Chapter 2
Alternatives

CHAPTER 2
PROPOSED ACTION AND ALTERNATIVES

2.1 CHANGES BETWEEN THE DRAFT LUPA/EIS AND 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 within the Utah 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), though it does include several actions that, while new, are qualitatively within the range of alternatives analyzed in the Draft LUPA/EIS. Therefore the Proposed Plans do not require a supplement to the EIS. See **Section 1.12**, Changes Between the Draft LUPA/EIS and Proposed LUPA/Final EIS, in **Chapter 1** for more information on the requirements of supplementation.

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

- Adjustments to PHMA/GHMA: PHMA and GHMA delineations for the Proposed Plans were adjusted for a variety of reasons identified during public comments, in coordination with cooperating agencies, and based on internal review. This included review and evaluation of population distribution and trends, GPS and radio telemetry data, the presence of existing developments and valid existing rights, and the potential to improve, connect or expand habitat. The adjustments were considered within the range of alternatives analyzed in the Draft EIS, so no supplement is required. Adjustments include:
  - removal of PHMA and GHMA from municipality boundaries
  - removal of PHMA and GHMA from the Parker Mountain Population Area in the valley surrounding the towns of Loa, Fremont, Lyman, and Bicknell
  - changing the area southwest of the town of Minersville from GHMA to PHMA
  - changing the portions of the Panguitch Population Area south of the town of Hatch from GHMA to PHMA
  - changing portions of the Halfway Hollow area in the Uintah Population Area from PHMA to GHMA, and changing other portions from GHMA to PHMA
  - changing portions of the Carbon Population Area from PHMA to GHMA
  - adding areas as PHMA in the Box Elder Population Area
  - adding areas as PHMA and SFA in the Rich Population Area
- 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 Plans include the following:

- Allocations were changed from being lek centric, using 1- and 4-mile buffers, to applying to the entire areas that GRSG populations use at some point during their yearly life-cycle (e.g., breeding, nesting, brood-rearing, late brood-rearing, transitional, and winter habitats), as well as adjacent areas where actions could affect GRSG. This change is consistent with the approaches considered in Alternatives B, C, and E. Further, the allocations applied in the Proposed Plans (e.g., NSO for fluid minerals, avoidance for ROWs, closure for mineral materials and nonenergy leasable minerals, and limited for travel) were all analyzed within the range of alternatives considered. While allocations were adjusted to apply to populations, the importance of habitat near leks, as reflected in numerous scientific studies, was maintained through consideration and application of lek buffers at the implementation level (see **Appendix F**).
- ROWs in PHMA were changed from being managed with different allocation by type (i.e., linear, site-type, and underground) to applying one ROW avoidance allocation to the all ROW types, with avoidance criteria specific to types (which was considered in Alternatives D and E).
- Allocations in GHMA were changed from lek buffers for NSO, ROW avoidance, and closures to other minerals, to applying allocations from Alternative A (no action) with the addition of mitigation requirements (e.g., net conservation gain). This was considered in Alternatives A and D.
- PHMA would not include exclusion areas for transmission lines with designated ROW corridors to concentrate disturbance where it would have the least impact on GRSG. Instead, all PHMA would be an avoidance area (similar to Alternative D outside the exclusion areas and corridors), but if avoidance was not possible, any development would have to align with existing infrastructure to minimize impacts on GRSG. This approach was considered in Alternative E.

- Sagebrush Focal Areas (SFA): 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 SFA, which are PHMA with the following additional management (**Map 2.6**):
  - Recommended for withdrawal from the Mining Law 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, but not limited to, review of livestock grazing permits/leases (see the Livestock Grazing/Range Management sections of the BLM and Forest Service Proposed Plans in **Section 2.6**, Proposed Plan Amendments, for additional actions).

  Alternatives B and C recommended PHMA for withdrawal. Alternative D considered managing fluid minerals with an NSO stipulation. Alternatives B and D considered prioritization for grazing land health assessments and processing grazing permits. The actions proposed for SFAs were analyzed in the Draft LUPA/EIS range of alternatives. As such, the management of these areas as SFA and the impacts of the

associated management decisions were addressed in the Draft LUPA/EIS and are qualitatively within the spectrum of alternatives analyzed.

The BLM and Forest Service will manage these areas as SFA, totaling approximately 228,500 acres within the Utah Sub-region, because of the importance of these areas of habitat to the conservation of the species range-wide. Specifically, SFA 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 SFA.

As noted in the Draft LUPA/EIS, one of the goals of this planning effort is to protect both the habitat and the species (see the Draft LUPA/EIS Goal GRSG-1 across the range of alternatives). The Draft LUPA/EIS also notes the importance of managing GRSG at a landscape scale (see Draft LUPA/EIS Objective GRSG-5) to implement habitat conservation. Further, the Draft LUPA/EIS also stated that mapped habitat would be changed through the appropriate BLM and Forest Service planning processes (see the Draft EIS Section 2.5, Draft LUPA/EIS MA-GRSG-2 and Draft LUPA/EIS MA-GRSG-8). The habitat in the SFA exhibits areas of high-quality sagebrush habitat, areas with highest breeding densities, and areas identified as essential to conservation and persistence of the species.

- USGS lek buffer study: The Proposed Plans include a management action to incorporate the lek buffer distances identified in the USGS report *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 Draft LUPA/EIS release, applying these buffers was addressed in the Draft LUPA/EIS and is qualitatively within the spectrum of alternatives analyzed. Specifically, Alternatives B and C identified and analyzed allocation restrictions such as closure to fluid minerals, recommendation for withdrawal, and elimination of grazing. For example, Alternative C proposed closure to fluid, saleable and nonenergy leasable minerals in all GRSG habitat. In Alternative C, all GRSG habitat was also excluded from ROW development. Also considered in the range of alternatives were Alternatives D and E, which identified and analyzed fewer restrictions on development in GRSG habitat than Alternatives B and C. Alternative D proposed avoidance and exclusion of ROWs within various buffers (1 and 4 miles) within both PHMA and GHMA, as well as considering closures for saleable and nonenergy leasable minerals within buffers. Alternative E considered no actions within 1 mile of a lek, if visible, and seasonal restrictions out to 3.1 miles from the lek. Accordingly, the management decision to apply lek buffers for development within certain habitat types during NEPA analysis at the implementation stage is within the range of alternatives analyzed.
- Adaptive management: The Proposed Plans include the identification of hard and soft adaptive management triggers for population and habitat and specifies the appropriate management responses. Chapter 2 of the Draft LUPA/EIS 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 identified in **Appendix B**, Adaptive Management, of the Proposed LUPA/Final EIS were analyzed within the range of alternatives.

  Adaptive management responses in the Proposed Plans are derived from various action alternatives analyzed in the Draft EIS and are therefore within the range of alternatives. For example, if a hard trigger is reached in the Sheeprocks Population Area, the response would be to

change the PHMA boundary to reflect that considered under Alternative B. which was analyzed in the Draft LUPA/EIS. Another example is management of ROWs outside of corridors. If a hard trigger is reached, that area would be changed to be an exclusion area for high voltage transmission lines (greater than or equal to 100 kV). Alternatives B and C considered exclusion of all ROWs, so the adaptive response is within the range of the Draft EIS alternatives. Another example is the wildland fire management adaptive response to "Reassess GRSG habitat needs to determine if priorities for at risk habitats, fuels management areas, preparedness, suppression and restoration have changed." This was analyzed under Alternative D as action Draft LUPA/EIS MA-FIRE-1.

- Monitoring and disturbance: The monitoring framework 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, the BLM and Forest Service received comments on how monitoring and disturbance cap calculations would occur at implementation. The Draft LUPA/EIS 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. A Disturbance and Monitoring Sub-team further enhanced the two appendices (**Appendix C**, Greater Sage-Grouse Monitoring Framework, and **Appendix E,** Greater Sage-Grouse Disturbance Cap Guidance) in the Proposed LUPA/Final EIS.
- Net conservation gain mitigation strategy: The net conservation gain mitigation 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 Draft LUPA/EIS was to "Maintain and/or increase abundance and distribution of GRSG by conserving, enhancing, or restoring the sagebrush ecosystem upon which populations depend, in cooperation with other conservation partners" (see Draft LUPA/EIS Goal GRSG-1). Further, the Draft LUPA/EIS included the concepts of net conservation for GRSG habitat by requiring impacts to GHMA be offset by the successful completion of compensatory mitigation in PHMA (see Draft LUPA/EIS MA-GRSG-7), as well as the employment of off-site mitigation as a form of mitigation (see Draft LUPA/EIS MA-GRSG-9). The GRSG mitigation strategy has been further defined in **Section 2.7.3**, Regional Mitigation, and **Appendix D**, Mitigation Strategy Utah Greater Sage-Grouse LUPA, of the Proposed LUPA/Final EIS.
- Forest Service Plan Amendment: The Forest Service Proposed Plans and the BLM Proposed Plan are displayed separately in this chapter. The Forest Service has two stand-alone Proposed Plans, identified in **Section 2.6.3** and **Section 2.6.4** in the Proposed LUPA/Final EIS (for National Forest System lands in Utah and National Forest System lands that overlap into Wyoming). This is because the Forest Service has different guidance for writing planning language than the BLM; however, the actions are essentially the same for both the BLM and Forest Service under the Proposed Plans. The Forest Service has two Proposed Plans for National Forest System lands in Utah and those that overlap into Wyoming because GRSG in the Wyoming-Uinta and Wyoming-Blacks Fork population areas more closely associate with those in Wyoming and not with those in Utah.
- The FIAT method has been incorporated (**Appendix K**, Fire and Invasives Assessment Tool). The FIAT address threats to GRSG from wildfire, invasive annual grasses and conifer expansion assessment. The Draft LUPA/EIS (see Draft LUPA/EIS action MA-FIRE-1) noted that a process would be identified to provide a mechanism for the BLM and Forest Service to work with other agencies to prioritize future implementation-level habitat treatment and fire management activities. **Appendix K** identifies that process, using resistance and resilience concepts from Chambers et al. (2014).

- Added a decadal treatment target objective for conifer encroachment and annual grass reduction, derived from VDDT modeling results. This expands on the Draft LUPA/EIS Objective GRSG-2 and Draft LUPA/EIS action MA-GRSG-3, addressing increasing the amount and functionality of habitat. The Proposed LUPA/Final EIS merely identifies treatment objectives based on modeling applied in response to public comments on the Draft LUPA/EIS.
- Specific habitat objectives were included in the Proposed Plans, including the identification of percentages and heights for sagebrush, grasses and forbs. This is consistent with Draft LUPA/EIS Objective GRSG-2, which notes that "desired cover percentages and heights for sagebrush, grasses and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007)." It also noted that "adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics…" Based on several public comments requesting the guidelines from literature be included, as well as public and internal comments related to the timing of setting habitat objectives, the Proposed Plans incorporate a table that quantifies the objective contained in the Draft LUPA/EIS. As described in the Draft LUPA/EIS, the objectives included in the Proposed Plans are based on scientific literature, with any adjustments based on local GRSG use patterns as documented through on-the-ground research.
- The BLM and Forest Service Proposed Plans were organized and numbered for logical groupings and to better correlate with other sub-regions.
- Wild horse and burro actions were updated to be consistent throughout the Great Basin.

2.2 INTRODUCTION

The LUPA/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 range of reasonable alternatives. Public and internal (within BLM and Forest Service) scoping (see **Section 1.6**, Scoping and Identification of Issues for Development of the Proposed Plan and Draft Alternatives) identified issues that present opportunities for alternative courses of action, while the purpose and need for action described in **Section 1.2**, Purpose and Need, provides sideboards for determining "reasonableness."

This chapter introduces and details the Proposed Plans. The Proposed Plans are based on the Alternative D (preferred alternative) that was presented in the Draft LUPA/EIS, with adjustments incorporating a mix of management actions selected from the range of alternatives in the Draft LUPA/EIS and based on best science, public scoping comments, public comments on the Draft LUPA/EIS and internal agency 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 policies of the BLM and Forest Service; four 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 was no requirement to select the Preferred Alternative, or any of the separate individual alternatives as they were presented in the Draft LUPA/EIS, within the Final LUPA/EIS as the Proposed Plans. The BLM and Forest Service have the discretion to select any of the alternatives as the agencies' Preferred Alternative in the Draft LUPA/EIS, and also have the discretion to modify the Preferred Alternative between the Draft LUPA/EIS and the Proposed LUPA/Final EIS into the Proposed Plans. The modifications are allowable as long as the actions presented in the Proposed Plans

within the Proposed LUPA/Final EIS are within the range of alternatives analyzed in the Draft EIS.

NEPA requires agencies to prepare a supplement to the draft EIS: 1) if 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 variation of one of the alternatives and is qualitatively within the spectrum of alternatives analyzed in the draft EIS.

The Proposed Plans include components of the alternatives analyzed in the Draft LUPA/EIS. Taken together, these components present a suite of management decisions that present a variation of the preferred alternative identified in the Draft LUPA/EIS and are qualitatively within the spectrum of alternatives analyzed.

As such, the BLM and Forest Service have determined that the Proposed Plans are a variation of the preferred alternative and that the impacts of the Proposed Plans would not affect the human environment in a substantial manner or to a significant extent not already considered in the Draft LUPA/EIS. The impacts disclosed in the Proposed LUPA/Final EIS are similar or identical to those described Draft LUPA/EIS.

2.3 Introduction to Draft Alternatives

Land use planning 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 uses that are permitted, restricted, or prohibited, and may include stipulations or restrictions. Allowable uses also identify lands where specific uses are excluded to protect resource values, or where certain lands are open or closed in response to legislative, regulatory, or policy requirements. Implementation decisions are site-specific actions and are typically not addressed in LUPs.

On National Forest System lands, forest plans guide management activities and contain desired conditions and objectives as well as standards and guidelines that provide direction for project planning and design. Desired conditions are descriptions 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. Standards are mandatory constraints on project and activity decision making. Not meeting a standard would require a site-specific forest plan amendment. A guideline is 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.

2.3.2 Purpose of Alternatives Development

Land use planning and NEPA regulations require the BLM and Forest Service to formulate a range of reasonable alternatives. Alternative development is guided by established planning criteria (outlined for the BLM at 43 CFR 1610; see **Chapter 1**).

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

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

- Address the identified major planning issues;
- Explore opportunities to enhance management of resources and resource uses;
- Resolve conflicts among resources and resource uses; and
- 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 regarding resources and resource uses might be resolved, and offers the decision maker a range of reasonable alternatives from which to make an informed decision. The components and broad aim of each alternative considered for the Utah Sub-region are discussed below.

2.4 Alternative Development Process for the Utah Greater Sage-Grouse Land Use Plan Amendment

The Utah Sub-region planning team employed the BLM planning process (outlined in **Section 1.5**, Planning Processes) to develop a range of reasonable alternatives for the LUPA/EIS. The BLM and Forest Service complied with NEPA and the CEQ implementing regulations at 40 CFR Part 1500 in the development of alternatives for this Proposed LUPA/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 range of reasonable alternatives, the alternatives include management options for the planning area that would modify or amend decisions made in the applicable LUP. Since this LUPA/EIS will specifically address GRSG conservation, many decisions within 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 Range of Reasonable Alternatives

Based on scoping and collaboration efforts, the BLM and Forest Service finalized their planning criteria and identified 53 key planning issues to help frame the alternatives development process. Following the close of the public scoping period in March 2012, the BLM and the Forest Service began the alternatives development process. Between May 2012 and February 2013, the planning team (BLM, Forest Service, and cooperating agencies) met and coordinated to develop management goals and to identify objectives and actions to address the goals. The various groups met and coordinated numerous times throughout this period to refine their work. As outcomes of this process, the planning team:

- Developed one No Action Alternative (Alternative A) and four preliminary action alternatives. The first action alternative (Alternative B) is based on *A Report on National Greater Sage-Grouse Conservation Measures* (NTT 2011), and the second action alternative (Alternative C) is based on proposed alternatives submitted by conservation groups during scoping, including two sub-alternatives for livestock grazing (C1 and C2).
- Developed a third action alternative (Alternative D) that considered alternative actions within the range of alternatives, and sought to balance competing interests.
- Developed two alternatives based on the GRSG protection measures recommended by state governments as a fourth alternative (Alternative

E), with two sub-alternatives to reflect GRSG measures from the State of Utah (E1) and the State of Wyoming (E2).

Each of the preliminary action alternatives in the Draft LUPA/EIS was designed to:

- Respond to USFWS-identified issues and threats to GRSG and its habitat
- Address the planning issues (identified in **Section 1.6.2**, Issues Identified for Consideration in the Utah Sub-region Greater Sage-Grouse Land Use Plan Amendment);
- Fulfill the purpose and need for the LUPA (outlined in **Section 1.2**); and
- Meet the multiple use mandates of the FLPMA (43 CFR 1716), the Multiple Use and Sustained Yield Act, and the NFMA.

2.4.2 Resulting Range of Alternatives in Draft LUPA/EIS

The four resulting action alternatives (Alternatives B, C, D, and E) in the Draft LUPA/EIS offer a range of management approaches to maintain or increase GRSG abundance and distribution of GRSG by conserving, enhancing, or restoring the sagebrush ecosystem upon which GRSG populations depend in collaboration with other conservation partners. While the goal is the same across all the 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 2.9**, Summary Comparison of Proposed Plan Amendments and Draft Alternatives. **Section 2.10**, Detailed Description of Draft Alternatives, also provides a complete description of the proposed decisions for each alternative, including the project goal and objectives, management actions, and allowable uses for individual resource programs. Maps in **Appendix A**, Maps, 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.

GIS data was used to perform acreage calculations, and to generate the maps in **Appendix A**. Calculations are dependent upon the quality and availability of data. Given the scale of the analysis, the compatibility constraints between datasets, and lack of data for some resources, all calculations are approximate, and serve for comparison and analytic purposes only. Likewise, the maps in **Appendix A** are provided for illustrative purposes and subject to the limitations discussed above. No warranty is made by the BLM or Forest Service as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

2.5 BLM/Forest Service Resource Programs for Addressing GRSG Threats

The direction for managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS in their 2010 warranted but precluded finding on listing the GRSG, as well as their COT report. The USFWS threats do not necessarily align with BLM or Forest Service resource program areas, and are often integrated into several different resource program areas. **Table 2.1** provides a cross-walk between each of the 2010 warranted but precluded finding and COT identified threats and the BLM and Forest Service program areas addressing these threats, with references to specific sections of the Proposed Plan Amendments. For the BLM Proposed Plan, see **Section 2.6.2**. The Forest Service Proposed Plans can be found in **Section 2.6.3** (Utah) and **Section 2.6.4** (Wyoming).

