percent of the decision area.	This alternative would require a 3 percent disturbance cap on anthropogenic surface-disturbing activities in PHMA and impose RDFs consistent with applicable law and a net conservation gain in both PHMA and GHMA. PHMA would be managed as NSO, and GHMA would be managed with CSU/TL restrictions. In PHMA and GHMA, geophysical exploration that does not result in crushing of sagebrush vegetation or does not create new or additional surface disturbance would be permitted.

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	which could reduce the amount of fluid mineral resources that are identified and developed.	impacts on public lands. However, Alternative C could also decrease development of fluid mineral projects on private lands by decreasing the accessibility and availability to develop infrastructure (e.g., pipelines and transmission lines) on public lands.	and developed. Limitations on new ROWs and aboveground linear features, such as transmission lines, would limit the BLM's ability to accommodate demand for fluid mineral ROW development, which in turn could restrict the availability of fluid minerals.			
Minerals – Locatable						
This alternative would be the least restrictive to locatable minerals because a larger percentage of the decision area (97 percent) would continue to be open to locatable mineral entry, and no additional restrictions would be applied to mining operations.	Total withdrawals (including lands currently withdrawn) under this alternative would increase to 57 percent (9,342,600 acres) of the decision area in comparison with Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area.	Total withdrawals, including lands currently withdrawn, under this alternative would increase to 100 percent of the decision area in comparison with Alternative A, thereby, further limiting opportunities for locatable mineral development in the decision area.	This alternative would have the same percentage of the decision area open to locatable mineral entry as Alternative A. Additional restrictions and design features for locatable minerals would apply in GRSG habitat. This could result in (1) reduced availability of locatable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential locatable mineral development economically infeasible.	Under Alternative E, the acres of federal mineral estate closed to mineral entry would be the same as Alternative A. However, the Nevada Conservation Credit System would be implemented, and additional restrictions would apply within areas of GRSG habitat. Noise, structure height, and timing limitations would also apply, and mitigation may be required. Additional restrictions and design features for locatable minerals would apply in GRSG habitat. This could result in (1) reduced availability of locatable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential locatable mineral development economically infeasible.	Impacts would be the same as under Alternative B.	The total area recommended for withdrawals or currently withdrawn under this alternative would increase to 20 percent (3,596,200 acres) of the decision area in comparison with Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area in the event that withdrawals occur on areas that are recommended for withdrawal. This alternative would have a lesser impact than Alternatives B, C, or F since there are fewer acres and no active mines within the area recommended for withdrawal. Subject to valid existing rights and applicable law, additional restrictions and design features for locatable minerals would apply in GRSG habitat. This could result in (1) reduced availability of locatable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential locatable mineral development economically infeasible.

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Minerals – Salable						
Approximately 11 percent (1,884,300 acres) of federal mineral estate within existing habitat would continue to be closed to mineral material disposal. Road construction would likely decrease on BLM-administered and National Forest System surface in the decision area that would continue to be managed as ROW avoidance or exclusion under this alternative, which would result in a decrease in demand for mineral materials in those areas. Impacts from this decrease in demand would be mitigated where new ROWs could be co-located within existing ROWs to satisfy valid existing rights.	Approximately 61 percent (10,120,700 acres) of federal mineral estate within existing habitat would be closed to mineral material disposal. These closures would decrease access for local governments and members of the public to mineral material sites. Road construction would likely decrease on BLM-administered and National Forest System surface in the decision area that would be managed as ROW avoidance or exclusion under this alternative, which would result in a decrease in demand for mineral materials in those areas. Impacts from this decrease in demand would be mitigated where new ROWs could be co-located within existing ROWs to satisfy valid existing rights.	