Table 2.1
USFWS Threats to GRSG and Their Habitat, Applicable BLM and Forest Service Proposed Plan Amendments Resource Program Areas Addressing these Threats

USFWS-Identified Threats to GRSG and Its Habitat (2010 warranted but precluded finding)	COT Report-Identified Threats to GRSG and Its Habitat (2013)	Applicable BLM/Forest Service Proposed Plan Resource Program Addressing Threat
Wildland Fire	Fire	BLM: Fire Management Forest Service: Fire Management
Invasive Species	Nonnative, Invasive Plants Species	BLM: Vegetation, Livestock Grazing/Range Management, Fire Management, and Recreation Forest Service: Greater Sage-Grouse 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 and Fire Management Forest Service: Greater Sage-Grouse Habitat and Fire Management
Grazing	Grazing	BLM: Livestock Grazing/Range Management, Wild Horses and Burros, Special Status Species – Greater Sage-Grouse, and Vegetation Forest Service: Livestock Grazing
See *Grazing (above)*	Range Management Structures	BLM: Livestock Grazing/Range Management Forest Service: Livestock Grazing
No similar threat identified	Free-Roaming Equid Management	BLM: Wild Horses and Burros
Conifer Encroachment	Pinyon and/or Juniper Expansion	BLM: Fire Management and Vegetation Forest Service: Fire Management and Greater Sage-Grouse Habitat
Agriculture and Urbanization	Agricultural Conversion and Ex-Urban Development	BLM: Lands and Realty Forest Service: Lands and Realty/Land Ownership Adjustments
Hard Rock Mining	Mining	BLM: Lands and Realty, Locatable Minerals, Mineral Materials, and Nonenergy Leasable Minerals, Coal Forest Service: Coal Mines, Locatable Minerals, Nonenergy Leasable Minerals, and Mineral Materials
See Infrastructure, Roads	Recreation	BLM: Recreation and Comprehensive Travel and Transportation Management Forest Service: Recreation and Roads and Transportation

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USFWS-Identified Threats to GRSG and Its Habitat (2010 warranted but precluded finding)	COT Report-Identified Threats to GRSG and Its Habitat (2013)	Applicable BLM/Forest Service Proposed Plan Resource Program Addressing Threat
Infrastructure • Power lines/ pipelines • Roads • Communication sites • Railroads Range improvements (see below)	Infrastructure	BLM: Lands and Realty and Comprehensive Travel and Transportation Management Forest Service: Lands and Realty and Roads and Transportation
Infrastructure – Range Improvements	Range Management Structures	BLM: Livestock Grazing/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 Plans addressing this threat.*
Weather	No similar threat identified	*There is no BLM or Forest Service resource program in the Proposed Plans addressing this threat.*
Predation	No similar threat identified	BLM: All applicable programs Forest Service: Greater Sage-Grouse Habitat, Land and Realty, and Minerals
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 Plans addressing this threat.*
Contaminants	No similar threat identified	BLM: There is no BLM resource program in the Proposed Plans addressing this threat. Forest Service: Minerals

Source: USFWS 2010a, 2013a

2.6 PROPOSED PLAN AMENDMENTS

2.6.1 Development of Proposed LUPA

In developing the Proposed Plan Amendments, the BLM/FS 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 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 Plans 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 modified the Preferred Alternative, identified as Alternative D as presented in the Draft LUPA/EIS, which is now considered the Proposed Plan Amendment for managing BLM-administered and National Forest System lands within the Utah Sub-region.

Since release of the Draft LUPA/EIS, the BLM and Forest Service have continued to work closely with a broad range of governmental partners, including governors and state agencies, the USFWS, Indian tribes, county commissioners, and many others. Through this cooperation, the BLM and Forest Service have developed Proposed Plans that take into account state, tribal, and local plans, policies and strategies in accordance with applicable law, and contribute to the long-term conservation of GRSG and its habitat.

Since release of the Draft LUPA/EIS, the BLM and Forest Service have continued to work closely with a broad range of governmental partners, including governors and state agencies, the USFWS, Indian tribes, county commissioners, and many others. Through this cooperation, the BLM and Forest Service have developed Proposed Plans that take into account state, tribal, and local plans, policies and strategies in accordance with applicable law, and contribute to the long-term conservation of GRSG and its habitat.

The BLM and Forest Service also received many substantive public comments on the Draft LUPA/EIS (see **Appendix X**, Response to Comments on the Draft Land Use Plan Amendment/Environmental Impact Statement), which greatly informed the BLM and Forest Service's development of the Proposed Plans.

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

The BLM and Forest Service have refined the Proposed Plans 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 Plans would limit or eliminate new surface disturbance in PHMA, while minimizing disturbance in GHMA. In addition to establishing protective land use allocations, the Proposed Plans would implement a suite of management tools such as disturbance limits, GRSG habitat objectives and monitoring, mitigation approaches, adaptive management triggers and responses, and lek buffer-distances 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, the BLM, Forest Service-Utah, and Forest Service-Wyoming Proposed Plans have been separated into three sections (described in **Sections 2.6.2**, **2.6.3**, and **2.6.4**, respectively).

In considering the allocation decisions identified in the Proposed Plans, where more restrictive land use allocations or decisions are made in existing RMPs (e.g., management for WSAs, management of riparian areas, or other special status species), those more restrictive land use allocations or decisions will remain in effect and will not be amended by this LUPA.

The numbering of the decisions in the Proposed Plans (**Sections 2.6.2**, **2.6.3**, and **2.6.4**) are different from the numbers presented in the Draft LUPA/EIS (Table 2.1 of the Draft LUP/EIS). The numbering in the Proposed Plans are for reference purposes in the Proposed LUPA/Final EIS only.

2.6.2 BLM Proposed Plan Amendment

In accordance with Appendix C of the BLM's *Land Use Planning Handbook* (H-1601-1), land use plan and plan amendment decisions are broad-scale decisions that guide future land management actions and subsequent site-specific implementation decisions. Land use plan decisions fall into two categories, which establish the base structure for desired outcomes (goals and objectives), and allowable uses and management actions to achieve 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 timeframes for achievement, as appropriate.
- Allowable uses identify uses, or allocations, that are allowable, restricted, or prohibited on BLM-administered lands and mineral estate.
- Management Actions identify measures or criteria to achieve desired objectives, including actions to maintain, restore, or improve land health.

RDFs are means, measures, or practices intended to reduce or avoid adverse environmental impacts. This LUPA proposes a suite of design features that would establish the minimum specifications for mineral-related water developments, certain mineral development, and fire and fuels management and would mitigate adverse impacts. These design features would be required to provide a greater level of regulatory certainty than through implementing BMPs.

In general, the design features are accepted practices that are known to be effective when implemented properly at the project level. However, their applicability and overall effectiveness cannot be fully assessed except at the project-specific level when the project location and design are known. Because of site-specific circumstances, some features may not apply to some projects (e.g., when a resource is not present on a given site) or may require slight variations from what is described in the LUPA (e.g., a larger or smaller protective area). All variations in design features would require appropriate analysis and disclosure as part of future project authorizations. Additional mitigation measures may be identified and required during individual project development and environmental review. The proposed RDFs are presented in **Appendix G**, Required Design Features.

Special Status Species - Greater Sage-Grouse (GRSG)

Areas of Critical Environmental Concern (ACEC)

Comprehensive Travel and Transportation Management

Fire Management

Lands and Realty

Livestock Grazing/Range Management

Minerals

Nonenergy Leasable Minerals

Coal

Locatable Minerals

Fluid Minerals

Mineral Materials

Recreation

Vegetation

Wild Horses and Burros

Special Status Species - Greater Sage-Grouse (GRSG)

Goal

Goal GRSG-1

Maintain and/or increase GRSG abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners.

Objectives

Objective GRSG-1

Designate PHMA for each WAFWA MZ 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.

Protect PHMA from anthropogenic disturbances that will reduce distribution or abundance of GRSG. Enhance or improve GRSG habitat (e.g., through restoration or rehabilitation activities) within PHMA that has been impaired or altered.

Objective GRSG-2

In all GRSG habitat, manage activities that result in habitat loss and degradation to provide a net conservation gain of GRSG habitat. Exceptions to net conservation gain for GRSG may be made for vegetation treatments to benefit Utah prairie dog.

Objective GRSG-3

In all GRSG habitat, where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ecological site description (ESD), maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, and winter habitats.

The Habitat Objectives for Greater Sage-Grouse – BLM Proposed Plan (see Table Objective GRSG-3) summarize the characteristics that research has found represent the seasonal habitat needs for GRSG. The specific seasonal components identified in Table Objective GRSG-3 were adjusted based on local science and monitoring data to define the range of characteristics used in the Utah 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 C**). 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.

Table Objective GRSG-3
Habitat Objectives for Greater Sage-Grouse – BLM Proposed Plan

ATTRIBUTE	INDICATORS	DESIRED CONDITION
Breeding and Nesting (February 15-June 15)[1, 2, 3, 4, 5, 6]		
Lek Security	Proximity of trees	Trees absent or uncommon on shrub/grassland ecological sites within 1.8 miles (approx. 3 km) of occupied leks.[6, 7, 8]
	Proximity of sagebrush to leks	Has adjacent sagebrush cover.[6]
Cover	% of seasonal habitat meeting desired conditions	>80% of the mapped nesting habitat meets the recommended vegetation characteristics, where appropriate (relative to ecological site potential, etc.).[8]
	Sagebrush cover	≥15%[6, 8, 9]
	Total shrub cover[6, 8, 9]	15-30%: Box Elder, Parker Mountain, Bald Hills, Hamlin Valley, Panguitch, Uintah south of Hwy 40 15-35%: Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40
	Sagebrush height[6, 8, 9]	>12 inches (30 cm): Box Elder, Bald Hills, Hamlin Valley, Sheeprocks, Ibapah >10 inches (25 cm): Rich, Carbon, Emery, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40
	Predominant sagebrush shape[10]	>50% in spreading (applicable to the specific sagebrush types prone to columnar vs. spreading shape e.g., Wyoming, not black sage)[6]
	Perennial grass cover[6, 8, 9]	>10%: Box Elder, Bald Hills, Hamlin Valley, Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40 >5%:Parker Mountain, Panguitch, Uintah south of Highway 40
	Perennial grass and forb height[6, 8, 9]	Provide overhead and lateral concealment from predators.[11]
	Perennial forb canopy cover[6, 8, 9]	>5%: Box Elder, Bald Hills, Hamlin Valley, Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40 >3%: Parker Mountain, Panguitch, Uintah south of Highway 40

Table Objective GRSG-3
Habitat Objectives for Greater Sage-Grouse – BLM Proposed Plan

ATTRIBUTE	INDICATORS	DESIRED CONDITION
Brood-Rearing/Summer (April 15-August 15)[1]		
Cover	% of Seasonal habitat meeting desired condition	>40% of the mapped brood-rearing/summer habitat meets recommended habitat characteristics where appropriate (relative to ecological site potential, etc.)[8]
	Sagebrush cover[6, 8, 9]	>10%
	Total shrub cover[6, 8, 9]	10-25%: Box Elder, Bald Hills, Hamlin Valley, Panguitch, Rich, Parker Mountain, Uintah 10-30%: Carbon, Emery, Sheeprocks, Ibapah,
	Sagebrush height[6, 8, 9]	>12 inches (30 cm): Box Elder, Bald Hills, Hamlin Valley, Sheeprocks, Ibapah >10 inches (25 cm): Rich, Carbon, Emery, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40
	Perennial grass cover and forbs[6, 8, 9]	>15% (Grass: >10%; Forb: >5%): Box Elder, Rich, Sheeprocks, Ibapah, Parker Mountain, Panguitch, Uintah, Carbon, Emery >15% (Grass: >8%; Forb: >7%): Bald Hills, Hamlin Valley,
	Riparian areas/mesic meadows	Proper Functioning Condition[6]
	Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present[6, 12]
Winter (November 15-March 15)[1]		
Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the mapped wintering habitat meets winter habitat characteristics where appropriate (relative to ecological site, etc.). [8]
	Sagebrush cover above snow[6, 8,]	>10%
	Sagebrush height above snow[6, 8, 9, 13]	>10 inches (25 cm): Box Elder, Bald Hills, Hamlin Valley, Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40

Notes:
[1] Specific dates would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter), in coordination with the State of Utah.
[2] Utah Greater Sage-Grouse Working Group 2013
[3] Doherty 2008

Table Objective GRSG-3
Habitat Objectives for Greater Sage-Grouse – BLM Proposed Plan

ATTRIBUTE	INDICATORS	DESIRED CONDITION

[4] Doherty et al. 2010
[5] Holloran and Anderson 2005
[6] Stiver et al. 2015 *In Press*
[7] Baruch-Mordo et al. 2013
[8] Connelly et al. 2000
[9] Unpublished data, Utah Community-Based Conservation Program Greater Sage-grouse Statewide Database, Utah State University, Logan, Utah and Brigham Young University, Provo, Utah. Summarization and analysis of nesting and brood-rearing habitat characteristics from data collected through Utah State University and Brigham Young University research efforts. Researchers located the nest and brood sites using radio-marked telemetry methods. Shortly after the site was used by the marked bird (after hatch or use by a brood), vegetation characteristics on the site were measured using the line intercept method for shrub canopy cover and Daubenmire frames for herbaceous cover. Researchers across the various study areas used methods that followed the guidelines identified in Connelly et al. (2003).
[10] Sagebrush plants that are more tree or columnar-shaped provide less protective cover near the ground than sagebrush plants with a spreading shape (Stiver et al. 2015 *In Press*). Some sagebrush plants are naturally columnar (e.g., Great Basin big sagebrush), and a natural part of the plant community. However, a predominance of columnar shape arising from animal impacts may warrant management investigation or adjustments at site specific scales.
[11] Specific height requirements needed to meet the objective will be set at the time of watershed assessments.
[12] Preferred forbs are listed in Stiver et al. 2015 *In Press*. Overall total forb cover may be greater than that of preferred forb cover since not all forb species are listed as preferred.
[13] 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.

When using the above indicators and desired conditions to guide management actions or during land health assessments, consider that they are sensitive to the ecological processes operating at the scale of interest and that a single habitat indicator does not necessarily define habitat suitability for an area or particular scale. Indicators must be collectively reviewed, assessed based on the site potential, and put into spatial and temporal context to correctly determine habitat suitability, which will include more than one scale and multiple indicators.

Objective GRSG-4

Within PHMA, increase the amount and functionality of seasonal habitats by:

- Maintaining or increasing sagebrush in perennial grasslands, where needed to meet the Habitat Objectives for Greater Sage-Grouse (Table Objective GRSG-3), unless there is a conflict with Utah prairie dog.

- Reducing conifer (e.g., pinyon/juniper) from areas that are most likely to support GRSG at a rate that is at least equal to the rate of encroachment.
- Reducing the extent of annual grasslands.
- Maintaining or improving corridors for migration or movement between seasonal habitats, as well as for long-term genetic connections between populations.
- Maintaining or improving understory (grass, forb) and/or riparian condition within breeding and late brood-rearing habitats.
- Conducting vegetation treatments based on the following 10-year (decadal) acreage objectives:

Population Areas	Mechanical Treatment[1]	Annual Grass Treatment[1]
Box Elder	9,300	17,800
Ibapah; Hamlin Valley	17,900	2,100
Rich; Uintah	40,700	6,800
Carbon	2,600	200
Bald Hills; Panguitch	43,900	8,900
Parker Mountain	32,800	2,200
Sheeprocks	33,700	10,000
Statewide	*180,900*	*48,000*

[1] These acreage figures, based on VDDT modeling, represent an objective for treatment on BLM-administered lands over a 10-year (decadal) timeframe to support achievement or progress toward GRSG habitat objectives (see **Appendix V**, Great Basin Vegetation Modeling using Vegetation Dynamics Development Tool). This accounts for variations in yearly funding availability and does not reflect a maximum or minimum acreage for any one treatment type or total treatment acreage, should funding and site specific conditions allow for more or less treatment acreage than described in order to meet habitat objectives.

Outside PHMA (in adjacent opportunity areas) improve and restore historical GRSG habitat to support GRSG populations and to maintain or enhance connectivity. Statewide, complete a decadal average of 170,200 acres of mechanical treatments and 33,000 acres of annual grass treatments. Prioritization is for completion of treatments within PHMA before treating areas outside.

Objective GRSG-5

Participate in local GRSG conservation efforts (e.g., UDWR, NRCS, local working groups) to implement landscape-scale habitat conservation, to implement consistent management to benefit GRSG, and to gather and use local research and monitoring to promote the conservation of GRSG.

Management Actions

MA-GRSG-1

Identify PHMA and GHMA as follows (**Map 2.6**):

Population Area	Acres					
	PHMA			GHMA		
	Total Surface[1]	BLM/FS Surface[2]	Split Estate Minerals[3]	Total Surface[1]	BLM/FS Surface[2]	Split Estate Minerals[3]
Uintah	566,800	341,800	62,200	991,500	301,600	74,200
Carbon	260,100	52,200	115,500	198,700	83,400	18,700
Emery	85,500	81,400	2,700	11,400	7,100	2,600
Parker Mtn	741,300	512,700	79,800	12,900	7,000	420
Panguitch	343,900	222,900	31,300	0	0	0
Bald Hills	326,400	259,400	5,200	21,200	8,300	1,200
Hamlin Valley	143,700	101,500	6,600	0	0	0
Sheeprocks	534,600	419,500	18,100	296,500	106,800	21,200
Ibapah	88,800	48,000	750	10,800	10,100	0
Box Elder	1,135,700	439,200	112,000	0	0	0
Rich	1,051,000	218,800	126,600	197,900	4,400	16,500
Lucerne	0	0	0	37,500	2,300	9,200
Strawberry	161,500	40,900	0	20,600	0	480
WY-Uinta	1,100	1,100	0	20,900	20,900	0
WY-Blacks Fork	23,700	23,700	0	31,100	31,100	0
Statewide	*5,464,100*	*2,763,100*	*560,750*	*1,851,000*	*583,000*	*144,500*
% PHMA/ GHMA	*75%*	*82%*	*79%*	*25%*	*18%*	*21%*

[1] Acreage associated with total PHMA/GHMA polygon, regardless of land ownership.
[2] Acreage within PHMA/GHMA where the BLM and Forest Service have managerial authority on the surface estate.
[3] Acreage where the surface and mineral estates are owned by separate entities. These acres show where the surface estate is not BLM or Forest Service, but that have a federal mineral estate. Minerals decisions apply to the combination of the BLM and Forest Service surface and mineral estates.
[4] The 41,200 acres of National Forest System lands in the Anthro Mountain area would be managed as neither PHMA nor GHMA. These areas would be identified as "Occupied – Anthro Mountain."

Minor adjustments to PHMA/GHMA external boundaries should be made if BLM biologists, in coordination with state of Utah biologists, determine site-specific

conditions warrant such changes to more accurately depict existing or potential GRSG habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) would be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting occupied habitat and PHMA/GHMA boundaries in **Appendix N**, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol.

In the mapped PHMA and GHMA there may be areas that lack the principle habitat components necessary for GRSG, including but not limited to rock outcrops, alkaline flats, and pinyon-juniper ecological sites. Areas of non-habitat would be identified during site-specific project review by agency biologists, in discussion with the State of Utah and other agencies, as appropriate. Decisions would apply to existing sagebrush areas and areas with ecological sagebrush potential within PHMA or GHMA, as well as non-habitat if the following conditions are not met.

Application of decisions in non-habitat areas may be excepted in GRSG areas (PHMA/GHMA) if it can be shown that the action would occur in non-habitat and all the following conditions are met:

- access through GRSG existing and potential habitat to the activity in non-habitat occurs only on existing roads, and no improvements to roads would be required in GRSG habitat that would change road classification;
- no activity would be permitted or authorized if it would establish a valid existing right that would subsequently require construction of new roads within GRSG habitat, unless the activity is allowed in GRSG habitat within PHMA as described in the decisions below;
- the non-habitat does not provide important connectivity between habitats;
- indirect impacts on GRSG habitat and associated populations within the PHMA are reduced or eliminated through onsite mitigation (e.g., sound, tall structures) to the extent that the associated NEPA document demonstrates the project would not impair the function of adjacent seasonal habitats or of the life-history or behavioral needs of the GRSG population.

MA-GRSG-2

Designate SFA as shown on **Map 2.6** (228,500 acres of BLM and Forest Service surface estate; 4,900 acres split-estate federal minerals). SFA will be managed as PHMA, with the following additional management:

- Recommended for withdrawal from the Mining Law of 1872 (as amended), 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, but not limited to review of livestock grazing permits/leases.

MA-GRSG-3

In PHMA, apply the following management to all discretionary activities not otherwise excluded or closed to minimize and mitigate effects on GRSG and its habitat from the project/activity:

<u>A- Net Conservation Gain</u>

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. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Exceptions to net conservation gain for GRSG may be made for vegetation treatments to benefit Utah prairie dog.

All mitigation would be conducted according to the mitigation framework contained in **Section 2.7.3**, Regional Mitigation, and in **Appendix D**.

<u>B- Disturbance Cap</u>

In PHMA, manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) biologically significant units (BSU) (total PHMA area associated with a GRSG population area) and 2) within a

proposed project analysis area. See **Appendix E** for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area.

If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within GRSG PHMA in any given BSU, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 {as amended}, valid existing rights, etc.) will be permitted by the BLM within GRSG PHMA in any given BSU until the disturbance has been reduced to less than the cap.

If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in PHMA, then no further anthropogenic disturbance will be permitted by the 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 Mining Law of 1872 {as amended}, valid existing rights, etc.).

An area with disturbance is not excluded from the 3 percent until it has been restored to provide GRSG habitat. The objective of successful restoration is to provide for the needs of GRSG, as evidenced by one of the following:

- Vegetative cover is consistent with the GRSG habitat objectives and the ESD (Objective GRSG-2), or
- Monitoring indicates the area is regularly used by GRSG to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter).

Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.

C- Density of Energy/Mining Facilities

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 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 collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 {as amended}, valid existing rights, etc.). Energy and mining facilities to which this action applies are:

- Oil and gas wells and development facilities,
- Coal mines,
- Wind towers,
- Solar fields,
- Geothermal wells/developments, and
- Active locatable, leasable, and saleable developments.

D- Predation

In PHMA, eliminate or minimize external food sources for corvids, particularly dumps, or waste transfer facilities. Apply BMPs to development activities to reduce opportunities for GRSG predators (e.g., limiting food sources, nest/perches deterrents, road kill).

Apply habitat management practices (e.g. grazing management, vegetation treatments) that decrease the effectiveness of predators.

Collaborate with applicable government entities to implement programs to control predator populations of GRSG (e.g., ravens, red fox, badgers, raccoons, raptors).

E- Noise Restrictions

In PHMA, limit noise from discretionary activities (during construction, operation, or maintenance) to not exceed 10 decibels above ambient sound levels at occupied leks from 2 hours before to 2 hours after official sunrise and sunset during breeding season (e.g., while males are strutting); support the establishment of ambient baseline noise levels for PHMA habitat area leks.

Limit project related noise in other PHMA habitats and seasons where it would be expected to reduce functionality of habitats that support associated GRSG populations.

As additional research and information emerges, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize potential for noise impacts on PHMA GRSG population behavioral cycles.

F- Tall Structure Restrictions

In PHMA, limit the placement of permanent tall structures within GRSG breeding and nesting habitats.

For the purposes of this restriction, a tall structure is any man-made structure that provides for perching/nesting opportunities for predators (e.g., raptors, ravens) that are naturally absent, or that decreases the use of an area by GRSG. A determination as to whether something is considered a tall structure would be made based on local conditions such as existing vegetation or topography.

G- Seasonal Restrictions

In PHMA, in coordination with state of Utah biologists, apply seasonal restrictions during the period specified below to manage discretionary surface disturbing activities and uses on public lands to prevent disturbance to GRSG during seasonal life cycle periods as follows:

- In breeding (leks), nesting and early brood-rearing habitat from Feb 15 – Jun 15
- In brood rearing habitat from Apr 15 – Aug 15
- In winter habitat from Nov 15 – Mar 15

Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect GRSG, in coordination with state of Utah biologists.

H- Buffers

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) in accordance with **Appendix F**, Applying Lek-Buffer Distances.

I- Required Design Features

In PHMA, apply the RDFs from the applicable sections identified in **Appendix G** when authorizing/permitting site-specific activities/projects for wildland fire management actions, travel and transportation, lands and realty, fluid minerals, nonenergy leasable minerals, coal, mineral materials, and locatable minerals (consistent with applicable law).

The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs would require that at least one of the following 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 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.

MA-GRSG-4

In PHMA and in adjacent opportunity areas, maintain, improve and restore GRSG habitat to support GRSG populations and to maintain or enhance connectivity.

Vegetation treatments would be applied to meet GRSG habitat objectives and provide additional GRSG habitat.

Adjust PHMA boundaries to include additional restored GRSG habitat and habitat identified during survey or inventory work. Changes to maps and associated management would occur through the appropriate BLM planning processes (e.g., plan maintenance or plan amendment), as described in **Appendix N**.

MA-GRSG-5

In GHMA, apply the following management to meet the objective of a net conservation gain for discretionary actions that could result in habitat loss and degradation:

A- Existing Management

Implement GRSG management actions included in the existing RMPs and project-specific mitigation measures associated with existing decisions.

B- Net Conservation Gain

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. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Exceptions to net conservation gain for GRSG may be made for vegetation treatments to benefit Utah prairie dog.

All mitigation would be conducted according to the mitigation framework contained in **Section 2.7.3**, Regional Mitigation, and in **Appendix D**.

C- Buffers

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) in accordance with **Appendix F**.

D- Required Design Features

In GHMA, apply the fluid mineral RDFs that are associated with GHMA identified in **Appendix G** when authorizing/permitting site-specific fluid mineral development activities/projects.

The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs would require that at least one of the following 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 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.

MA-GRSG-6

Sage-Grouse Management outside PHMA/GHMA

Proposed projects within State of Utah SGMAs and USFWS PACs, as well as adjacent to PHMA outside these areas, will consider impacts on GRSG and implement measures to mitigate impacts when preparing site-specific planning and environmental compliance documents.

Outside of PHMA, prior to site-specific authorizations, the BLM would evaluate habitat conditions and may require surveys to determine if the project area contains GRSG habitat (FLPMA, 43 USC 1701 Sec. 201 (a); BLM Manual 6840.04 D3; BLM-M-

6840.04 E2). Surveys would be required prior to authorizing discrete anthropogenic disturbances within 4 miles of an occupied lek that is located in PHMA, but only in existing sagebrush.

If an area is determined to be GRSG habitat (e.g., nesting, brood-rearing, winter, transition), mitigation will be considered as part of the project level NEPA analysis and will be attached as conditions of approval (COAs) to new discretionary actions, if deemed necessary to protect the habitat (BLM Manual 6840.04 D 5). Measures that may be considered include those identified in **Appendix G**.

Outside of PHMA, but within SGMAs and PACs, avoid removal of sagebrush and minimize development that would create a physical barrier to GRSG movement; these areas may be used by GRSG to connect to other populations or seasonal habitat areas

Outside of PHMA, but within SGMAs and PACs, consider noise and permanent structure stipulations around leks.

Outside PHMA, portions of opportunity areas (**Map 2.4** and **Map 2.6**) within 4 miles of a lek that is located in PHMA would be managed with the following allocations:

- Fluid minerals would be open for leasing with controlled surface use (CSU) stipulations (noise and tall structures).
- Lands ROWs, permits, and leases would be avoided, applying avoidance criteria for noise and tall structures.

Do not site wind energy development in opportunity areas within 5 miles from occupied GRSG leks that are in PHMA.

Outside of PHMA, discrete anthropogenic disturbances should not be authorized in areas that have been treated with the intent of improving or creating new GRSG habitat, unless the NEPA document associated with the action demonstrates it would have a neutral or beneficial effect on GRSG.

MA-GRSG-7

Adaptive Management

As described in **Section 2.7.1** this plan establishes soft and hard triggers for both GRSG populations and habitat. The specific triggers and additional detail on the management responses are identified in **Appendix B**.

If monitoring indicates the soft-trigger is met, the BLM will determine if there is a specific cause or causes that are contributing to the decline. If it is determined that the decline is related to a natural population variation, no specific management actions would be required. However, if BLM management actions are determined to cause or contribute to the decline, the BLM manager would apply measures within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures would apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats.

If monitoring indicates the hard trigger is met, a set of specific management actions from the BLM Proposed Plan will immediately be replaced with or adjusted by different management actions in the area where the trigger has been met. Table B.1 of **Appendix B** identifies the management actions from the BLM Proposed Plan, and the corresponding new management actions that will be immediately implemented to the specific area in the event a hard trigger is met. In addition to these specific changes, the BLM will review available and pertinent data for the area, in coordination GRSG biologists from multiple agencies including the UDWR, USFWS, and NRCS, to determine the causal factor(s) and implement a corrective strategy. The final strategy associated with a hard trigger being met would be the changes identified in Table B.1 of **Appendix B**, and could also include the need to further amend or revise the RMP to address the situation and modify management accordingly, for the area where the trigger was met.

Vegetation

Objective

Objective VEG-1

In all SFA and PHMA, 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).

Management Actions

MA-VEG-1

In PHMA, where necessary to meet GRSG habitat objectives, treat areas to maintain and expand healthy GRSG habitat (e.g., conifer encroachment areas, annual grasslands).

In PHMA, prioritize implementation of restoration/treatment projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG (e.g., proximity to existing GRSG populations, ecological site potential, resistance and resilience), documented in **Appendix K**.

In PHMA, prioritize restoration in seasonal habitats that are identified as the limiting factor for GRSG distribution and/or abundance.

Apply seasonal restrictions to avoid treating areas during seasons of use, as needed, when implementing vegetation treatments (see MA-GRSG-3G).

In PHMA, avoid sagebrush reduction treatments within GRSG nesting and winter habitat unless the project plan and associated NEPA document demonstrate a biological need for the treatment to maintain or improve habitat for the GRSG population. Coordinate with the State of Utah and USFWS prior to conducting sagebrush treatment projects within nesting and winter habitat.

Use collaborative planning efforts to develop and implement habitat restoration projects. Expertise and ideas from entities such as local landowners, local GRSG working groups, and other federal, state, county, and private organizations should be solicited and considered in development of restoration projects.

In PHMA, implement project design features that will contribute to the most favorable conditions for success when planning and implementing restoration/vegetation treatment projects. Examples include, but are not limited to the following:

- Review of available plant species and their adaptation to the site when developing seed mixes.
- The need to reduce non-native annual grass densities and competition through herbicide, targeted grazing, tillage, etc.
- Assessment of on-site vegetation to ascertain if enough desirable perennial vegetation exists to consider the use of passive restoration techniques.
- Use of site preparation techniques that retain existing desirable vegetation.
- Use of "mother plant" techniques or planting of satellite populations of desirable plants to serve as seed sources.
- The need for post-treatment control of non-native annual grass and other invasive species.

Upon completion of vegetation treatments, monitor and manage the project area to ensure long-term success, including persistence of seeded species and/or other treatment components, such as implementing maintenance treatments.

MA-VEG-2

Remove conifers encroaching into sagebrush habitats. When conducting conifer treatments:

- Prioritize treatments closest to occupied GRSG habitats and near occupied leks, and where juniper encroachment is phase I or phase II.
- Treat areas in late Phase II or Phase III condition to create movement corridors, connect habitats, or to break up continuous, hazardous fuels and reduce the potential for catastrophic fire.

- Prioritize methods to reduce conifer canopy cover to those that maintain the understory vegetation as the preferred treatment methods (e.g., mechanical, lop and scatter).
- Require that vegetation treatments conducted within 0.6 miles of a lek include an objective of reducing conifer, where technically feasible, to less than 5 percent canopy cover, with preference for complete removal.
- Include stipulations to avoid removing old-growth pinyon/juniper stands (e.g., Tausch et al. 2009; Miller et al. 1999).
- Use of site-specific analysis and tools like VDDT and the FIAT report (Chambers et al. 2014) will help refine the location for specific areas to be treated.

MA-VEG-3

In PHMA 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 complexes to maintain or increase amount of edge and cover within that edge.

MA-VEG-4

In PHMA, include GRSG habitat objectives in restoration/treatment projects. Treatment objectives should include short-term and long-term habitat conditions, and they should include specific objectives for the establishment of sagebrush cover and height, as well as cover and heights for understory perennial grasses and forbs necessary for GRSG seasonal habitats (see Objective-GRSG-3).

Make meeting the GRSG objectives for the restoration/treatment project one of the primary priorities for the project and subsequent land uses, recognizing that managing for other special status species may result in treatment objectives that may not meet GRSG seasonal habitat objectives (e.g., winter habitat cover requirements vs. creation of Utah prairie dog habitat). Where GRSG habitat overlaps with that of federally listed threatened or endangered species (e.g., Utah prairie dogs), coordinate with species-specific experts to develop conservation and recovery objectives and allow habitat treatments that will benefit both species.

MA-VEG-5

In PHMA, prioritize the use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used as long as they support GRSG habitat objectives. Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, should be the principle objective for rehabilitation efforts.

MA-VEG-6

In PHMA, design post restoration management to ensure long term persistence. This could include changes in livestock grazing management, wild horse and burro management and travel management, etc., to achieve and maintain the desired condition of the restoration effort that benefits GRSG, as well as monitoring and maintaining the treated area.

MA-VEG-7

In PHMA, limit commercial seed or live plant collection to levels that ensure long-term maintenance of the GRSG habitat objectives. Locations, species allowed for collection, and limits on the amounts to be collected will be developed on a case-by-case basis following environmental review of annual site-specific conditions. Commercial collection during sensitive seasonal periods (see MA-GRSG-3G) will include mitigation, developed to reflect the site-specific conditions on the ground, that could include, but is not necessarily limited to, restrictions on the timing and method of collection activities, limiting the number of individuals collecting, providing portions of collected seeds for use in local restoration projects, etc.

MA-VEG-8

In PHMA, allow for seed collection and use in restoration/reclamation activities. Prioritize use of seed from areas as close as possible to where the seed will be used to capture local adaptations.

MA-VEG-9
In PHMA, diversify the perennial grass and forb components through additional seeding in areas where historical seedings (e.g., crested wheatgrass) have been recolonized by sagebrush.

MA-VEG-10
Follow the applicable and technically feasible RDFs in **Appendix G** for vegetation projects/activities (fuels management) at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity;
- 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.

MA-VEG-11
In PHMA, design post Emergency Stabilization and Rehabilitation/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, etc., to achieve and maintain the desired condition of Emergency Stabilization and Rehabilitation projects to benefit GRSG (Eiswerth and Shonkwiler 2006).

Monitor and control invasive vegetation post-wildfire for at least 3 years.

MA-VEG-12
Integrated Invasive Species Management

In PHMA, integrated Vegetation Management would be used to control, suppress, and eradicate noxious and invasive species per BLM Handbook H-1740-2.

MA-VEG-13
In PHMA, treatments of Mormon cricket outbreaks would be collaborated with partners at the federal, state, and local levels to maintain and enhance GRSG habitats.

Fire Management

Management Actions
MA-FIRE-1
In collaboration with the USFWS and relevant state agencies, complete and maintain GRSG Landscape Wildland Fire 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. These assessments and subsequent assessment updates would also be a collaborative effort to take into account other GRSG priorities identified in this plan. **Appendix K** describes a minimal framework example and suggested approach for this assessment.

Implementation actions will be tiered to the local GRSG Landscape Wildland Fire and Invasive Species Assessment, using best available science related to the conservation of GRSG.

In collaboration with USFWS and relevant state agencies, BLM planning units would 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 would be coordinated across state/regional scales and across jurisdictional boundaries for long-term conservation of GRSG.

Annually complete a review of landscape assessment implementation efforts with appropriate USFWS and state agency personnel.

MA-FIRE-2

Fuels Management

Follow the applicable and technically feasible RDFs in **Appendix G** for fuels management at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity;
- 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.

MA-FIRE-3

In PHMA, fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, or protect GRSG habitat.

- In collaboration with USFWS and relevant state agencies, BLM planning units with large blocks of GRSG habitat will develop, using the assessment process described in **Appendix K**, 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 from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken.
- Use green strips and/or fuel breaks to protect GRSG habitat from fire events.
- When possible, locate fuel breaks along existing roads, ROWs, and other suitable topographic or natural features (e.g., areas devoid of vegetation, rock outcrops).
- Avoid constructing fuel breaks through large areas of intact GRSG habitat, unless the associated NEPA document demonstrates a biological need for the fuel break to maintain or protect habitat for the GRSG population. Coordinate with the State of Utah and USFWS prior to constructing fuel breaks within nesting and winter habitat.
- Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables.
- Remove encroaching conifer stands as a fuels management tool, where environmental review documents it would protect or improve GRSG habitat.
- Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success for native seed availability is low, desirable non-native seeds may be used to meet GRSG habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and desirable non-native species, as appropriate, to provide for fire breaks.
- Upon project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and/or other treatment components, such as implementing maintenance actions. Control invasive vegetation post-treatment.
- Apply seasonal restrictions, as needed, for implementing fuels management treatments according to the type of seasonal habitats present (see MA-GRSG-3G).

In PHMA, avoid sagebrush reduction fuels treatments within GRSG nesting and winter habitat unless the project plan and associated NEPA document demonstrate a biological need for the treatment to maintain or improve habitat for the GRSG population. Treatments in winter habitat should be designed to maintain sagebrush,

especially tall sagebrush (sagebrush capable of standing above heavier than normal snowfall), which would be available to GRSG above snow during a severe winter. Prior to conducting fuels treatments in winter habitat, coordinate with the State of Utah and USFWS to design the treatment to strategically reduce wildfire risk around or in the winter habitat.

MA-FIRE-4

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 options;
- 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.

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 PHMA (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).

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.

MA-FIRE-5

In PHMA, during fuels management project design, consider the use of targeted livestock grazing to strategically reduce fine fuels and, if used, implement grazing management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts on native perennial grasses.

MA-FIRE-6

Preparedness

Follow the applicable and technically feasible RDFs in **Appendix G** for fire and fuels management at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity;
- 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.

Implement a coordinated inter-agency approach to fire restrictions based upon National Fire Danger Rating System thresholds (fuel conditions, drought conditions and predicted weather patterns) for GRSG habitat.

Develop wildfire prevention plans that explain the resource value of GRSG habitat and include fire prevention messages and actions to reduce human-caused ignitions.

MA-FIRE-7

Fire Management – (Suppression)

Follow the applicable and technically feasible RDFs in **Appendix G** for fire and fuels management at the site-level unless at least one of the following can be demonstrated in the NEPA analyses associated with the project/activity:

- A RDF is documented to not be applicable to the site-specific conditions of the project/activity;
- 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.

MA-FIRE-8
Fire fighter and public safety are the highest priority. GRSG habitat in PHMA will be prioritized commensurate with property values and other critical habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for GRSG across the range of GRSG habitat consistent with LUP direction.

PHMA 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 Landscape Wildland Fire Invasive Species Habitat Assessments described in **Appendix K**.

In GHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.

MA-FIRE-9
Within acceptable risk levels use 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 LUP direction.

In PHMA, burnout operations areas should be avoided by constructing direct fire lines, whenever safe and practical to do so.

Livestock Grazing/Range Management

Management Actions
MA-GRA-1
PHMA and GHMA would be available for livestock grazing. Active animal unit months (AUMs) for livestock grazing would be 329,521 on BLM lands. Make adjustments to permitted AUMs consistent with regulation and the remaining grazing direction. In addition, on an annual basis livestock numbers and the season of use can be adjusted within the terms and conditions of the permit.

Make adjustments to permitted use and annual adjustments to levels of livestock use consistent with regulation and the direction identified below where livestock grazing is identified as a causal factor to not meeting standards or habitat objectives.