100 percent of federal mineral estate in existing habitat would be closed to mineral material disposal. These closures would decrease access for local governments and members of the public to mineral material sites. Road construction would likely decrease on BLM-administered and National Forest System surface in the decision area that would be managed as ROW avoidance or exclusion under this alternative, which would result in a decrease in demand for mineral materials in those areas. Impacts from this decrease in demand would be mitigated where new ROWs could be co-located within existing ROWs to satisfy valid existing rights.	16,526,600 acres of federal mineral estate in existing habitat would be closed to mineral material disposal. These closures would decrease access for local governments and members of the public to mineral material sites. Additional restrictions and design features for salable minerals development would apply in GRSG habitat. This could result in (1) reduced availability of salable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential salable mineral development economically infeasible.	Under Alternative E, the acres of federal mineral estate closed to disposal would be similar to but greater than under Alternative A. However, the Nevada Conservation Credit System would be implemented, and additional restrictions would apply, within areas of GRSG habitat. Noise, structure height, and timing limitations would also apply, and mitigation may be required. This may result in in decreased access for local governments and members of the public to mineral material sites and/or increase costs of mineral material development. Additional restrictions and design features for salable minerals development would apply in GRSG habitat. This could result in (1) reduced availability of salable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential salable mineral development economically infeasible.	Impacts would be the same as under Alternative B.	Approximately 72 percent (16,812,800 acres) of federal mineral estate in existing habitat would be closed to mineral material disposal. These closures would decrease access for local governments and members of the public to mineral material sites. Additional restrictions and design features for salable minerals development would apply in GRSG habitat. This could result in (1) reduced availability of salable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential salable mineral development economically infeasible.
Minerals – Non-energy Leasable						
Approximately 11 percent (1,884,300 acres) of federal mineral estate within existing habitat would continue to be closed to nonenergy leasable mineral development.	Approximately 61 percent (10,120,700 acres) of federal mineral estate within existing habitat would be closed to nonenergy leasable mineral development.	100 percent of federal mineral estate in existing habitat would be closed to non-energy leasable mineral development.	16,526,600 acres of federal mineral estate in existing habitat would be closed to nonenergy leasable mineral development. Additional restrictions and design features for nonenergy leasable mineral development would apply in GRSG habitat. This could result in (1) reduced availability of nonenergy leasable mineral resources, (2) reduced access to new or existing mines due to	Under Alternative E, the acres of federal mineral estate closed to nonenergy leasable mineral development would be similar to Alternative A. However, the Nevada Conservation Credit System would be implemented and additional restrictions would apply within areas of GRSG habitat. Noise, structure height, and timing limitations would also apply, and mitigation may be required. Additional restrictions and design features for nonenergy leasable mineral development would apply in	Impacts would be the same as under Alternative B.	Approximately 72 percent (16,812,800 acres) of federal mineral estate in existing habitat would be closed to nonenergy leasable mineral development. Additional restrictions and design features for nonenergy leasable mineral development would apply in GRSG habitat. This could result in (1) reduced availability of nonenergy leasable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3)

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			restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential nonenergy leasable mineral development economically infeasible.	GRSG habitat. This could result in (1) reduced availability of nonenergy leasable mineral resources, (2) reduced access to new or existing mines due to restrictions on use of the overlying surface lands, and (3) reduced efficiency and increased operational costs that make potential nonenergy leasable mineral development economically infeasible.		reduced efficiency and increased operational costs that make potential nonenergy leasable mineral development economically infeasible.