MA-GRA-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 SFA first followed by PHMA outside the SFA. 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 (ex., fire) and legal obligations.

MA-GRA-3
In PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for landscape level approaches to habitat improvement. Manage unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use as a single unit that will have the same management as the public lands.

MA-GRA-4
Evaluate Utah's Rangeland Health Standards and process grazing permits. Focus monitoring and management activities on allotments found not to be achieving Utah's Rangeland Health Standards where livestock grazing is identified as a causal factor and that have the best opportunities for conserving, enhancing or restoring habitat for GRSG.

Use ESDs and/or other appropriate information to determine the desired plant community within proper functioning ecological processes for conducting land health assessments to evaluate the achievement or non-achievement of rangeland health standards.

MA-GRA-5
In PHMA and GHMA, conduct land health assessments that include indicators and measurements of structure, condition, composition, etc., of vegetation specific to

achieving GRSG habitat objectives (Objective GRSG-3), including within wetlands and riparian areas. Prioritize land health assessments in SFA, followed by PHMA outside of the SFA. Conduct land health assessments at the watershed scale and use the GRSG habitat objectives when assessing the applicable standard in GRSG habitats.

MA-GRA-6

In PHMA, implement management actions (e.g., allotment management plans, term permit renewals, or other agreements) necessary to meet land health standards and to conserve, enhance or restore GRSG habitat through specific objectives (Objective GRSG-3). If an effective grazing system that meets specific GRSG habitat objectives is not already in place, consider singly, or in combination, changes in the following:

- Rotation systems (e.g., rest rotation, deferred rotation)
- Season or timing of use
- Distribution of livestock use;
- Intensity of use (e.g., objectives for utilization or stubble height)
- Type of livestock (e.g., cattle, sheep, horses, and goats), unless such a change conflicts with other species management
- Class of livestock (e.g., yearlings vs. cow-calf pairs)
- Duration of grazing use and rest periods
- Stocking rates

The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFA and PHMA will include specific management thresholds based on Table Objective GRSG-3, 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. Adjustments to meet seasonal GRSG habitat requirements could include those items identified in the list above.

MA-GRA-7

In PHMA, during drought periods, prioritize evaluating effects of the drought relative to GRSG needs for food and cover.

Initiate emergency management measures (e.g. delaying turnout, adjusting the amount and/or duration of livestock grazing, implement other terms of the permit) during times of drought to protect GRSG habitat, in accordance with IM-2013-094 (Resource Management During Drought), or other agency policies.

Implement post-drought management to allow for vegetation recovery that meets GRSG needs.

MA-GRA-8

In PHMA, manage riparian areas and wet meadows for proper functioning condition.

MA-GRA-9

In PHMA, assess livestock grazing in riparian and meadow complexes and ensure recovery or maintenance of appropriate vegetation and water quality. Where recovery or maintenance is not occurring and the causal factor is livestock grazing, reduce pressure on riparian or wet meadow vegetation used by GRSG in the summer by adjusting grazing management practices (e.g., use fencing/herding techniques, or changes in seasonal use or livestock distribution).

Allotments within SFA, followed by those within PHMA, 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.

MA-GRA-10

In PHMA, limit authorization of new water developments to projects that would have a neutral effect or be beneficial to GRSG habitat (such as by shifting livestock use away from critical areas). New developments that divert surface water must be designed to maintain riparian or wet meadow vegetation and hydrology to meet GRSG needs.

MA-GRA-11
In PHMA, evaluate existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and GRSG habitat. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to GRSG.

MA-GRA-12
In PHMA, ensure that vegetation treatments conserve, enhance or restore GRSG habitat (this includes treatments that benefit livestock).

MA-GRA-13
In PHMA, evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If existing seedings provide value in conserving or enhancing GRSG habitats, then no restoration would be necessary. Assess the compatibility of these seedings for GRSG habitat during the land health assessments.

MA-GRA-14
In PHMA, design new structural range improvements to have a neutral effect or conserve, enhance, or restore GRSG habitat through an improved grazing management system relative to GRSG objectives. Structural range improvements, in 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.

MA-GRA-15
In PHMA, evaluate existing structural range improvements to make sure they have a neutral effect or conserve, enhance or restore GRSG habitat.

MA-GRA-16
To reduce outright GRSG strikes and mortality, remove, modify or mark fences in high risk areas (Stevens et al. 2012) based on proximity to lek (e.g., within 1.2 miles of a lek), lek size, and topography, or as latest science indicates. Prioritize actions in SFA first, then PHMA.

Employ NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes").

MA-GRA-17
In PHMA, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range improvements.

MA-GRA-18
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 or fire breaks.

Wild Horses and Burros

Guidelines

MA-WHB-1
Manage herd management areas (HMAs) in GRSG habitat within established Appropriate Management Level (AML) ranges to achieve and maintain GRSG habitat objectives (Objective-GRSG-3).

MA-WHB-2
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 PHMA;
2. HMAs containing only GHMA;

3. HMAs containing sagebrush habitat outside of PHMA and GHMA mapped habitat; and
4. HMAs without GRSG habitat.

MA-WHB-3
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.

MA-WHB-4
In PHMA, 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 land health standards, even if current AML is not being exceeded.

MA-WHB-5
In PHMA, monitor the effects of WHB use in relation to GRSG seasonal habitat objectives on an annual basis to help determine future management actions.

MA-WHB-6
Develop or amend herd management plans to incorporate GRSG habitat objectives and management considerations for all HMAs within GRSG habitat, with an emphasis placed on PHMA.

MA-WHB-7
Consider removals or exclusion of wild horses/burros during or immediately following emergency situations (such as fire, floods, and drought) to facilitate meeting GRSG habitat objectives where HMAs overlap with GRSG habitat.

MA-WHB-8
When conducting NEPA analysis for wild horse/burro management activities, water developments, or other rangeland improvements for wild horses, address the direct and indirect effect on GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock.

MA-WHB-9
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 wild horse and burro program.

Lands and Realty

Management Actions
MA-LAR-1
In PHMA, manage lands ROWs, permits, and leases as follows (**Map 2.15**):

- Open: 18,900 acres (associated with designated above-ground ROW corridors)
- Avoided: 1,997,000 acres
- Excluded: 10,500 acres

MA-LAR-2
Linear and Site-Type ROWs, Permits, and Leases (excluding wind and solar)
PHMA would be avoidance areas for new linear and site type ROWs, permits, and leases except for within ROW corridors designated for aboveground use. Placement of new ROWs, permits, and leases in PHMA should be avoided if at all possible. Where avoidance is not possible in PHMA, placement of a new ROW/permit/lease could be allowed if it applies the management for discretionary activities in PHMA identified in MA-GRSG-3 (e.g., mitigation, disturbance cap, buffers, tall structure restrictions, seasonal restrictions, and applicable RDFs).

In PHMA, lands ROWs, permits and leases that cannot be avoided should be located in areas that minimize the effect on the GRSG population (e.g., non-habitat areas, least suitable habitat, collocated with existing disturbances).

In PHMA, new proposals for power lines, access roads, pump storage, and other hydroelectric facilities licensed by FERC would be subject to all GRSG ROW avoidance allocations and pertinent management for discretionary activities in MA-GRSG-3.

Outside PHMA, portions of opportunity areas within 4-miles of a lek that is located in PHMA would be avoidance areas for new ROWs, permits and leases, applying stipulations for noise and tall structures.

In addition to the above requirements, the subsequent conditions would apply to specific types of ROW authorizations:

Transmission Lines

PHMA are designated as avoidance areas for high voltage transmission line ROWs, except for the transmission projects specifically identified below. All authorizations in these areas, other than the excepted projects, must comply with the conservation measures outlined in this plan, including the RDFs and avoidance criteria presented in MA-GRSG-03. The BLM is currently processing an application for TransWest Express (including those portions of Energy Gateway South that are collocated) and the NEPA review for this project is well underway. The BLM is analyzing GRSG mitigation measures through the project's NEPA review process.

In PHMA, high voltage transmission lines (100 kV or greater) would be avoided if possible. If avoidance is not possible, they would be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on GRSG. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint.

In PHMA outside of designated corridors, new transmission lines must be buried where technically feasible. Where burying transmission lines is not technically feasible:

- new transmission lines must be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on GRSG; and
- would be subject to GRSG ROW avoidance criteria described above.

In PHMA, if an existing transmission line is being upgraded to a higher voltage transmission line outside an existing corridor:

- the existing transmission line must be removed within a reasonable amount of time after the new line is installed and energized; and
- the new line must be constructed in the same alignment as the existing line unless an alternate route would benefit GRSG or GRSG habitat.

In PHMA, where existing guy wires are determined to have a negative impact on GRSG or its habitat, they should be removed or appropriately marked with bird flight diverters to make them more visible to GRSG in flight.

Pipelines

In PHMA, major pipelines (greater than 24 inches) that cannot avoid PHMA would be placed in designated corridors where technically feasible. Where not technically feasible, pipelines should be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on GRSG.

Communication Sites

In PHMA, new communication towers that cannot avoid PHMA must be located, where technically feasible, within an existing communication site. New sites would be considered where necessary for public safety.

MA-LAR-3

Road ROWs

In PHMA, new road ROWs would be authorized when necessary for public safety, administrative access, or subject to valid existing rights. If the new ROW is necessary for public safety, administrative access, or subject to valid existing rights and creates new surface disturbance, then avoid, minimize, and compensate for the impacts.

In PHMA, limit route construction to realignments of existing ROWs if the realignment maintains or enhances GRSG habitat, eliminates the need to authorize a new ROW to construct a new road, or is necessary for public safety or public need.

In PHMA, subject to valid existing rights, new road ROWs/easements would be authorized only when necessary for public safety or administrative access or, if it would create no new or de minimis new surface disturbance.

In PHMA, collocate new ROWs as close as technically possible to existing ROWs or where it best minimizes GRSG impacts. Use existing roads, or realignments, 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.

In PHMA, existing Federal Highway Act Appropriation ROWs will be managed as valid existing rights, and new Federal Highway Act ROWs would continue to be considered and subject to all GRSG ROW plan restrictions.

MA-LAR-4

In PHMA, designate ROW corridors as identified on **Map 2.20**:

- Retain 17,600 acres of existing designated ROW corridor
- Retain 44,300 acres of existing designated ROW corridor, but stipulate new developments be limited to underground use only
- Undesignate 18,200 acres of existing designated ROW corridor

In PHMA, placement of new ROWs in corridors should be avoided if at all possible. Where avoidance is not possible:

- Allow new linear ROWs in designated corridors.
- New ROWs constructed in designated corridors will be constructed as close as technically feasible to existing linear ROW infrastructure to limit disturbance to the smallest footprint, unless using a different alignment better minimizes impacts on GRSG.
- Apply the pertinent management for discretionary activities in PHMA identified in MA-GRSG-3.

MA-LAR-5

In PHMA, when a ROW grant expires, is relinquished, or terminated, required rehabilitation as a term and condition of the FLPMA ROW grant, in compliance with 43 CFR 2805.12(i).

- the lease holder will be required to restore the site by removing overhead lines and other infrastructure, and;
- eliminate existing raven nesting opportunities created by anthropogenic development on public lands (e.g., remove power line and communication facilities no longer in service).

In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure. Where technically feasible, require ROW holders to bury or relocate existing power lines to minimize long-term impacts on GRSG habitat. Where the potential long-term impacts of relocating or burying the line would be greater than the existing impacts, do not pursue the mitigation. If relocation or burying is not feasible or would result in severe short-term or greater long-term impacts on GRSG habitat, incorporate additional terms and conditions in the ROW authorization for protection of GRSG habitat.

Work with ROW holders to retrofit existing towers with perch deterrents or other anti-perching devices, where appropriate, to limit GRSG predation.

MA-LAR-6

In PHMA, where existing leases or ROWs have had some level of development (road, fence, well, etc.) and are no longer in use, remove the features and restore the habitat.

MA-LAR-7

In GHMA, manage ROWs, permits, and leases as follows (**Map 2.15**):

- Open: 484,900 acres
- Avoided: 0 acres
- Excluded: 17,600 acres

New ROWs (including permits and leases) authorizations would be allowed if they apply the pertinent management for discretionary activities in GHMA identified in MA-GRSG-5.

MA-LAR-8

In GHMA, retain 74,700 acres of designated ROW corridors as identified on **Map 2.20**.

MA-LAR-9

Land Tenure

Lands classified as PHMA and GHMA 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 the 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.

MA-LAR-10

In PHMA, where suitable conservation actions cannot be achieved, seek to acquire state and private lands with intact federal mineral estate by donation, purchase or exchange in order to best conserve, enhance or restore GRSG habitat.

MA-LAR-11

Withdrawal

SFA would be recommended for withdrawal from the Mining Law of 1872 (as amended), subject to valid existing rights. Other federal lands or non-federal lands with federal mineral interests within PHMA or GHMA that are not already withdrawn or recommended for withdrawal would be available for locatable mineral entry.

MA-LAR-12

Wind Energy Development

PHMA would be designated as exclusion areas for wind energy development (2,026,400 acres) (**Map 2.31**).

Do not site wind energy development in opportunity areas within 5 miles from occupied GRSG leks that are in PHMA.

Manage wind energy development in GHMA as follows:

- Open – 484,900 acres
- Avoided – 0 acres
- Excluded – 17,600 acres

New wind ROW authorizations would be allowed in GHMA if they apply the pertinent management for discretionary activities identified in MA-GRSG-5.

MA-LAR-13

Solar Energy Development

As noted in **Chapter 1**, the BLM's Approved Resource Management Plan Amendments/ROD for Solar Energy Development in Six Southwestern States (October 2012) excluded all GRSG occupied habitat to new utility-scale solar development. Because the existing land use plans already exclude solar development in GRSG habitat; this plan amendment process does not need to make additional decisions related to solar development (**Map 2.32**).

Minerals

Management Action

MA-MIN-1

Allow exploration for all minerals (e.g., geophysical, trenching, drilling, etc.) within mapped occupied GRSG habitat areas that are not closed to leasing, permitting, etc., to obtain exploratory information. In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-GRSG-3) and GHMA (MA-GRSG-5).

Nonenergy Leasable Minerals

Management Actions

MA-MIN-2

In PHMA, manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests as follows (**Map 2.38**):

- Open to Leasing Consideration – 0 acres

- Closed to Leasing – 2,587,100 acres

In PHMA, close federal lands and non-federal lands with federal mineral interests to nonenergy leasable mineral leasing. However, expansion of existing operations could be considered if the new lease is contiguous with an existing operation and the new lease (construction, operation, or maintenance) applies the pertinent management for discretionary activities in PHMA identified in MA-GRSG-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).

MA-MIN-3

In GHMA, manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests as follows (**Map 2.38**):

- Open to Leasing Consideration – 619,500 acres
- Closed to Leasing – 27,600 acres

New leasing and development in GHMA would be considered if consistent with the pertinent management for discretionary activities described in MA-GRSG-5.

MA-MIN-4

In PHMA, exploration and prospecting activities associated with nonenergy leasable minerals would be required to comply with the same stipulations identified for leasing and development, above. In addition:

- The exploration/prospecting activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter) (MA-GRSG-3G);
- Facilities associated with exploration/prospecting activities will be removed before the next breeding season.
- Disturbances will be restored.

Coal

Management Actions

MA-MIN-5

Leases Associated with Surface Mining

At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

MA-MIN-6

Leases Associated with Underground Mining

Consider leasing PHMA for coal that would be extracted through underground mining. Require the following stipulations as part of any new lease or lease modification:

- In PHMA, appurtenant facilities would not be placed in GRSG habitat, where technically feasible.
- In PHMA, if placement of facilities outside of GRSG habitat is not technically feasible, disturbances associated with the lease (construction, operation, or maintenance) can be allowed if they are consistent with the pertinent management for discretionary activities identified in MA-GRSG-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, noise restrictions, seasonal restrictions, etc.).

If the above criteria cannot be met, do not grant new leases or modifications.

MA-MIN-7

New leasing for underground mining of coal in GHMA would be considered if consistent with the pertinent management for discretionary activities described in MA-GRSG-5.

MA-MIN-8

In PHMA, exploration activities needed to meet data adequacy standards associated with potential coal leasing would be required to comply with the pertinent management for discretionary activities identified in MA-GRSG-3 (e.g., mitigation, disturbance cap, buffers, noise restrictions, seasonal restrictions, etc.).

MA-MIN-9

For coal mining operations on existing leases:

Underground mining: In PHMA, unless required for technical or safety reasons, do not authorize new appurtenant surface facilities for existing underground mining. If new appurtenant surface facilities associated the existing mine leases cannot be located outside of PHMA, collocate them with any existing disturbed areas, if possible. If collocation is not possible, then construct new facilities to minimize disturbed areas while meeting mine safety standards/requirements, as identified by MSHA mine-plan approval process, and locate the facilities in an area least harmful to GRSG habitat based on vegetation, topography, or other habitat features.

MA-MIN-10

For coal mining operations on existing leases:

In GHMA, new disturbances could be considered if consistent with the pertinent management for discretionary activities described in MA-GRSG-5.

Locatable Minerals

Management Actions

MA-MIN-11

SFA would be recommended for withdrawal from the Mining Law of 1872 (as amended), subject to valid existing rights.

Other federal lands or non-federal lands with federal mineral interests within PHMA or GHMA that are not already withdrawn would be available for locatable mineral entry. Areas that are recommended for withdrawal would continue to be managed as they are currently managed.

In PHMA, to the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development and apply management to minimize and mitigate impacts. To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-GRSG-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-GRSG-5 (i.e., mitigation and buffers).

Regardless of whether agreements with the claimant incorporates the 3 percent disturbance cap (MA-GRSG-3B), disturbance from locatable mineral development would be included as disturbance when calculating disturbance for other land uses.

Mineral Materials

Management Actions

MA-MIN-12

In PHMA, manage mineral materials as follows (**Map 2.47**):

- open to mineral materials development: 0 acres
- closed to mineral materials development: 2,587,100 acres

MA-MIN-13

Close PHMA to new mineral material sales. However, these areas remain "open" to free use permits and the expansion of existing active pits, only if the following criteria are met at all phases of the development (construction and long-term operation of facilities):

- the activity is within the BSU and project area disturbance cap (MA-GRSG-3B);
- the activity is subject to the provisions set forth in the mitigation framework (MA-GRSG-3A);
- all applicable RDFs are applied (MA-GRSG-3I); and
- the activity applies the other pertinent management for discretionary activities in PHMA in MA-GRSG-3.

In GHMA, new mineral material developments could be considered if consistent with the pertinent management for discretionary activities described in MA-GRSG-5.

Fluid Minerals

Objectives

Objective MIN-1

Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing

development of fluid mineral resources, including geothermal, in PHMA and GHMA, and 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 USC 226(p) and 43 CFR 3162.3-1(h).

Objective MIN-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, minimize, and compensate for adverse impacts on 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 application for permit to drill (APD) for the lease to avoid, minimize, and compensate for impacts on GRSG or its habitat and will ensure that the best information about the GRSG and its habitat informs and helps to guide development of such federal leases.

Management Actions

MA-MIN-14

Manage fluid mineral leasing in PHMA as follows (**Map 2.53**):

- open to leasing, subject to standard stipulations: 0 acres
- open to leasing, subject to CSU and/or timing limitation (TL) stipulations: 0 acres
- open to leasing, subject to NSO stipulations: 2,516,200 acres
- closed to leasing: 70,900 acres

Unleased Federal Fluid Mineral Estate

Management Actions

MA-MIN-15

Unleased Areas within PHMA

PHMA would be designated as open to leasing fluid minerals, subject to NSO stipulations.