Lands with Wilderness Characteristics						
This alternative would have the most impact to lands with wilderness characteristics because there are currently few restrictions on anthropogenic activities. Most lands, outside of designated wilderness, wilderness study areas, and lands managed by the Northern California District, remain open to cross-country travel, open to mineral development, and open to ROW development, with exception solar exclusion. Continued development would compromise the wilderness characteristics of naturalness, opportunity for solitude, and primitive recreation values on lands with wilderness characteristics.	This alternative would primarily protect lands with wilderness characteristics where they overlap with PHMA. Wilderness characteristics of naturalness, opportunity for solitude, and primitive recreation values would be protected in PHMA would be through limiting OHV travel to existing roads and trails, excluding ROW, and closing mineral development including recommending for locatable mineral withdrawal. GHMA would be afforded fewer restrictions except for imposing a ROW avoidance restriction, therefore wilderness characteristics of naturalness, opportunity for solitude and primitive recreation values could be compromised where they intersect with GHMA.	This alternative is the most restrictive for all of PHMA and GHMA in that all habitat would be managed as PHMA with exclusion for ROWs, closure to all mineral leasing and development, closure to livestock grazing, and all habitat would be recommended for withdrawal. In addition all lands would be limited to existing roads and trails for OHV use. Where lands with wilderness characteristics intersect with PHMA and GHMA, the wilderness characteristics of naturalness, opportunity for solitude, and primitive recreation values would be preserved because anthropogenic disturbances would be virtually eliminated.	This alternative restricts OHV travel to existing roads and trails in PHMA and GHMA, closes non-energy and salable minerals in all habitat, allows for fluid mineral leasing only under an NSO stipulation, and manages ROWs as either avoidance or exclusion areas. These management actions would help to retain the wilderness characteristics of naturalness, opportunity for solitude, and primitive recreation values associated with lands with wilderness characteristics where they intersect with GRSG habitat. There would be no recommended withdrawal for locatable minerals, so mining activity would continue and could impact the wilderness characteristic values where they intersect with GRSG habitat.	This alternative restricts OHV travel to existing roads and trails, but has no allocation restrictions. All anthropogenic activities would be allowed subject to the State of Nevada's Conservation Credit System which imposes stringent mitigation measures. Similar to Alternative A, activities allowed under this alternative could impact wilderness characteristics of naturalness, opportunity for solitude, and primitive recreation values where they intersect with GRSG habitat.	This alternative has very restrictive management actions similar to Alternative C for PHMA, but is less restrictive in GHMA. Where lands with wilderness characteristics intersect with PHMA, the naturalness would be preserved because anthropogenic disturbances would be virtually eliminated. GHMA remains open to salable mineral development and non-energy mineral development, and is not recommended for withdrawal. These activities could impact wilderness characteristics of naturalness, opportunity for solitude, and primitive recreation values where they intersect with GHMA.	This alternative would primarily protect lands with wilderness characteristics where they overlap with PHMA. Protections of natural values in PHMA would be through limiting OHV travel to existing roads and trails, closing lands to salable and non-energy leasable mineral development, allowing for fluid mineral leasing under a strict NSO stipulation, recommending for locatable mineral withdrawal within the SFA, and imposing ROW avoidance and exclusion management actions. In addition, a 3% disturbance cap protocol would be applied as well as other restrictive screening criteria. These management actions would help to retain the naturalness, opportunities for solitude, and primitive recreation values associated with lands with wilderness characteristics where they intersect with GRSG habitat. GHMA would be afforded fewer restrictions and the naturalness, opportunities for solitude, and primitive recreation values of lands with wilderness characteristics could be compromised where they intersect with GHMA.

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
Areas of Critical Environmental Concern						
Management decisions for the 29 existing ACECs containing GRSG habitat in the planning area would continue to provide supplemental support for the protection of existing ACEC relevance and importance values and GRSG habitat within the boundaries of the existing ACECs.	Under Alternative B, approximately 115,300 acres in 22 existing ACECs will be subject to additional management protections from GRSG management prescriptions. Between existing ACEC management and proposed GRSG management the more restrictive management prescription will take precedence.	Under Alternative C management prescriptions for approximately 9,458,000 acres (PHMA) in 18 proposed ACECs would provide specific protection and management efforts for GRSG compared with Alternative A. Management decisions for GRSG may benefit and compliment management decisions protecting relevance and importance values on 115,300 acres in 22 existing ACECs. Between existing ACEC management and proposed GRSG ACEC management, the more restrictive management prescription will take precedence.	Under Alternative D, impacts would be similar to those in Alternative A because management prescriptions in the majority of existing ACECS are the same or more restrictive than proposed GRSG management. Between existing ACEC management and proposed GRSG management, the more restrictive management prescription will take precedence.	Under Alternative E, impacts would be similar to those in Alternative D because total acreage and number of existing ACECs affected and other GRSG habitat is the same. However, because proposed management prescriptions under this alternative would be less restrictive than Alternative D, effects on existing ACECs would be minimal. Between existing ACEC management and proposed GRSG management, the more restrictive management prescription will take precedence.	Under Alternative F, management prescriptions for approximately 878,700 acres (PHMA) in 9 proposed ACECs would provide specific protection and management efforts for GRSG compared with Alternative A. As with Alternative B and Alternative C, 22 existing ACECs would be beneficially impacted by more restrictive management prescriptions. Between existing ACEC management and proposed GRSG ACEC management, the more restrictive management prescription will take precedence.	Under the Proposed Plan, impacts would be similar to Alternatives A, B, D, and E in that no proposed ACECs would be designated. Like Alternative D, the management prescriptions of existing ACECs is the same or more restrictive than proposed GRSG management prescriptions. However, those ACECs that contain SFAs will benefit from the fluid mineral NSO with no exception, modification, or waiver stipulation and the recommended mineral withdrawal in the event that the areas are withdrawn. Between existing ACEC management and proposed GRSG management, the more restrictive management prescription will take precedence.