In SFA, there would be no waivers, exceptions, or modifications. In the remainder of PHMA, no waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The Authorized Officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action:

- Would not have direct, indirect, or cumulative effects on GRSG or its habitat; or,
- 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) PHMA 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 fluid mineral lease existing as of the date of this LUPA. 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.

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 publically available at least quarterly.

In addition, any lease activities would apply the pertinent management for discretionary activities in PHMA identified in MA-GRSG-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).

Outside PHMA, portions of opportunity areas within 4 miles of a lek that is located in PHMA would be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent GRSG use of PHMA).

MA-MIN-16

Unleased Areas within GHMA

Manage fluid mineral leasing in GHMA as follows (**Map 2.53**):

- open to leasing, subject to standard stipulations: 228,100 acres
- open to leasing, subject to CSU and/or TL stipulations: 279,100 acres
- open to leasing, subject to NSO stipulations: 22,500 acres
- closed to leasing: 27,800 acres
- planning decision not mapped: 89,600 acres

In GHMA, new development of fluid mineral leases could be considered if they apply the pertinent management for discretionary activities in GHMA identified in MA-GRSG-5.

Leased Federal Fluid Mineral Estate

Management Actions

MA-MIN-17

Apply the following conservation measures through implementation decisions (e.g., approval of an APD, geothermal drilling permit, Sundry Notice, Master Development Plans, etc.) and upon completion of the environmental record of review (43 CFR 3162.5). In this process, evaluate whether the conservation measures are "reasonable" (43 CFR 3101.1-2) with the valid existing rights.

MA-MIN-18

In PHMA, avoid, minimize, and compensate for impacts on GRSG and their habitat (e.g., habitat loss, fragmentation, indirect impacts, etc.) from new oil and gas development on existing leases.

Where possible, place development outside of PHMA. If it is determined that this restriction would render the recovery of fluid minerals infeasible or uneconomic, considering the lease as a whole, or where development of existing leases requires that disturbance density exceeds 1 per 640, and/or 3 percent disturbance cap, apply other measures to site proposed lease activities to meet GRSG habitat objectives and require mitigation as described in **Appendix D**. If the lease is entirely within PHMA, if feasible, apply the lek buffers from MA-GRSG-3H. If this is not technically feasible, locate infrastructure in areas that will minimize habitat loss. Require any development to be placed at the most distal part of the lease from the lek or in areas least harmful to GRSG populations and habitat (e.g., areas where local terrain features such as ridges and ravines may reduce habitat importance or shield nearby habitat from disruptive factors).

For geophysical exploration activities, include seasonal TLs and RDFs as permit COAs to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas.

MA-MIN-19

To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-GRSG-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-GRSG-5 (i.e., mitigation, buffers, and RDFs).

MA-MIN-20

In PHMA, operators must submit a master development plan with site-specific plans of development for roads, wells, pipelines and other infrastructure prior to any development being authorized. The BLM will evaluate the plan through the NEPA process.

MA-MIN-21

In PHMA, encourage 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.

MA-MIN-22

In PHMA, identify areas where acquisitions (including federal mineral rights) or conservation easements, would benefit GRSG habitat.

MA-MIN-23
In PHMA, require a full reclamation bond specific to the site in accordance with 43 CFR 3104.2, 3104.3, 3104.5, and 36 CFR 228.109. Insure bonds are sufficient for costs relative to reclamation 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 will perform the work.

Mineral Split Estate
Management Actions
MA-MIN-24
Where the federal government manages the mineral estate in PHMA and GHMA, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied 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.

Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA and GHMA, apply appropriate surface use COAs, stipulations, and mineral RDFs 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

Management Actions
MA-TTM-1
Manage OHV use in GRSG habitat as follows (**Map 2.59**):

- Open to cross-country use: 525 acres (one area each in Parker Mountain and Uintah Population Areas)
- Limited to existing routes: 1,274,700 acres
- Limited to designated routes: 1,220,500 acres
- Closed: 33,200 acres

MA-TTM-2
PHMA and GHMA that do not have designated routes in a Travel Management Plan would be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use).

OHV Areas designated as "closed" would be managed as areas closed to motorized vehicles. OHV Areas designated as "limited existing" within PHMA would be managed as "limited to existing roads, primitive roads, and trails" until the completion of an implementation level travel plan. Individual route designations would occur during subsequent implementation level travel management planning efforts. Upon the completion of implementation level travel management plans OHV areas designated as "Limited" would automatically transition to "limited to designated roads, primitive roads and trails."

MA-TTM-3
Implementation level travel planning efforts would be guided by the goals, objectives and guidelines outlined in the GRSG section, relevant national and Utah specific guidance as well as the following:

- A timeline to complete travel planning efforts in would be identified, prioritized and updated annually in all relevant planning areas to accelerate the accomplishment of: data collection, route evaluation and selection, and on the ground implementation efforts including signing, monitoring and rehabilitation.
- During subsequent travel management planning, consultation "with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration." Consequently, a public outreach plan to fully engage all interested stakeholders will be incorporated into future travel management plans.
- Among other designation criteria from 43 CFR 8342.1(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."

- During subsequent travel management planning, all routes would undergo a route evaluation to determine its purpose and need and the potential resource and/or user conflicts from motorized travel. Where resource and/or user conflicts outweigh the purpose and need for the route, the route would be considered for closure or considered for relocation outside of sensitive GRSG habitat.
- During subsequent travel planning, threats to GRSG and their habitat would be considered when evaluating route designations and/or closures.
- During subsequent travel management planning, routes that do not have a purpose or need would be considered for closure.
- During subsequent travel management planning, routes that are duplicative, parallel, or redundant would be considered for closure.
- During subsequent travel management planning, seasonal restrictions on OHV use would be considered in important seasonal habitats where OHV use is a threat. During subsequent travel management planning, consider limiting over snow vehicles designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow to designated routes or consider seasonal closures in GRSG wintering areas from November 1 through March 31.
- During subsequent travel management planning, routes not required for public access or recreation with a current administrative/agency purpose or need would be evaluated for administrative access only.
- During subsequent travel management planning, consider prioritizing restoration of routes not designated in a Travel Management Plan.
- During subsequent travel management plan implementation, consider using seed mixes or transplant techniques that will maintain or enhance GRSG habitat when rehabilitating linear disturbances.
- During subsequent travel management plan implementation, consider scheduling road maintenance to avoid disturbance during sensitive periods and times to the extent practicable. Consider using time of day limits (e.g., no use between 6:00 pm and 9:00 am) to reduce impacts on GRSG during breeding periods.

MA-TTM-4

In PHMA, complete transportation plans in accordance with National BLM Travel Management guidance, requiring the BLM to maintain a current action plan and planning schedule to most effectively target available resources. The following GRSG population areas are Utah's top priority areas to designate comprehensive travel plans:

- Sheeprocks
- Bald Hills
- Box Elder
- Rich
- Ibapah
- Hamlin Valley

MA-TTM-5

In PHMA, travel systems would be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on GRSG, maintain motorist safety, and prevent unauthorized cross country travel while meeting access needs. To do so, it may be necessary to improve portions of existing routes, close existing routes or create new routes that meet user group needs, thereby reducing the potential for pioneering unauthorized routes. The emphasis of the comprehensive travel and transportation planning would be placed on having a neutral or positive effect on GRSG habitat.

MA-TTM-6
In PHMA, when considering upgrade of existing routes that would change route category (BLM route categories: road, primitive road, or trail) or capacity, consider the larger transportation network while providing for protection of GRSG habitat.

MA-TTM-7
In PHMA, 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 total disturbance. Apply additional effective mitigation necessary to offset the resulting loss of GRSG habitat. Plan for new routes in consideration of the larger transportation network objectives and needs while providing for protection of GRSG habitat.

MA-TTM-8
In PHMA, when reseeding roads, primitive roads and trails, use appropriate seed mixes and consider the use of transplanted sagebrush.

MA-TTM-9
Develop an educational process to advise OHV users of the potential for conflict with GRSG.

MA-TTM-10
In PHMA and GHMA, 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); 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 OHVs 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

Management Actions

MA-REC-1
In PHMA, only allow BLM special recreation permits (SRPs) that have neutral or beneficial effect on GRSG and their habitat. Evaluate existing SRPs for adverse effect on GRSG and their habitat. Modify or cancel the permit, as appropriate and where possible to avoid or mitigate effects of habitat alterations or other physical disturbances to GRSG (e.g., breeding, brood-rearing, migration patterns, or winter survival).

Identify permit stipulations that require the permittee to implement any necessary habitat restoration activities after SRP events. Restoration activities must be consistent with GRSG habitat objectives.

MA-REC-2
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 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.

Areas of Critical Environmental Concern (ACEC)

No additional ACECs are designated.

2.6.3 Forest Service Proposed Plan Amendment – Utah Portions of the Planning Area

On April 9, 2012, the USDA adopted final planning regulations for the National Forest System at 36 CFR part 219. The regulations, known collectively as the 2012 Planning Rule, provide broad programmatic direction in developing and carrying out land management planning and set out requirements for plan components (36 CFR 219.7(e)) and other content in land management plans. Forest Service Handbook (FSH) 1909.12 provides procedural guidance for implementing land management planning direction for the 2012 Planning Rule. Every Forest Service plan must include the following components[1]:

- *Desired condition*: 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 decisionmaking 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 decisionmaking, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

[1] 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.

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

The Forest Service has developed two Proposed Plans to be applied in the Utah Sub-region. This Proposed Plan applies to the National Forest System lands within the boundaries of the State of Utah: Uinta-Wasatch-Cache National Forest, Ashley National Forest, Manti-La Sal National Forest, Fishlake National Forest, and Dixie National Forest.

Greater Sage-Grouse (General)
Adaptive Management
Fire Management
Greater Sage-Grouse Habitat
Livestock Grazing
Lands and Realty
Special Use Authorizations (non-recreation)
Land Ownership Adjustments
Land Withdrawal
Wind and Solar
Minerals
Coal Mines - Unleased
Coal Mines - Leased
Fluid Minerals – Unleased
Fluid Minerals – Leased
Fluid Minerals – Operations
Locatable Minerals
Mineral Materials
Nonenergy Leasable Minerals
Recreation
Roads and Transportation

General Greater Sage-Grouse

Desired Conditions

GRSG-GEN-DC-001

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

Anthropogenic disturbance is focused in non-habitat areas outside of PHMA, SFA, and GHMA[2]. Disturbance in general management areas is limited, and there is little to no disturbance in PHMA and SFA except for valid existing rights and existing authorized uses.

GRSG-GEN-DC-003

In GRSG seasonal habitats, including all seasonal habitats, 70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover and less than 10 percent 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 GRSG based on seasonal habitat requirements are in Table GRSG-GEN-DC-003, Seasonal Habitat Desired Conditions for Greater Sage-Grouse.

Table GRSG-GEN-DC-003
Seasonal Habitat Desired Conditions for Greater Sage-Grouse

ATTRIBUTE	INDICATORS	DESIRED CONDTION
BREEDING AND NESTING[1,2,3] (Seasonal Use Period March 1-June 15) Apply 4 miles from active leks. [4]		
Lek Security	Proximity of trees[5]	Trees or other tall structures are absent to uncommon within 1.86 miles of leks[6, 7]
	Proximity of sagebrush to leks[6]	Adjacent protective sagebrush cover within 328 feet of lek[6]

[2] PHMA and GHMA 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 SFA including nonhabitat.

Table GRSG-GEN-DC-003
Seasonal Habitat Desired Conditions for Greater Sage-Grouse

ATTRIBUTE	INDICATORS	DESIRED CONDTION
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 to 25%
	Sagebrush height[7] Arid sites[6,7,9] Mesic sites[6,7,10]	 12 to 32 inches 16 to 32 inches
	Predominant sagebrush shape[6]	>50% in spreading[11]
	Perennial grass canopy 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 June 16-October 31)		
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 to 32 inches
	Perennial grass canopy cover and forbs[7,8]	>15%
	Riparian areas/mesic meadows	Proper Functioning Condition[12]
	Upland and riparian perennial forb availability[6,7]	Preferred forbs are common with several preferred species present[13]
WINTER[1] (Seasonal Use Period November 1-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 M. J., and S. H. Anderson. 2005. *Spatial Distribution of Greater Sage-grouse nests in relatively contiguous sagebrush habitats*. Condor 107:742-752.

Table GRSG-GEN-DC-003
Seasonal Habitat Desired Conditions for Greater Sage-Grouse

ATTRIBUTE	INDICATORS	DESIRED CONDTION

[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. 2015. In Press. Sage-Grouse Habitat Assessment Framework: A Multi-scale Habitat Assessment Tool. Bureau of Land Management and Western Association of Fish and Wildlife Agencies Technical Reference 6710-1. US Bureau of Land Management, Denver, Colorado.
[7] Connelly, J. M. A. Schroeder, 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. W., K. P. Reese, and M. A. Schroeder. 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 subspecies for this type site (Stiver et al. 2015 *In Press*).
[10] ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush subspecies for this type site (Stiver et al. 2015 *In Press*).
[11] Sagebrush plants with a spreading shape provide more protective cover than sagebrush plants that are more tree- or columnar shaped (Stiver et al. 2015 *In Press*).
[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 GRSG habitat requirements.
[13] Preferred forbs are listed in Table III-2 of the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2015 *In Press*). 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 of the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2015 *In Press*).
[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.

Standards

GRSG-GEN-ST-004

In PHMA, SFA, and Anthro Mountain, do not issue new discretionary written authorizations unless all existing discrete anthropogenic disturbances cover less than 3 percent of the total GRSG habitat within the BSU and the proposed project area, regardless of ownership, and the new use will not cause exceedance of the 3 percent cap (**Appendix E**).

GRSG-GEN-ST-005

In PHMA, SFA, GHMA, and Anthro Mountain, 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, 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 Regional Mitigation Strategy (**Appendix D**).

GRSG-GEN-ST-006

During lekking (March 1 to April 30) restrict surface disturbing and disruptive activities, including noise at 10 decibels above ambient (not to exceed 20-24 decibels) measured at the perimeter of an occupied lek, to lekking birds from 6:00 pm to 9:00 am within a buffer distance[3] of 3.1 miles.

Guidelines

GRSG-GEN-GL-007

During breeding and nesting (March 1 to June 15), surface disturbing and disruptive activities to nesting birds should be avoided.

GRSG-GEN-GL-008

When breeding and nesting habitat overlaps with other seasonal habitats, habitat should be managed for breeding and nesting desired conditions in Table GRSG-GEN-DC-003.

GRSG-GEN-GL-009

Development of tall structures within 2 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.

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

Adaptive Management

Standards

GRSG-AM-ST-010

If a hard trigger is met, immediate action is necessary to stop a severe deviation from GRSG conservation objectives. The larger deviation from natural variation associated with a hard trigger would correspond with a greater change in management. Upon reaching a hard trigger, an appropriate component of a more restrictive alternative analyzed in the EIS will be implemented without further action by the Forest Service. The Forest Service will review available and pertinent data, in coordination with GRSG biologists from multiple agencies. (**Appendix B**).

GRSG-AM-ST-011

If a soft trigger is met, the Forest Service will determine the specific cause or causes that are contributing to the decline. In completing this evaluation, the Forest Service will coordinate with GRSG biologists from multiple agencies. If it is determined that the decline is related to a natural variation in the population, no specific management actions would be required. However, if Forest Service management actions are determined to be the cause or contribute to the decline, the Forest Service would apply measures within their implementation-level discretion to mitigate the decline of populations and/or habitat. These measures would apply more conservative or restrictive implementation-level conservation conditions, terms, or decisions within the agency's discretion to mitigate the decline (**Appendix B**).

Lands and Realty

Special Use Authorizations (non-recreation)

Objectives

GRSG-LR-SUA-O-012

In brood rearing and nesting habitats, retrofit existing tall structures (e.g., power poles, and cellular towers) with perch deterrents or other anti-perching devices within 2 years of signing the ROD.

Standards

GRSG-LR-SUA-ST-013

In PHMA, SFA, and Anthro Mountain, restrict issuance of new lands special use authorizations (SUAs) 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-014

In GHMA, new lands SUAs may be issued for infrastructure, such as high-voltage transmission lines, major pipelines, hydropower, distribution lines, and cellular towers, if they can be located within existing designated corridors or ROWs and the authorization includes stipulations to protect GRSG and their habitats. Existing authorized uses will continue to be recognized.

GRSG-LR-SUA-ST-015

In PHMA, SFA, GHMA, and Anthro Mountain, 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 GRSG or their habitats.

GRSG-LR-SUA-ST-016

In PHMA, SFA, GHMA, and Anthro Mountain, require protective stipulations (e.g., noise, tall structure, guy wire removal, perch deterrent installation) when issuing new authorizations or during renewal, amendment, or reissuance of existing authorizations that authorize infrastructure (e.g., high-voltage transmission lines, major pipelines, roads, distribution lines, and cellular towers).

GRSG-LR-SUA-ST-017

In PHMA, SFA, GHMA, and Anthro Mountain, locate upgrades to existing transmission lines within the existing designated corridors or ROWs unless an alternate route would benefit GRSG or their habitats.

GRSG-LR-SUA-ST-018
In PHMA, SFA, GHMA, and Anthro Mountain, when a lands SUA 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-019
In PHMA, SFA, GHMA, and Anthro Mountain, if the potential long-term (i.e., 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 SUA, 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 SUA for protection of GRSG or their habitats.

GRSG-LR-SUA-ST-020
In PHMA, SFA, GHMA, and Anthro Mountain, collocate new infrastructure (e.g., high-voltage transmission lines, major pipelines, roads, distribution lines, and cellular towers) with existing infrastructure to limit disturbance to the smallest footprint, or where it best limits impacts to GRSG or their habitats. If collocation 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.

Guideline
GRSG-LR-SUA-GL-021
In PHMA, SFA, and Anthro Mountain, outside of existing designated corridors and ROWs, 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 are being avoided. When new transmission lines and pipelines are not buried, locate them adjacent to existing transmission lines and pipelines.

Land Ownership Adjustments
Standard
GRSG-LR-LOA-ST-022
In PHMA, SFA, GHMA, and Anthro Mountain, 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.

Guideline
GRSG-LR-LOA-GL-023
In PHMA, SFA, and GHMA with minority federal ownership, and Anthro Mountain, consider landownership adjustments to achieve a landownership pattern (e.g., consolidation, reducing fragmentation) that supports improved GRSG population trends and habitats.

Land Withdrawal
Guideline
GRSG-LR-LW-GL-024
In PHMA, SFA, and Anthro Mountain, use land withdrawals as a tool, where appropriate, to prevent activities that will be detrimental to GRSG or their habitats.

Wind and Solar
Standards
GRSG-WS-ST-025
In PHMA, SFA, GHMA, and Anthro Mountain, do 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 site).

GRSG-WS-ST-026
In PHMA, SFA, GHMA, and Anthro Mountain, do not authorize new wind utility-scale and/or commercial energy development except for on-site power generation associated with existing industrial infrastructure (e.g., mine site).

Greater Sage-Grouse Habitat

Objective

GRSG-GRSGH-O-027

Every 10 years for the next 50 years, improve GRSG habitat by removing invading conifers and other undesirable species based upon the number of acres shown in Table GRSG-GRSGH-O-027, Treatment Acres per Decade.