Water Resources						
Under Alternative A, there are currently areas designated as PHMA and GHMA. However, the LUPs do not contain any special designations pertaining to managing GRSG, and there are no consistent goals or objectives for management of GRSG habitat within the LUPs. The impacts from GRSG management would continue to be the same as those resulting from current management identified in existing LUP documents, land health standards, and applicable agency policy or guidance. Management of projects and activities within habitat would be done on a case-by-case basis.	Alternative B generally reduces land disturbances and would result in fewer impacts on water resources associated with a particular use compared with Alternative A. Alternative B does identify goals and objectives for enhancing and protecting GRSG habitat, particularly from anthropogenic disturbances. Protecting GRSG habitat would result in few land disturbances and could result in reduced impacts on water quality. Protection measures may also	Management under Alternative C would reduce land disturbances and would result in fewer impacts on water resources associated with a particular use compared with Alternative A. This alternative identifies more exclusion areas for ROWs, closes more areas to leasable and salable minerals, withdraws more areas for locatables and makes more areas unavailable to grazing. It also recommends more	Management under Alternative D would reduce land disturbances and would result in fewer impacts on water resources associated with a particular use compared with Alternative A. RDFs identified for Alternative D, including removing water developments that are negatively impacting habitat, removing or modifying developments that are negatively impacting riparian habitat, and requiring vegetation reclamation from	Alternative E identifies GRSG management areas and discusses collaboration through the ecosystem council, monitoring of habitat, predation controls, a mitigation banking program, mitigation of habitat, and a requirement of net conservation gain. Mitigation of habitat, specifically restoration or creation of habitat, could reduce impacts on water resources, but the result would be dependent on the actions occurring and location of the work.	Alternative F generally constrains resource use and would decrease any impacts on water resources associated with a particular use compared with Alternative A. Under this alternative, there would be a 3 percent cap on disturbance within GRSG habitat. Once the cap is met, no new activities that would result in land disturbance would be authorized. Reduction of surface-disturbing activities through either exclusion or avoidance would reduce	The Proposed Plan combines aspects of Alternative D and the revised Alternative E and would result in fewer impacts on water resources associated with a particular use compared with Alternative A. Of the acres designated as PHMA, some acres are identified as SFAs, which will be managed as PHMA, recommended for withdrawal from the mining act, managed as NSO for mineral leasing and prioritized for management and conservation activities. OHMA is unmapped habitat that is potentially suitable. Protecting GRSG habitat would result in few

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
	include protecting existing water sources from future use and result in increases to water availability.	passive restoration. Reduction of surface disturbance activities through either exclusion or avoidance would reduce potential for soil erosion, thereby reducing impacts on water quality and reducing the need for water for project use, reducing impacts on water quantity.	ground-disturbing activities, would all reduce impacts on water resources. Reduction of surface-disturbing activities through either exclusion or avoidance would reduce potential for soil erosion, thereby reducing impacts on water quality and reducing the need for water for project use, reducing impacts on water quantity. Management under Alternative D, for leasable minerals, would list stipulations for NSO in PHMA and GHMA for currently unleased areas and require site-specific conservation measures for reducing land disturbance on leased areas. In OHMA, nonenergy leasables would be managed as open, and oil and gas and geothermal resources would be managed as open subject to standard stipulations. Although NSO stipulations may result in decreases in surface water impacts by reducing erosion potential and on-site spills, it would not necessarily result in a decrease in groundwater impacts. Potential impacts of drilling and extracting of fluid resources on groundwater aquifers would remain the same. RDFs associated with reducing surface disturbance, vegetation reclamation, and stream crossings would all reduce erosion potential,		potential for impacts to water resources.	land disturbances and could result in reduced impacts to water resources.