Table GRSG-GRSGH-O-027

Treatment Acres per Decade[1]

Forest	MECHANICAL[2]	PRESCRIBED FIRE[3]	GRASS RESTORATION[4]
Ashley	10,000	0	2,000
Dixie	13,000	1,000	7,000
Fishlake	7,000	0	1,000
Manti-La Sal	3,000	0	4,000
Uinta-Wasatch-Cache	9,000	0	0

[1] These are estimates of treatments required to achieve and/or maintain desired habitat conditions over a period of 10 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 10-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 one 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

Standard

GRSG-GRSGH-ST-028

Design habitat restoration projects to move towards desired conditions (Table GRSG-GEN-DC-003) and incorporate the concepts outlined in **Appendix K**.

Guidelines

GRSG-GRSGH-GL-029

Sagebrush removal in GRSG breeding and nesting and wintering habitats should be avoided unless necessary to support attainment of desired habitat conditions (Table GRSG-GEN-DC-003).

GRSG-GRSGH-GL-030

When removing conifers that are encroaching into GRSG habitat, avoid persistent woodlands (i.e., old growth relative to the site or more than 100 years old).

GRSG-GRSGH-GL-031

In PHMA, SFA, GHMA, and Anthro Mountain, actions and authorizations should include design features to limit the spread and effect of undesirable nonnative plant species.

GRSG-GRSGH-GL-032

To facilitate safe and effective fire management actions, in PHMA, SFA, GHMA, and Anthro Mountain, fuels 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 GRSG-GEN-DC-003) should be designed to reduce the spread and/or intensity of wildfire or the susceptibility of GRSG values to move away from desired conditions (GRSG-GEN-DC-003).

GRSG-GRSGH-GL-033

In PHMA, SFA, GHMA, and Anthro Mountain, native plant species should be used, when possible, to restore, enhance, or maintain desired habitat conditions (Table GRSG-GEN-DC-003).

GRSG-GRSGH-GL-034

In PHMA, SFA, and Anthro Mountain, vegetation treatment projects should only be conducted if they restore, enhance, or maintain desired conditions. (Table GRSG-GEN-DC-003).

Livestock Grazing

Desired Condition

GRSG-LG-DC-035

In PHMA, SFA, GHMA, and Anthro Mountain, livestock grazing is managed to ensure adequate nesting cover and does not conflict with attainment of other vegetation attributes (Table GRSG-GEN-DC-003).

Standard

GRSG-LG-ST-036

In PHMA, SFA, and Anthro Mountain, do not approve construction of water developments unless beneficial to GRSG habitat.

Guidelines

GRSG-LG-GL-037

Grazing guidelines should be applied in each of the seasonal habitats in Table GRSG-LG-GL-037, Grazing Guidelines for Greater Sage-Grouse Seasonal Habitat. If values in Table GRSG-LG-GL-037 guidelines cannot be achieved based upon a site-specific analysis using ESDs, long-term ecological site capability analysis, or other similar analysis, adjust grazing management to move towards desired habitat conditions in Table GRSG-GEN-DC-003 consistent with the ecological site capability. Do not use drought and degraded habitat condition to adjust values. Grazing guidelines in Table GRSG-LG-GL-037 would not apply to isolated parcels of National Forest System lands that have less than 200 acres of GRSG habitat.

Table GRSG-LG-GL-037

Grazing Guidelines for Greater Sage-Grouse Seasonal Habitat

Seasonal Habitat	Grazing Guidelines
Breeding and nesting [1] within 4 miles of occupied leks	Perennial grass height:[2] When grazing occurs during breeding and nesting season (March 1 to June 15) manage for upland perennial grass height of 7 inches[3,4,5] When grazing occurs, post breeding and nesting season (June 16 to October 30) manage for 4 inches[4,5,6] of perennial grass height.
Brood rearing and summer[1]	Retain an average stubble height of 4 inches for herbaceous riparian/mesic meadow vegetation[7, 8]
Winter[1]	≤35% use of sagebrush utilization of sagebrush

[1] For descriptions of Seasonal Habitat and Seasonal Periods of GRSG see Table GRSG-GEN-DC-003.

Table GRSG-LG-GL-037

Grazing Guidelines for Greater Sage-Grouse Seasonal Habitat

[2] Grass heights only apply 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 of Wildlife Management 69: 639-649.
[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*. Wildlife Biology 13(1): 42-50.
[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)
[8] Stubble height to be measured in the meadow areas used by GRSG for brood-rearing (not on the hydric greenline).

GRSG-LG-GL-038

In PHMA, SFA, and Anthro Mountain, 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 GRSG-GEN-DC-003).

GRSG-LG-GL-039

Bedding sheep and placing camps within 1.2 miles from the perimeter of a lek during lekking (March 1 to April 30) should be restricted.

GRSG-LG-GL-040

During the breeding and nesting season (March 1 to June 15), 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 avoided.

GRSG-LG-GL-041

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-042
New permanent livestock facilities (e.g., windmills, water tanks, and corrals) should not be constructed within 1.2 miles from the perimeter of occupied leks.

Fire Management

Desired Condition
GRSG-FM-DC-043
In PHMA, SFA, GHMA, and Anthro Mountain, the extent and spread of wildfire resulting in loss of sagebrush is minimized, considering firefighter and public safety and other high priority values.

Standards
GRSG-FM-ST-044
In PHMA, SFA, GHMA, and Anthro Mountain, 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 GRSG-GEN-DC-003.

GRSG-FM-ST-045
In PHMA, SFA, GHMA, and Anthro Mountain, if it is necessary to use prescribed fire to facilitate site preparation for restoration of GRSG habitat consistent with desired conditions in Table GRSG-GEN-DC-003, 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.

Guidelines
GRSG-FM-GL-046
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-047
In PHMA, SFA, GHMA, and Anthro Mountain, 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 nonnative plants will not damage GRSG habitat in the long-term.

GRSG-FM-GL-048
In PHMA, SFA, GHMA, and Anthro Mountain, fuel treatments should be designed to restore, enhance, or maintain GRSG habitat.

GRSG-FM-GL-049
Locating temporary wildfire suppression facilities (e.g., incident command posts, spike camps, helibases, and mobile retardant plants) in PHMA, SFA, GHMA, and Anthro Mountain should be avoided.

GRSG-FM-GL-050
In PHMA, SFA, GHMA, and Anthro Mountain, 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-051
In PHMA, SFA, GHMA, and Anthro Mountain, 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-052
In PHMA, SFA, GHMA, and Anthro Mountain, 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-053
In PHMA, SFA, GHMA, and Anthro Mountain, roads and natural fuel breaks should be incorporated into fuel break design to improve effectiveness and minimize loss of existing sagebrush habitat.

GRSG-FM-GL-054
In PHMA, SFA, GHMA, and Anthro Mountain, 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-055
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-056
Localized maps of PHMA, SFA, GHMA and Anthro Mountain 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-057
In or near PHMA, SFA, GHMA, and Anthro Mountain, a GRSG resource advisor should be assigned to all extended attack fires.

GRSG-FM-GL-058
On critical fire weather days, protection of GRSG habitat should receive high consideration, along with other high values, when positioning resources.

GRSG-FM-GL-059
Line officers should be involved in setting pre-season wildfire response priorities and, during periods of multiple fires, prioritizing protection of PHMA, SFA, and GHMA.

GRSG-FM-GL-060
In PHMA, SFA, GHMA, and Anthro Mountain, consider using fire retardant and mechanized equipment only if it is likely to result in minimizing burned acreage.

GRSG-FM-GL-061
In PHMA, SFA, GHMA, and Anthro Mountain, 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.

Recreation

Desired Condition
GRSG-R-DC-062
In PHMA, SFA, and Anthro Mountain, recreation activities are balanced with the ability of the land to support them, while meeting GRSG seasonal habitat desired conditions (GRSG-GEN-DC-003) and creating minimal user conflicts.

Standard
GRSG-R-ST-063
In PHMA, SFA, GHMA, and Anthro Mountain, do not authorize temporary recreation uses (i.e., facilities or activities) that result in loss of habitat or would have long-term (greater than 5 years) negative impacts on GRSG or their habitats.

Guidelines
GRSG-R-GL-064
In PHMA, SFA, GHMA, and Anthro Mountain, terms and conditions that protect and/or restore GRSG habitat within the permit area should be included in new recreation SUAs. 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-065
In PHMA, SFA, and Anthro Mountain, new recreational facilities or expansion of existing recreational facilities (e.g., roads, trails, and campgrounds), including SUAs 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.

Roads and Transportation

Desired Condition

GRSG-RT-DC-066

In PHMA, SFA, GHMA, and Anthro Mountain, within the travel management system, GRSG experience minimal disturbance during breeding and nesting (March 1 to June 15) and wintering (November 1 to February 28) periods.

Standards

GRSG-RT-ST-067

In PHMA, SFA, GHMA, and Anthro Mountain, do not construct 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 compensate for the impacts.

GRSG-RT-ST-068

Do not conduct or allow road and trail maintenance activities within 2 miles from the perimeter of active leks during lekking (March 1 to April 30) from 6:00 pm – 9:00 am.

GRSG-RT-ST-069

In PHMA, SFA, and Anthro Mountain, prohibit public access on temporary energy development roads, unless consistent with all other terms and conditions included in the forest plan.

Guidelines

GRSG-RT-GL-070

In PHMA, SFA, and Anthro Mountain, new roads and road realignments should be designed and administered to reduce collisions with GRSG.

GRSG-RT-GL-071

In PHMA, SFA, and Anthro Mountain, 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-072

In PHMA, SFA, GHMA, and Anthro Mountain, when decommissioning roads and unauthorized routes, restoration activity should be designed to move habitat towards desired conditions (Table GRSG-GEN-DC-003).

GRSG-RT-GL-073

In PHMA, SFA, GHMA, and Anthro Mountain, dust abatement terms and conditions should be included in road use permits when dust has the potential to impact GRSG.

GRSG-RT-GL-074

In PHMA, SFA, GHMA, and Anthro Mountain, 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.

Minerals

Fluid Minerals – Unleased

Standards

GRSG-M-FMUL-ST-075

In PHMA and Anthro Mountain, 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 UDWR if:

- There would be no direct, indirect, or cumulative effects to GRSG or their habitats or

- Granting the exception provides an alternative to a similar action occurring on a nearby parcel and
- The exception provides a clear net conservation gain to GRSG.

GRSG-M-FMUL-ST-076
In SFA, there will be no surface occupancy and no waivers, exceptions, or modifications for fluid mineral leasing.

Fluid Minerals – Leased
Standards
GRSG-M-FML-ST-077
In PHMA, SFA, and Anthro Mountain, when approving the Surface Use Plan of Operation portion of the APD 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-078
In PHMA, SFA, and Anthro Mountain, 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 GRSG-GEN-DC-003.

GRSG-M-FML-ST-079
In general management areas, 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 GRSG and their habitats, consistent with the terms and conditions of the permit.

GRSG-M-FML-ST-080
Locate compressor stations on portions of a lease that are non-habitat and are not used by GRSG, and if there would be no direct, indirect, or cumulative effects on GRSG 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 Standard GRSG-GEN-ST-006.

GRSG-M-FML-ST-081
In PHMA, SFA, GHMA, and Anthro Mountain, 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-ST-082
Apply the following COAs on existing fluid mineral leases in Anthro Mountain:

- Use a phased approach for development in GRSG habitat.
- No well pads or permanent structures will be permitted within a 0.6 mile buffer of an occupied lek.
- Project-related activities and vehicle access will not be allowed in or through the 0.6 mile lek buffer.
- No project-related vehicles or activities (including routine maintenance, production vehicles, or work-over rigs) will be allowed from 1 hour before sunset to 2 hours after sunrise within mapped GRSG habitat from March 1 to May 31.
- No surface disturbing activities (including construction, drilling, and well-flaring) will be allowed for wells located within mapped GRSG habitat from March 1 through June 30.
- No well pad construction, road construction, drilling, or work-over rigs will be allowed on ridge tops from November 1 to March 1 within 4 miles of a lek.
- Within mapped GRSG habitat, disturbance will be limited to an average of one disturbance per square mile (640 acres). Disturbance should be clustered in areas of habitat most distal from leks or areas of habitat least important to GRSG.
- Disturbance within the mapped GRSG habitat on Anthro Mountain will be no more than 3 percent.

- Within 4 miles of a lek, well pads and roads should avoid openings in the pinyon/juniper tracts. If avoidance of an opening is not possible, then well pads and roads should be located as close to the edge of the opening as possible.
- Noise levels at leks must be limited to no more than 10 decibels above ambient (not to exceed 20-24 decibels), measured at the perimeter of a lek, during the breeding season (March 1 to May 31).
- Low profile tanks will be required for all well pads within mapped GRSG habitat.
- Raptor perch avoidance devices will be installed on any required tank batteries in GRSG habitat.
- Closed-loop drilling will be used for wells within GRSG habitat.
- If a new lek is discovered outside of mapped GRSG habitat, contiguous GRSG habitat within 4 miles of the lek will be mapped. Apply the same protections to the new mapped habitat and the new lek.

Guidelines

GRSG-M-FML-GL-083

In PHMA, SFA, GHMA, and Anthro Mountain, 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 APD, 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-084

On existing federal leases in PHMA, SFA, and Anthro Mountain 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 GRSG based on vegetation, topography, or other habitat features.

GRSG-M-FML-GL-085

In PHMA, SFA, GHMA, and Anthro Mountain, 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, COAs, conservation measures, and RDFs to the appropriate surface management instruments to the maximum extent permissible under existing authorities.

Fluid Minerals – Operations

Standards

GRSG-M-FMO-ST-086

In PHMA, SFA, and Anthro Mountain, do not authorize employee camps.

GRSG-M-FMO-ST-087

In PHMA, SFA, and Anthro Mountain, when feasible, do not locate tanks or other structures that may be used as raptor perches. If this is not feasible, use perch deterrents.

Guidelines

GRSG-M-FMO-GL-088

In PHMA, SFA, and Anthro Mountain, closed-loop systems should be used for drilling operations with no reserve pits, where feasible.

GRSG-M-FMO-GL-089

In PHMA, SFA, GHMA, and Anthro Mountain, 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-090

In PHMA, SFA, GHMA, and Anthro Mountain, dams, impoundments and ponds for mineral development should be constructed to reduce potential for West Nile virus. Examples of methods to accomplish this include:

- 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. Avoid flooding terrestrial vegetation in flat terrain or low-lying areas.
- Construct dams or impoundments that restrict down-slope 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 existing 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 re-inject produced water.
- Treat waters with larvicides to reduce mosquito production where water occurs on the surface.

GRSG-M-FMO-GL-091

In PHMA, SFA, GHMA, and Anthro Mountain, 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.

Coal Mines - Unleased

Standard

GRSG-M-CMUL-ST-092

In PHMA, SFA, and Anthro Mountain, do not authorize surface disturbances (e.g., appurtenant facilities) for new underground coal mines.

Coal Mines - Leased

Standard

GRSG-M-CML-ST-093

In PHMA, SFA, and Anthro Mountain, do not authorize new appurtenant surface facilities for existing underground mines unless no technically feasible alternative exists. If new appurtenant surface facilities associated with existing mine leases cannot be located outside of PHMA and SFA, collocate them with any existing disturbed areas, if possible. If collocation is not possible, then construct new facilities to minimize disturbed areas while meeting mine safety standards and requirements as identified by Mine Safety and Health Administration mine-plan approval process, and locate the facilities in an area least harmful to GRSG habitats based on vegetation, topography, or other habitat features.

Guideline

GRSG-M-CML-GL-094

In PHMA, SFA, GHMA, and Anthro Mountain, when coal leases are subject to readjustment, additional requirements should be included in the readjusted lease to conserve, enhance, and restore GRSG and their habitat for long-term viability.

Locatable Minerals

Standard

GRSG-M-LM-ST-095

In PHMA, SFA, and Anthro Mountain, only approve Plans of Operation if they include mitigation to protect GRSG and their habitats, consistent with the rights of the mining claimant as granted by the Mining Law of 1872, as amended.

Guidelines

GRSG-M-LM-GL-096

In PHMA, SFA, GHMA, and Anthro Mountain, to keep habitat disturbance at a minimum, a phased development approach should be applied to operations consistent with the rights granted under the Mining Law of 1872, as amended. Disturbed areas should be reclaimed as soon as they are no longer needed for mineral operations.

GRSG-M-LM-GL-097
In PHMA, SFA, GHMA, and Anthro Mountain, abandoned mine sites should be closed or mitigated, subject to valid or existing rights, to reduce predation of GRSG by eliminating tall structures that could provide nesting opportunities and perching sites for predators.

Nonenergy Leasable Minerals
Guideline
GRSG-M-NEL-GL-098
In PHMA, SFA, GHMA, and Anthro Mountain, 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-099
In PHMA, SFA, GHMA, and Anthro Mountain, the Forest Service should recommend to the BLM that expansion or readjustment of existing leases avoid, minimize, or mitigate the effect on GRSG and their habitat.

Mineral Materials
Standards
GRSG-M-MM-ST-100
In PHMA, SFA, and Anthro Mountain, do not authorize new mineral material disposal or development.

GRSG-M-MM-ST-101
In PHMA, SFA, and Anthro Mountain, 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 6:00 pm and 9:00 am within 2 miles from the perimeter of occupied leks, within the BSU and proposed project area, if doing does not exceed the disturbance cap.

GRSG-M-MM-ST-102
In PHMA, SFA, GHMA, and Anthro Mountain, 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 GRSG-GEN-DC-003).

2.6.4 Forest Service Proposed Plan Amendment – Wyoming Portions of the Planning Area

The Forest Service has developed two Proposed Plans to be applied in the Utah Sub-region. This plan applies to National Forest System lands in the Utah Sub-region that are located within the boundaries of the State of Wyoming: Uintah/Wasatch/Cache National Forest and Ashley National Forest. References to maps and appendices in this plan are found in the *Wyoming 9 Plan Greater Sage-Grouse RMP Amendment/EIS* (WY 9-Plan) available at www.blm.gov/wo/st/en/prog/more/sagegrouse/wyoming.html.

Forest Service Plan Components[4]

- *Desired condition*: 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 decisionmaking 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 decisionmaking, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

[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.

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

Greater Sage-Grouse Habitat

Timing, Distance, Density, and Disturbance

Fire Management

Infrastructure

Lands and Realty

Special Use Authorizations (non-recreation)

Land Ownership Adjustments

Land Withdrawal

Livestock Grazing

Minerals

Coal Mines

Fluid Minerals – Unleased

Fluid Minerals – Operations

Locatable Minerals

Mineral Materials

Nonenergy Leasable Minerals

Predators

Recreation

Roads and Transportation

Wind Energy Development

Greater Sage-Grouse Habitat

Desired Conditions

GRSG-GRSGH-DC-001

The landscape for GRSG encompasses large contiguous areas, 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, with 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-GRSGH-DC-002

In GRSG habitat management areas, including all seasonal habitats, 70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover and less than 10 percent 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 GRSG based on seasonal habitat requirements are displayed in Table GRSG-GRSGH-DC-002, Seasonal Habitat Desired Conditions for Greater Sage-Grouse.