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
			thereby reducing impacts on water resources.			
Tribal Interests						
This alternative could lead to decreased opportunities for tribes to maintain traditional cultural practices and values such as observing lekking behavior if the nonestablishment of PHMA/GHMA acres leads to future decreases in GRSG populations. This alternative is expected to maintain tribal access to pine nutting areas and observing lekking behavior because future access to these areas would likely be maintained at current levels. Comprehensive travel and transportation management would maintain current tribal access to important pine nutting areas and juniper trees used to maintain traditional tribal cultural practices and values.	GRSG management goals and objectives could lead to increased opportunities for tribes to maintain traditional cultural practices and values such as observing lekking behavior. Because this alternative proposes ROW avoidance in PHMA and/or GHMA, this could result in decreased opportunities for tribes to maintain traditional practices through restrictions imposed on access to pine nutting areas and observing lekking behavior. However, exceptions to tribes to access current areas used for traditional practices could be granted in future site-specific NEPA analyses. While this alternative would limit motorized travel to existing roads within PHMA, current tribal access to important pine nutting areas and juniper trees used to maintain traditional tribal cultural practices and values would be maintained.	GRSG management goals and objectives could lead to increased opportunities for tribes to maintain traditional cultural practices and values such as observing lekking behavior. Because this alternative proposes ROW avoidance in PHMA and/or GHMA habitat, this could result in decreased opportunities for tribes to maintain traditional practices through restrictions imposed on access to pine nutting areas and observing lekking behavior. However, exceptions to tribes to access current areas used for traditional practices could be granted in future site-specific NEPA analyses. This alternative would limit motorized travel to existing roads within PHMA; however, current tribal access to important pine nutting areas and juniper trees used to maintain traditional tribal cultural practices and values would likely be maintained.	GRSG management goals and objectives could lead to increased opportunities for tribes to maintain traditional cultural practices and values such as observing lekking behavior. Because this alternative proposes ROW avoidance in PHMA and/or GHMA habitat, this could result in decreased opportunities for tribes to maintain traditional practices through restrictions imposed on access to pine nutting areas and observing lekking behavior. However, exceptions to tribes to access current areas used for traditional practices could be granted in future site-specific NEPA analyses. Impacts from travel and transportation would be the same as under Alternative C.	GRSG management goals and objectives could lead to increased opportunities for tribes to maintain traditional cultural practices and values such as observing lekking behavior. This alternative is expected to maintain tribal access to pine nutting areas and observing lekking behavior because future access to these areas would likely be maintained at current levels. Impacts from travel and transportation would be the same as under Alternative D.	GRSG management goals and objectives could lead to increased opportunities for tribes to maintain traditional cultural practices and values such as observing lekking behavior. Because this alternative proposes ROW avoidance in PHMA and/or GHMA habitat, this could result in decreased opportunities for tribes to maintain traditional practices through restrictions imposed on access to pine nutting areas and observing lekking behavior. However, exceptions to tribes to access current areas used for traditional practices could be granted in future site-specific NEPA analyses. Impacts from travel and transportation would be the same as under Alternative B.	Management under the Proposed Plan would establish collaborative management goals and objectives within PHMA/GHMA that could stabilize or increase GRSG populations in the future. If successful, these management goals and objectives could lead to increased opportunities for tribes to maintain traditional cultural practices and values such as observing lekking behavior. This alternative would manage permitted livestock grazing to maintain PHMA and GHMA in order to help meet all life-cycle requirements of GRSG. This could increase tribal opportunities to observe GRSG behavior if this strategy leads to stabilization or increases in GRSG populations. However, this alternative could reduce tribal economic benefits if their current AUMs are reduced in the future in order to meet these management goals. The Proposed Plan would manage and minimize effects of land use actions on PHMA and GHMA but would allow for corridors and ROWs that result in a net conservation gain of habitat. Tribes would be able to maintain traditional practices by accessing pine nutting areas and observing lekking behavior. Restricting new development and land use authorizations near leks would likely maintain traditional tribal cultural practices and values.

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
Climate Change						
The impacts from GRSG management would continue to be the same as those resulting from current management identified in existing LUP documents, land health standards, and applicable agency policy or guidance. Management of projects and activities within habitat would be done on a on climate change would be negligible at the landscape scale; however, there may be more noticeable impacts at the project-site level depending on project-specific activities and mitigation actions.	The NTT report did not address climate change, therefore impacts are the same as under Alternative A.	Alternative C generally constrains resource use and would decrease any GHG emissions associated with a particular use compared with Alternative A. This alternative identifies more exclusion areas for ROWs, closes more areas to leasable and salable minerals, withdraws more areas for locatables, and makes more areas unavailable to grazing. It also recommends more passive restoration, which may or may not help with climate change resiliency.	Alternative D generally constrains resource use and would decrease any GHG emissions associated with a particular use compared with Alternative A.	Alternative E identifies GRSG management areas and discusses collaboration through the ecosystem council, monitoring of habitat, predation controls, a mitigation banking program, mitigation of habitat, and a requirement of net conservation gain. Mitigation of habitat, specifically restoration or creation of habitat, could reduce impacts on climate change, but the result would be dependent on the actions occurring and location of the work.	Alternative F generally constrains resource use and would decrease any GHG emissions associated with a particular use compared with Alternative A. Under this alternative, there would be a 3 percent cap on disturbance within GRSG habitat. Once the cap is met, no new activities that would result in land disturbance would be authorized. Reduction of surface-disturbing activities through either exclusion or avoidance would reduce potential for GHG emissions as well as reduced surface disturbances, allowing for management areas to be more resilient to climate change.	Management under the Proposed Plan would constrain resource use and would decrease any GHG emissions associated with a particular use compared with Alternative A. Of the acres designated as PHMA, some acres are identified as SFAs, which will be managed as PHMA, recommended for withdrawal from the mining act, managed as NSO for mineral leasing and prioritized for management and conservation activities. OHMA is unmapped habitat that is potentially suitable for GRSG. Protecting GRSG habitat would result in few land disturbances and could result in reduced GHG emissions.