Table GRSG-GRSGH-DC-002
Seasonal Habitat Desired Conditions for Greater Sage-Grouse

ATTRIBUTE	INDICATORS	DESIRED CONDITION
AREAS MANAGED FOR BREEDING AND NESTING[1,2,3] (Seasonal Use Period March 15-June 30) Apply 5.3 miles from occupied leks.[4]		
Lek Security	Proximity of trees[5]	Trees or other tall structures are none to uncommon within 1.86 miles of leks[6,7]
	Proximity of sagebrush to leks[6]	Adjacent protective sagebrush cover within 328 feet of lek[6]
Cover	Seasonal habitat extent[7]	>80% of the breeding and nesting habitat
	Sagebrush canopy cover [6,7,8]	15 to 25%
	Sagebrush height[7] Arid sites[7,9] Mesic sites[7,10]	4 to 32 inches in black sage and 12 to 32 inches in all other areas All Wyoming NFs and NG: 16 to 32 inches
	Predominant sagebrush shape[6]	>50% in spreading[11]
	Perennial grass canopy cover[6, 7] Arid sites[6,7,9] Mesic sites[6,7,10]	 ≥10% ≥15%
	Perennial grass height[6,7,8]	Provide overhead and lateral concealment from predators[6, 15]
	Perennial forb canopy cover[6,7,8] Arid sites[9] Mesic sites[10]	 ≥5%[6,7] ≥10%[6,7]
AREAS MANAGED FOR BROOD-REARING/SUMMER[1] (Seasonal Use Period July 1-November 30)		
Cover	Seasonal habitat extent[7]	>40% of the brood-rearing/summer habitat
	Sagebrush canopy cover[6,7,8]	10 to 25%
	Sagebrush height[7,8]	4 to 32 inches in black sage and 12 to 32 inches in all other areas
	Perennial grass canopy cover and forbs[7,8]	>15%

Table GRSG-GRSGH-DC-002
Seasonal Habitat Desired Conditions for Greater Sage-Grouse

ATTRIBUTE	INDICATORS	DESIRED CONDITION
	Riparian areas/mesic meadows	Proper Functioning Condition[12]
	Upland and riparian perennial forb availability[6,7]	Preferred forbs are common with several preferred species present[13]
WINTER[1] (Seasonal Use Period December 1-March 14)		
Cover and Food	Seasonal habitat extent[6,7,8]	>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, M. J., and S. H. 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 5.3 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. 2015. In Press. Sage-Grouse Habitat Assessment Framework: A Multi-scale Habitat Assessment Tool. Bureau of Land Management and Western Association of Fish and Wildlife Agencies Technical Reference 6710-1. US Bureau of Land Management, Denver, Colorado.
[7] Connelly, J., M. A. Schroeder, 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. Schroeder. 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 subspecies for this type site (Stiver et al. 2015 *In Press*).
[10] ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush subspecies for this type site (Stiver et al. 2015 *In Press*).
[11] Sagebrush plants with a spreading shape provide more protective cover than sagebrush plants that are more tree- or columnar shaped (Stiver et al. 2015 *In Press*).
[13] 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 GRSG habitat requirements.
[13] Preferred forbs are listed in Table III-2 of the Sage-Grouse Habitat Assessment Framework (Stiver et al. 2015 *In Press*). 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 of the Sage-Grouse Habitat Assessment Framework.
[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] Specific height requirements needed to meet the objective will be set at the time of watershed assessments.

Standards

GRSG-GRSGH-ST-003

Design habitat restoration projects to move towards the desired conditions displayed in Table GRSG-GRSGH-DC-002 and incorporate the concepts outlined in the Reclamation Plan and Monitoring Framework appendices of the WY-9 Plan.

GRSG-GRSGH-ST-004

When 1) annual lek counts, wing counts, aerial surveys, habitat monitoring or Density Disturbance Calculation Tool evaluations show deviation from normal annual fluctuations in GRSG habitat or populations for 2 consecutive years that may indicate a long-term downward trend; or 2) monitoring identifies other negative population or habitat anomalies for GRSG, conduct an evaluation to determine causal factors and develop an appropriate response strategy. This strategy may include curtailment of activities that may adversely affect GRSG populations or habitat.

GRSG-GRSGH-ST-005

Variability in: 1) number of active leks, 2) acres of available GRSG habitat, or 3) GRSG population trends based on lek counts can provide catastrophic indicators that GRSG is not responding to conservation measures set forth in the plan or that large scale negative impacts on GRSG populations or habitat are occurring. If two of the preceding three indicators exceed 60 percent of normal variability in a year or one of the preceding three indicators exceeds 40 percent of normal variability for 3 out of any 5 years, desired conservation results are not being attained and within 14 days the Adaptive Management Working Group (representatives from the BLM, Forest Service, USFWS, and State of Wyoming) will convene to develop an interim response strategy and initiate an assessment to determine the causal factors.

Guidelines

GRSG-GRSGH-GL-006

Sagebrush removal in PHMA and SFA and in wintering habitat should be restricted unless necessary to support attainment of desired habitat conditions displayed in Table GRSG-GRSGH-DC-002.

GRSG-GRSGH-GL-007

Within PHMA and SFA in northeast Wyoming, vegetation treatments in nesting and wintering habitat that would reduce sagebrush canopy to less than 15 percent should be restricted.

GRSG-GRSGH-GL-008

When removing conifers that are encroaching into GRSG habitat, avoid persistent woodlands (old growth relative to the site or more than 100 years old).

GRSG-GRSGH-GL-009

In PHMA, GHMA, and SFA, actions and authorizations should be designed to limit the spread and effect of undesirable nonnative plant species.

GRSG-GRSGH-GL-0010

To facilitate safe and effective fire management actions, in PHMA, GHMA, and SFA, fuels treatments should be designed to reduce the spread and intensity of wildfire in high-risk areas (i.e., areas of increased potential for ignition and in areas where there is a potential for wildfire that would be difficult for suppression resources to contain and control).

GRSG-GRSGH-GL-011

In PHMA, GHMA, and SFA, native plant species should be emphasized to restore, enhance, or maintain desired habitat conditions displayed in Table GRSG-GRSGH-DC-002.

GRSG-GRSGH-GL-012

When breeding and nesting habitat overlaps with other seasonal habitats, habitat should be managed for breeding and nesting desired habitat conditions displayed in Table GRSG-GRSGH-DC-002.

Timing, Distance, Density, and Disturbance

Standards

GRSG-TDDD-ST-013

In PHMA and SFA, do not authorize new surface occupancy or surface disturbing activities on or within a 0.6-mile radius of the perimeter of occupied leks that are located in PHMA and SFA.

GRSG-TDDD-ST-014

In GHMA, do not authorize new surface occupancy or surface disturbing activities on or within a 0.25-mile radius of the perimeter of occupied leks.

GRSG-TDDD-ST-015

During lekking (March 1 to May 15), restrict noise to 10 decibels above ambient (not to exceed 20-24 decibels) measured at the perimeter of an occupied lek to lekking birds from 6:00 pm to 9:00 am within a buffer distance[5] of 3.1 miles.

GRSG-TDDD-ST-016

In-kind mitigation is preferred to out-of-kind mitigation. Where in-kind mitigation provides a net conservation gain to GRSG, or where other habitat types are most limiting to populations, focus mitigation on habitats that provide the greatest benefit to the species. When approving mitigation requests, use the following hierarchy:

1. Onsite (on lease).
2. Offsite within the project's DDCT analysis area.
3. Offsite within the same priority or sagebrush focal area boundary.
4. Adjacent to the affected priority management areas or sagebrush focal area within the general habitat management area boundary.
5. Offsite within the same 2006 WAFWA Strategy determined Management Zone as the impact.
6. Other areas as identified by the local unit.

Guidelines

GRSG-TDDD-GL-017[6]

In PHMA core and SFA, do not authorize new surface disturbing or disruptive activities from March 15 through June 30. Activities that meet the exception, waiver, and modification criteria may be authorized. Where credible data, based upon field analysis, support different timeframes for the seasonal restriction, dates may be shifted by up to 14 days before or subsequent to the above dates.

GRSG-TDDD-GL-018[6]

Within PHMA connectivity, do not authorize new surface disturbing or disruptive activities from March 15 through June 30 within 4 miles of a lek or lek perimeter of any occupied lek within identified PHMA-connectivity areas. Activities that meet the exception, waiver, and modification criteria may be authorized. Where credible data, based upon field analysis, support different timeframes for this seasonal restriction, dates may be shifted by 14 days before or subsequent to the above dates.

GRSG-TDDD-GL-019[6]

In GHMA, do not authorize new surface disturbing or disruptive activities from March 15 to June 30 within 2 miles of the lek or lek perimeter of any occupied lek located inside general areas. Activities that meet the exception, waiver, and modification criteria may be authorized. Where credible data, based upon field analysis, support different timeframes for this restriction, dates may be shifted by 14 days before or subsequent to the above dates.

GRSG-TDDD-GL-020[6]

Within mapped winter concentration areas in PHMA core and SFA, do not authorize new surface disturbing or disruptive activities from December 1 through March 14 to protect PHMA-core and SFA GRSG populations that use these winter

[5] 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: US Geological Survey Open-File Report 2014–1239, 14 p., http://dx.doi.org/10.3133/ofr20141239.

[6] On a case-by-case basis, and only when it can be demonstrated that the activity will not cause declines in greater sage-grouse populations, allow exceptions, modifications, and waivers. The authorized officer may grant an exception if a review determines that the action, as proposed or conditioned, would not impair the function or utility of the site for the current or subsequent seasonal habitat, life-history, or behavioral needs of greater sage-grouse.

concentration habitats. Activities not located in suitable habitat that meet the exception, waiver, and modification criteria may be authorized.

GRSG-TDDD-GL-021[6]
Within mapped winter concentration areas in PHMA-connectivity and GHMA, do not authorize new surface disturbing or disruptive activities from December 1 through March 14 where winter concentration areas are identified as supporting populations of GRSG that attend leks within PHMA-core habitat management areas and SFA.

GRSG-TDDD-GL-022[6]
In PHMA-core habitat management areas and SFA, limit the density of activities related to oil and gas development or mining activities to no more than an average of 1 pad or mining location per 640 acres, using the current Density Disturbance Calculation Tool process described in the WY-9 Plan appendix, or its replacement, subject to valid existing rights.

GRSG-TDDD-GL-023[6]
In PHMA and SFA, do not permit surface disturbance and disruptive activities unless all existing discrete anthropogenic disturbances cover less than 5 percent of the suitable habitat in the surrounding area using the current Density Disturbance Calculation Tool process described in the WY-9 Plan appendix, or its replacement. An exception to this standard is described in the Locatable Minerals section in GRSG-M-LM-ST-002-Standard.

Infrastructure

Guidelines
GRSG-INFRA-GL-024
In PHMA and SFA, impacts on GRSG and their habitats should be reduced during maintenance, replacement, and upgrades of existing structures. Impacts should also be mitigated when constructing new infrastructure.

- Existing guy wires should be removed or appropriately marked with bird flight diverters to make them more visible to GRSG in flight. Authorization of new infrastructure with guy wires should be restricted.
- Power lines (distribution and transmission) should be designed to minimize wildlife related impacts and constructed to the latest APLIC standards.
- When possible, perch deterrents should be installed on existing and new overhead facilities. Tanks and other above ground facilities should be equipped with structures or devices that discourage nesting and perching of raptors and corvids.
- Permanent structures should be designed or sited to minimize impacts on GRSG, with emphasis on locating and operating facilities that create movement (e.g., pump jacks) or attract frequent human use and vehicular traffic (e.g., fluid storage tanks) in a manner that will minimize disturbance of GRSG or interference with habitat use.
- Liquid gathering facilities should be placed outside PHMA and SFA. To reduce truck traffic and perching and nesting of ravens and raptors, tanks should not be placed at well locations.

Lands and Realty

Special Use Authorizations (non-recreation)
Standards
GRSG-LR-SUA-ST-025
In PHMA and SFA, restrict issuance of new SUAs for infrastructure, such as high-voltage transmission lines, major pipelines hydropower, distribution lines, and cellular towers (see Map 2-13 in the WY 9-Plan). Exceptions must be limited and based on rationale (e.g., monitoring, modeling, or best available science) that explicitly demonstrates that adverse impacts on GRSG will be avoided with the exception.

GRSG-LR-SUA-ST-026
In PHMA, GHMA, and SFA, do not authorize temporary lands special use permits (SUPs; 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 GRSG or their habitats.

GRSG-LR-SUA-ST-027
In PHMA, GHMA, and SFA, when a lands SUA is revoked or terminated and no future use is contemplated, the authorization holder must remove overhead lines and other infrastructure in compliance with 36 CFR 251.60(i).

GRSG-LR-SUA-ST-028
In PHMA and SFA, new power transmission projects must be located within the 2-mile wide transmission line route in south-central and southwestern Wyoming (see Map 2-15 in WY 9-Plan) or as close as technically feasible (within 0.5 mile) on either side of existing 115 kV or larger transmission lines or corridors (creating a route no wider than 1 mile). These projects will not be counted against the 5 percent disturbance cap (Wyoming Density and Disturbance Calculation Tool Manual).

GRSG-LR-SUA-ST-029
In PHMA and SFA, new power distribution lines must not be located within 0.6 miles from the perimeter of occupied GRSG leks. Effective mitigation to protect GRSG is required. See Standards and Guidelines in the Timing, Distance, Density, and Disturbance section and see GRSG-INFRA-GL-001-Guideline.

GRSG-LR-SUA-ST-030
In PHMA, GHMA, and SFA, locate upgrades to existing transmission lines within the existing designated corridors unless an alternate route would benefit GRSG or their habitats.

Guidelines
GRSG-LR-SUA-GL-031
Authorization of new temporary MET towers should be restricted in PHMA and SFA within 2 miles of occupied GRSG leks, unless they are out of direct line of sight of an occupied lek.

GRSG-LR-SUA-GL-032
In PHMA and SFA, outside of existing designated corridors, new transmission lines and pipelines should be buried to limit disturbance to the smallest footprint unless explicit rationale is provided that the biological impacts on GRSG are being avoided. When new transmission lines and pipelines are not buried, locate them adjacent to existing transmission lines and pipelines.

Land Ownership Adjustments
Standard
GRSG-LR-LOA-ST-033
In PHMA and SFA, do not approve land ownership adjustments that would result in a net loss or degradation of GRSG habitat. Exceptions include when there is mixed ownership and adjustments would allow for additional or more contiguous federal ownership patterns that support improved GRSG population trends and habitats.

Land Withdrawal
Guideline
GRSG-LR-LW-GL-035
In PHMA and SFA, utilize land withdrawals as a tool, where appropriate and subject to valid existing rights, to prevent activities that will be detrimental to GRSG or their habitats.

Wind Energy Development

Guideline
GRSG-WS-GL-036
In PHMA and SFA, restrict authorization of wind utility-scale and/or commercial energy development except for on-site power generation associated with existing industrial infrastructure (e.g., mine site).

Livestock Grazing

Desired Conditions
GRSG-LG-DC-037
In PHMA, GHMA, and SFA, livestock grazing is managed to ensure adequate nesting cover and does not conflict with the attainment of other vegetative attributes displayed in Table GRSG-GRSGH-DC-002.

Guidelines
GRSG-LG-GL-038
Grazing guidelines should be applied in each of the seasonal habitats as displayed in Table GRSG-LG-GL-038, Grazing Guidelines for Greater Sage-Grouse Seasonal

Habitat. If values in this table cannot be achieved based upon a site-specific analysis using ESDs, long-term ecological site capability analysis, or other similar analysis, adjust grazing management to move towards desired habitat conditions in Table GRSG-GRSGH-DC-002 consistent with the ecological site capability. Do not use drought and degraded habitat condition to adjust values. Grazing guidelines would not apply to isolated parcels of National Forest System lands that have less than 200 acres of GRSG habitat.

Table GRSG-LG-GL-038
Grazing Guidelines for Greater Sage-Grouse Seasonal Habitat

Seasonal Habitat	Grazing Guidelines
Areas managed for breeding and nesting[1] within 5.3 miles of occupied leks	Perennial grass height:[2] When grazing occurs during breeding and nesting season (March 15 to June 30) manage for upland perennial grass height of 7 inches[3,4,5,6] When grazing occurs, post breeding and nesting season (July 1 to November 30) manage for 4 inches[4,5,8] of perennial grass height.
Areas managed for brood rearing and summer habitat[1]	Retain an average stubble height of 4 inches for herbaceous riparian/mesic meadow vegetation[7,9]
Winter[1]	<35% use of sagebrush

[1] For descriptions of Seasonal Habitat and Seasonal Periods of GRSG see Table GRSG-GRSGH-DC-002.
[2] Grass heights only apply in breeding and nesting habitat with ≥10% 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 of Wildlife Management 69: 639-649.
[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*. Wildlife Biology 13(1): 42-50.
[6] Due to variability of annual precipitation and forage production 7 inch stubble height may not be possible every year, even in the absence of livestock grazing.
[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)
[8] Stubble height to be measured at the end of the growing season.
[9] Stubble height to be measured in the meadow areas used by GRSG for brood-rearing (not on the hydric greenline).

GRSG-LG-GL-039
On the Thunder Basin National Grassland, if 90 percent or more of the allotment falls within nesting or brood rearing habitat, 25 percent of the allotment would be exempted from the breeding/nesting residual perennial grass height guidelines in Table GRSG-LG-GL-038.

GRSG-LG-GL-040
In PHMA, GHMA, and SFA, when livestock grazing permits and/or grazing preference are voluntarily relinquished, consider closure of grazing allotments, pastures, or portions of pastures, or managing the allotment as a forage reserve where removal of livestock grazing would enhance the ability to achieve desired habitat conditions displayed in Table GRSG-GRSGH-DC-002.

GRSG-LG-GL-041
Bedding sheep and locating camps within 0.6 mi of a lek during lekking (March 1 to May 15) should be restricted.

GRSG-LG-GL-042
Trailing livestock should be routed through non-habitat or in areas that will minimize impacts on GRSG and their habitats. Specific routes and timeframes should be identified, existing trails should be used, and stopovers on occupied leks should be avoided.

GRSG-LG-GL-043
Collision risk associated with existing fences within 1.2 miles of leks should be minimized through removal or modification (e.g. marking, laydown fences, or other design features).

GRSG-LG-GL-044
In PHMA and SFA, new permanent livestock facilities, except fences, should not be constructed within 0.6 miles from the perimeter of occupied leks. In GHMA, new permanent livestock facilities should not be constructed within 0.25 miles of occupied leks.

GRSG-LG-GL-045
On the Thunder Basin National Grassland, where GHMA overlaps with Management Area 8.4 (Mineral Production), Management Area 3.63 (Black-footed Ferret Reintroduction Habitat), or other designated areas for short-grass species, livestock grazing should be managed to meet the objectives for that Management Area.

Fire Management

Desired Condition
GRSG-FM-DC-046
In PHMA, GHMA, and SFA, the extent and spread of wildfire resulting in loss of sagebrush is minimized, considering firefighter and public safety and other high priority values.

Standards
GRSG-FM-ST-047
In PHMA, GHMA, and SFA, when prescribed fire is used for fuels management or vegetation treatments, design the burn to move conditions towards those displayed in GRSG-GRSGH-DC-002. Restrict prescribed fire in areas of Wyoming big sagebrush, other xeric sagebrush species, where cheatgrass or other fire-invasive species occur, and/or within areas of less than 12-inch precipitation zones unless necessary to facilitate site preparation for restoration of GRSG habitat consistent with desired conditions in Table GRSG-GRSGH-DC-002.

GRSG-FM-ST-048
In PHMA, GHMA, and SFA, if it is necessary to use prescribed fire to facilitate site preparation for restoration of GRSG habitat consistent with desired conditions in Table GRSG-GRSGH-DC-002, the associated NEPA analysis must identify how GRSG desired conditions would be met, why alternative techniques were not selected, and how potential threats to GRSG habitat would be minimized.

GRSG-FM-ST-049
On the Thunder Basin National Grassland, where GHMA overlaps with Management Area 3.63 (Black-footed Ferret Reintroduction Habitat), or other designated areas for short-grass species, allow prescribed fire to meet objectives for that Management Area.