Socioeconomic and Environmental Justice						
Under Alternative A, existing opportunities for grazing, recreation, mineral development, lands and realty (including renewable energy development), and travel would not be affected. There would be no change in annual output, annual jobs, or annual earnings. There would be no changes in the distribution of impacts among communities and groups of interest from management of BLM-administered and National Forest System lands when compared to current management. No disproportionately high and adverse impacts on minority or low-income populations would be expected from changes in management.	Under Alternative B, restrictions to oil and gas, geothermal, and wind energy development opportunities would result in reduced growth in output, employment, and earnings compared to Alternative A. Alternative B would also impose limitations and added costs to future economic investments through restrictions to ROW development, including new roadways, and to travel compared with Alternative A. Economic activity attributable to grazing on federal lands with GRSG habitat is likely to be broadly similar to	Adverse impacts on output, employment, and earnings would be greater in Alternative C than any other alternative. Alternative C would impose the most limitations and added costs to future economic investments through ROW and travel restrictions. Livestock grazing on federal lands would be restricted to those allotments with no GRSG habitat, which would account for about 80 percent of the output, employment, and earnings	Under Alternative D, growth in output, employment, and earnings would be expected to be slightly lower than under Alternative B. ROW development and travel under Alternative D would also face restrictions, but these would be more limited than under Alternatives B and C, except for wind and solar development. Economic activity due to grazing on federal lands within GRSG habitat would be similar to Alternative B. The economic effect from recreational activity would	Growth in output, employment, and earnings under Alternative E would be expected to be slightly lower than under Alternative A but higher than all other alternatives. Note that restrictions in Alternative E would affect Nevada only. Limitations and added costs to future economic investments through restrictions to ROW development and travel would be slightly more than under Alternative A and less than all other alternatives. Economic activity due to grazing on federal lands within GRSG habitat would be similar to Alternatives B and D. The economic effect from recreational activity, locatable minerals, and salable minerals would be the similar to	Under Alternative F, growth in output, employment, and earnings would be expected to be the second lowest, higher only than under Alternative C. Restrictions to ROW development and travel would add costs and limit future economic investments similar to Alternative C. Alternative F would impose the most limitations and added costs to future economic investments through ROW and travel restrictions Alternative F would also reduce economic activity	Growth in output, employment and earnings is expected as a result of the Proposed Plan, which would be lower than Alternatives A and E, and slightly lower than Alternatives B and D, but higher than Alternatives F and C. Limitations and added costs to future economic investments through restrictions to ROW development and travel would be similar to Alternative D. Economic activity due to grazing on federal lands within GRSG habitat would be similar to Alternatives B, D, and E. The economic effect from recreational activity would be similar to Alternatives B, D, and F. Reductions in economic activity

Table 2-17
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Proposed Plan
	Alternative A. Although lands unconditionally open to grazing would be the same as under Alternative A, there would likely be some reduction in economic activity due to grazing on federal lands within GRSG habitat, but to what extent is unknown. The economic effect from recreational activity is not possible to quantify, but if there is a difference versus Alternative A, it is likely to be small. Reductions in economic activity from locatable and salable minerals would be expected but are also not possible to quantify. Compared to Alternative A, Alternative B would tend to favor conservation interest and have adverse effects on development interests. No disproportionately high and adverse impacts on minority or low-income populations would be expected from changes in management.	reductions under Alternative C when compared to Alternative A. The economic effect from recreational activity would be the same as Alternative A. Reductions in economic activity from salable minerals would be the same as under Alternative B, and reductions from locatable minerals would be potentially greater than under Alternative B, but these are not possible to quantify. Alternative C would carry the greatest potential of impacts to specific communities, would favor conservation interests and would have adverse effects on grazing interests. Disproportionately high and adverse impacts on low-income populations would be expected related to employment/earnings impacts from ranching and grazing in Lassen and White Pine Counties and northern portions of Nye County.	be similar to Alternative B, and locatable minerals would be similar to Alternative A. Reductions in economic activity from salable minerals would be the same as under Alternatives B and C. Like Alternative B, Alternative D would tend to favor conservation interests and have adverse effect on development interests. No disproportionately high and adverse impacts on minority or low-income populations would be expected from changes in management.	Alternative A. Alternative E would benefit energy and mineral interests the most. No disproportionately high and adverse impacts on minority or low-income populations would be expected from changes in management.	due to grazing on federal lands because of the action to rest a portion of PHMA and GHMA each year and limit utilization levels. The economic effect from recreational activity, locatable minerals, and salable minerals would be similar to Alternatives B. Alternative F would carry the second greatest potential of impacts to specific communities after Alternative C, would favor conservation interests, and would have adverse effects on grazing interests. Disproportionately high and adverse impacts on low-income populations would be expected related to employment/earnings impacts from ranching and grazing in Lassen and White Pine Counties and northern portions of Nye County.	from locatable minerals could occur but would be less than under Alternatives B and F. Reduction in economic activity from locatable minerals would be the same as under Alternatives B, C, D, and F. As with Alternatives B and D, the Proposed Plan would tend to favor conservation interests and would have an adverse effect on development interests. No disproportionately high and adverse impacts on minority or low-income populations would be expected from changes in management.