Guidelines
GRSG-FM-GL-050
In PHMA, GHMA, and SFA, when reseeding in fuel breaks, fire resistant native plant species should be used if available, or consider using fire resistance nonnative species, if analysis demonstrates that nonnative plants will not damage GRSG habitat in the long-term.

GRSG-FM-GL-051
Locating temporary wildfire suppression facilities (e.g., incident command posts, spike camps, helibases, and mobile retardant plants) in PHMA, GHMA, and SFA should be avoided.

GRSG-FM-GL-052
In PHMA, GHMA, and SFA, 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-053
In PHMA, GHMA, and SFA, 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-054
In PHMA, GHMA, and SFA, 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-055
In PHMA, GHMA, and SFA, roads and natural fuelbreaks should be incorporated into fuelbreak design to improve effectiveness and minimize loss of existing sagebrush habitat.

GRSG-FM-GL-056
In PHMA, GHMA, and SFA, 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-057
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-058
Localized maps of PHMA, GHMA, and SFA 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-059
In or near PHMA, GHMA, and SFA, a GRSG resource advisor should be assigned to all extended attack fires.

GRSG-FM-GL-060
On critical fire weather days, protection of GRSG habitat should receive high consideration, along with other high values, for positioning of resources.

GRSG-FM-GL-061
Line officers should be involved in setting pre-season wildfire response priorities and, during period of multiple fires, prioritizing protection of PHMA, GHMA, and SFA.

GRSG-FM-GL-062
In PHMA, GHMA, and SFA, consider using fire retardant and mechanized equipment only if it is likely to result in minimizing burned acreage.

GRSG-FM-GL-063
In PHMA, GHMA, and SFA, 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.

Recreation

Desired Condition
GRSG-R-DC-064
In PHMA and SFA, recreation activities are balanced with the ability of the land to support them, while meeting GRSG seasonal habitat desired conditions (Table GRSG-GRSGH-DC-002) and creating minimal user conflicts.

Standard
GRSG-R-ST-065
In PHMA, GHMA, and SFA, do not authorize temporary recreation 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 GRSG or their habitats.

Guidelines
GRSG-R-GL-066
In PHMA, GHMA, and SFA, terms and conditions that protect and restore GRSG habitats within the permit area should be included in new recreation SUAs. 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-067
In PHMA, GHMA, and SFA, new recreational facilities or expansion of existing recreational facilities (e.g., roads, trails, and campgrounds), including SUAs 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.

Roads and Transportation

Desired Condition

GRSG-RT-DC-068

In PHMA, GHMA, and SFA, within the travel management system, GRSG experience minimal disturbance during breeding and nesting (March 15 to June 30), and wintering (December 1 to March 15) periods.

Standards

GRSG-RT-ST-069

Restrict construction of new category level 4 and 5 roads within 1.9 miles of the perimeter of occupied GRSG leks within PHMA and SFA unless construction allows decommissioning of an existing route that negatively affects GRSG.

GRSG-RT-ST-070

Do not authorize any category of road construction within 0.6 miles from the perimeter of occupied leks within PHMA or SFA or 0.25 miles from the perimeter of occupied leks in GHMA as described in GRSG-TDDD-ST-013 and 014-Standards.

GRSG-RT-ST-071

In PHMA and SFA, do not allow upgrading of existing routes that would change route category (level 1 through 5) or capacity unless the upgrading would have minimal impact on GRSG, is necessary for motorist safety, or eliminates the need to construct a new road.

GRSG-RT-ST-072

If necessary to construct new roads and trails in PHMA or SFA for one of the reasons listed in GRSG-RT-ST-003-Standard or to access valid existing rights, limit construction to the minimum standard, length, and number and avoid, minimize, and compensate for the impacts. See the Density Disturbance Calculation appendix in the WY-9 Plan.

GRSG-RT-ST-073

In PHMA, GHMA, and SFA, do not allow public access on temporary energy development roads, unless consistent with all other terms and conditions included in this forest plan amendment.

Guidelines

GRSG-RT-GL-074

In PHMA, GHMA, and SFA, new roads and road realignments should be designed and administered to reduce collisions with GRSG.

GRSG-RT-GL-075

In PHMA, GHMA, and SFA, 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 perpendicular to ephemeral drainages and stream crossings, unless topography prevents doing so.

GRSG-RT-GL-076

In PHMA, GHMA, and SFA, when decommissioning roads and unauthorized routes, restoration activity should be designed to move habitat towards desired conditions displayed in Table GRSG-GRSGH-DC-002.

GRSG-RT-GL-077

In PHMA, GHMA, and SFA, dust abatement terms and conditions should be included in road-use permits when dust has the potential to impact GRSG.

GRSG-RT-GL-078

In PHMA, GHMA, and SFA, road and roadway 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.

Minerals

Fluid Minerals – Unleased

Standards

GRSG-M-FMUL-ST-079

In PHMA, GHMA, and SFA, new oil and gas leases may be offered consistent and subject to the leasing stipulations in the timing, distance, and density and disturbance direction in section GRSG-TDDD.

GRSG-M-FMUL-ST-080

In PHMA and SFA, require geophysical exploration projects to be designed to minimize habitat fragmentation.

Fluid Minerals – Leased

Standards

GRSG-M-FML-ST-081

In PHMA and SFA when approving the Surface Use Plan of Operation portion of the APD on existing leases that are not yet developed, require that leaseholders avoid and minimize surface disturbances and disruptive activities consistent with the rights granted in the lease.

GRSG-M-FML-ST-082

In PHMA and SFA, 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 GRSG-GRSGH-DC-002.

GRSG-M-FML-ST-083

Locate compressor stations on portions of a lease that are non-habitat and are not used by GRSG, and if there would be no direct, indirect, or cumulative effects on GRSG 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 GRSG-TDDD-ST-015-Standard.

GRSG-M-FML-ST-084

In PHMA, GHMA, and SFA, when authorizing development of fluid mineral resources, work with the operator to minimize impacts on GRSG and their habitat, such as locating facilities in nonhabitat areas first and then in the least suitable habitat.

Guidelines

GRSG-M-FML-GL-085

In PHMA, GHMA, and SFA on existing leases, 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 APD, terms and conditions should be included to reduce disturbance to GRSG, where appropriate, feasible, and consistent with the rights granted to the lessee.

GRSG-M-FML-GL-086

On existing federal leases in PHMA, GHMA, and SFA, 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 GRSG, based on vegetation, topography, or other habitat features.

GRSG-M-FML-GL-087

In PHMA, GHMA, and SFA, 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, COAs, conservation measures and RDFs to the appropriate surface management instruments to the maximum extent permissible under existing authorities.

Fluid Minerals – Operations

Guidelines

GRSG-M-FMO-GL-088

In PHMA, important habitat management areas, and SFA, do not authorize employee camps.

GRSG-M-FMO-GL-089

In PHMA and SFA, closed-loop systems should be used for drilling operations with no reserve pits, where feasible.

GRSG-M-FMO-GL-090
In PHMA, GHMA, and SFA, 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-091
In PHMA, GHMA, and SFA, dams, impoundments and ponds for mineral development should be constructed to reduce potential for West Nile virus. Examples of methods to accomplish this include:

- 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. Restrict flooding terrestrial vegetation in flat terrain or low-lying areas.
- Construct dams or impoundments that restrict down-slope 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 existing 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 re-inject produced water.
- Treat waters with larvicides to reduce mosquito production where water occurs on the surface.

GRSG-M-FMO-GL-092
In PHMA, GHMA, and SFA 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.

Coal Mines
Standards
GRSG-M-CM-ST-093
Apply all restrictions listed in the Timing, Distance, Density and Disturbance section to coal exploration and new coal lease projects.

GRSG-M-CM-ST-094
PHMA and SFA are essential habitat for maintaining GRSG for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).

Guideline
GRSG-M-CM-GL-095
In PHMA, GHMA, and SFA, when coal leases are subject to readjustment, additional requirements should be included in the readjusted lease to protect and reduce threats to GRSG and their habitats to conserve, enhance, and restore habitat for long-term viability.

Locatable Minerals
Standards
GRSG-M-LM-ST-096
In priority habitat management areas and sagebrush focal areas, only approve Plans of Operation with mitigation to protect GRSG and their habitats, consistent with the rights of the mining claimant as granted by the Mining Law of 1872, as amended.

GRSG-M-LM-ST-097
The disturbance cap described in GRSG-TDDD-ST-023-Standard will not be applied to foreclose development of locatable minerals on unpatented claims located under

the Mining Law of 1872, as amended; the disturbance from locatable mining will be accounted for in determining the percent disturbance and whether the cap has been exceeded.

Nonenergy Leasable Minerals

Guidelines

GRSG-M-NEL-GL-098

In PHMA, GHMA, and SFA, at the time of issuance of prospecting permits, exploration licenses and leases, or readjustment of leases for nonenergy leasable minerals, the Forest Service should provide recommendations to the BLM for the protection of GRSG and their habitats.

GRSG-M-NEL-GL-099

In PHMA, GHMA, and SFA, the Forest Service should recommend to the BLM that expansion or readjustment of existing leases avoid, minimize, or compensate for the effect on GRSG and their habitat

Mineral Materials

Standards

GRSG-M-MM-ST-100

Apply all restrictions listed in the timing, distance, density and disturbance direction in section GRSG-TDDD to authorizations for mineral material sales and free use.

GRSG-M-MM-ST-101

Permits for mineral material operations in PHMA, GHMA, or SFA must include appropriate requirements for reclamation of the site to restore, enhance, or maintain desired habitat conditions displayed in Table GRSG-GRSGH-DC-002.

Predators

Guideline

GRSG-PR-GL-102

Efforts by other agencies to minimize impacts from predators on GRSG should be supported and encouraged where needs have been documented.

2.7 ADAPTIVE MANAGEMENT, MONITORING, AND MITIGATION

The following management direction applies to the Proposed Plans. In making amendments to this plan, the BLM and Forest Service will coordinate with the USFWS as the BLM and Forest Service continue to meet their objective of conserving, enhancing and restoring GRSG habitat by reducing, minimizing or eliminating threats to that habitat.

2.7.1 Adaptive Management Plan

Adaptive management is a decision process that promotes flexible resource management decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits.

In relation to the BLM and Forest Services' National Greater Sage-grouse Planning Strategy, adaptive management will help identify if GRSG conservation measures presented in this EIS contain the needed level of certainty for effectiveness. Principles of adaptive management are incorporated into the conservation measures in the plan to ameliorate threats to a species, thereby increasing the likelihood that the conservation measure and plan will be effective in reducing threats to that species. The following provides the BLM and Forest Service's adaptive management strategy for the Utah Sub-region.

Adaptive Management and Monitoring

This EIS contains a monitoring framework plan (**Appendix C**) 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 2013a). The information collected through the Monitoring Framework Plan outlined in **Appendix C** will be used by the BLM and Forest Service to determine when adaptive management hard and soft triggers (discussed hereafter) are met.

Adaptive Management Triggers

As described in the Draft EIS, the Utah Sub-region adaptive management strategy includes the identification of soft and hard triggers and a management approach for responding to those triggers. In the spring of 2014, a multi-agency Utah group coordinated to developed adaptive management triggers for GRSG populations in Utah. This group included UDWR, Utah Governor's Public Lands Policy Coordination Office, USFWS, Forest Service, and BLM. A biologist focus group, a subset of the Utah adaptive management group, was tasked with reviewing GRSG monitoring data and determining what population and habitat triggers are appropriate given the natural cyclic variability observed in all GRSG populations. The adaptive management specific measures and thresholds are described in further detail in **Appendix B**, along with the identified management responses to be applied in the event a trigger is met.

Soft Triggers

Soft triggers represent an intermediate threshold indicating that management changes are needed at the project/implementation level to address habitat and population losses. If a soft trigger is tripped, the BLM and Forest Service will apply more conservative or restrictive implementation conservation measures to mitigate for the specific causal factor in the decline of populations and/or habitats, with consideration of local knowledge and conditions. For example:

> *Monitoring data within an already federally authorized project area within a given GRSG population area indicates that there has been a slight decrease in GRSG numbers in this area. Data also suggests the decline may be attributed to GRSG collisions with monitoring tower guy-wires from this federally authorized project. BLM then receives an application for a new tower within the same GRSG population area. The response would be to require the new authorization's tower guy-wires to be*

flagged. Monitoring data then shows the decline is curtailed. The adaptive management soft trigger response is to require future applications to flag for guy-wires.

These types of adjustments will be made to preclude tripping a "hard" trigger (which signals more severe 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 will be required.

Appendix B identifies specific soft triggers for both GRSG populations and habitat. The BLM and Forest Service would annually review of monitoring data to determine if a soft trigger has been met, and if there is a specific cause or causes that are contributing to the decline. In completing this evaluation, the BLM and Forest Service will coordinate with GRSG biologists from multiple agencies including the USFWS, NRCS, and UDWR in evaluating information, determining a potential cause, and recommending a course of action to reverse the trends, if they are determined to be outside of natural fluctuations.

Hard Triggers

Hard triggers represent a threshold indicating that immediate action is necessary to stop a severe deviation from GRSG conservation objectives as set forth in the BLM and Forest Service plans. **Appendix B** identifies specific hard triggers for both GRSG populations and habitat. Table B.1 in **Appendix B** includes a series of actions that would be immediately implemented in area were monitoring to indicate a hard trigger is been met. These actions were considered within the range of alternatives in the Draft EIS, and as such, they would be implemented without a need for further NEPA.

In addition to implementing the "hard wired" management changes, the BLM and Forest Service will review available and pertinent data, in coordination GRSG biologists from multiple agencies including the UDWR, USFWS, and NRCS, to determine the causal factor(s) and identify a corrective strategy. The corrective strategy would include the changes identified in Table B.1 of **Appendix B**, but could also include the need to amend or revise the LUPs to address the situation and modify management accordingly. Further, if new scientific information demonstrates that the "hard wired" response would be insufficient to stop a severe deviation from GRSG conservation objectives set forth in the BLM and Forest Service plans, the BLM and Forest Service would implement a formal directive akin to BLM IM 2012-043 to protect GRSG and its habitat and to ensure that conservation options are not foreclosed. To the extent that it is supported scientifically, this formal directive will be drawn from the range of alternatives analyzed in the development of the RMP Amendments.

2.7.2 Monitoring for the Greater Sage-grouse Planning Strategy

The BLM's planning regulations, specifically 43 CFR 1610.4-9, require that land use plans establish intervals and standards for monitoring based on the sensitivity of the resource decisions. Land use plan monitoring is the process of tracking the implementation of land use plan decisions (implementation monitoring) and collecting data/information necessary to evaluate the effectiveness of land use plan 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 (50 CFR Vol. 68, No. 60). One of the criteria in the policy evaluates whether provisions 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 are provided.

A guiding principle in the BLM National Sage-grouse Conservation Strategy (DOI 2004) is that "the Bureau is committed to sage-grouse and sagebrush conservation and will 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 Greater Sage-grouse Conservation Objectives: Final Report (USFWS 2013a), the BLM and Forest Service will monitor implementation and effectiveness of conservation measures in GRSG habitats.

On March 5, 2010, USFWS' 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered were posted as a Federal Register notice (75 *Federal Register* 13910-14014, March 23, 2010). 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 sage-grouse on BLM lands."*

Standardization of monitoring methods and implementation of a defensible monitoring approach (within and across jurisdictions) will resolve this situation. The BLM, Forest Service, 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, 4 percent on tribal and other federal lands) (75 *Federal Register* 13910, March 23, 2010), and state fish and wildlife agencies have primary responsibility for population level wildlife management, including population monitoring. Therefore, population efforts will continue to be conducted in partnership with state fish and wildlife agencies. The BLM and Forest Service have finalized a monitoring framework, which can be found in **Appendix C**. This framework describes the process that the BLM and Forest Service will use to monitor implementation and effectiveness of RMP/LUP decisions. The monitoring framework includes methods, data standards, and intervals of monitoring at broad and mid scales; consistent indicators to measure and metric descriptions for each of the scales; analysis and reporting methods; and the incorporation of monitoring results into adaptive management. The need for fine-scale and site-specific habitat monitoring may vary by area depending on existing conditions, habitat variability, threats, and land health. Indicators at the fine and site scales will 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 will monitor and track implementation and effectiveness of planning decisions (e.g., tracking of waivers, modifications, site-level actions). The two agencies will monitor the effectiveness of RMP/LUP decisions in meeting management and conservation objectives. Effectiveness monitoring will include monitoring disturbance in habitats, as well as landscape habitat attributes. To monitor habitats, the BLM and Forest Service will measure and track attributes of occupied habitat, PHMA, and GHMA at the broad scale, and attributes of habitat availability, patch size, connectivity, linkage/connectivity habitat, edge effect, and anthropogenic disturbances at the mid-scale. Disturbance monitoring will measure and track changes in the amount of sagebrush in the landscape and changes in the anthropogenic footprint, including change energy development density. The framework also includes methodology for analysis and reporting for field offices, states, ranger districts, BLM districts, National Forests, and Forest regions, including geospatial and tabular data for disturbance mapping (e.g., geospatial footprint of new permitted disturbances) and management actions effectiveness.

2.7.3 Regional Mitigation

Consistent with the Proposed Plans' goals outlined in **Sections 2.6.2, 2.6.3** and **2.6.4**, the intent of the Proposed Plans is to provide a net conservation gain to the species. To do so, in undertaking BLM and Forest Service 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 and Forest Service 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. 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." Exceptions to net conservation gain for GRSG may be made for vegetation treatments to benefit Utah prairie dog.

Mitigation Standards

In undertaking BLM and Forest Service 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 and Forest Service will require and assure 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 USFWS in its 2010 listing decision (75 *Federal Register* 13910) and shown in Table C.2 in the Greater Sage-Grouse Monitoring Framework (**Appendix C**). Exceptions to net conservation gain for GRSG may be made for vegetation treatments to benefit Utah prairie dog.

Mitigation will follow the regulations from the White House CEQ (40 CFR 1508.20; e.g. avoid, minimize, and compensate), hereafter referred to as the mitigation hierarchy. If impacts from BLM or 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 will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation (see the concepts of durability, timeliness, and additionality as described further in **Appendix D**).

Greater Sage-Grouse Conservation Team

The BLM and Forest Service will establish a WAFWA MZ 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 MZ 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 MZ (see **Section 2.7.2**). Subsequently, the Team will use these data to either modify the appropriate Regional Mitigation Strategy or recommend adaptive management actions (see **Section 2.7.1**).

The BLM and Forest Service will invite governmental and tribal partners to participate in this Team, including the UDWR 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. USFWS, BLM, and Forest Service), tribal governments, state and local government(s), 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 a 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 one year of the issuance of the Record of Decision. The BLM's Regional Mitigation Manual MS-1794 will serve as a framework for developing the Regional Mitigation Strategy. The Regional Mitigation Strategy will be applicable to the States/Field Offices/Forests within 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 Regional Mitigation Strategy developed by the Team will elaborate on the components identified above (i.e. avoidance, minimization, and compensation; additionality, timeliness, and durability) and further explained in **Appendix D**.

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 Land Use Authorization Analyses

The BLM and Forest Service will include the avoidance, minimization, and compensatory recommendations from the Regional Mitigation 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 will be 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 will be implemented at a State-level (as opposed to a WAFWA MZ, a field office, 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 or Forest Service will 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 ROD. The selection of the third-party compensatory mitigation administrator will conform to all relevant laws, regulations, and policies. The BLM and Forest Service will remain responsible for making decisions that affect federal lands.

2.7.4 Boundary Adjustments

Through this planning process, the BLM and Forest Service are considering which lands have the highest conservation value, or which lands are necessary to maintain or increase GRSG populations in the Utah Sub-region planning area. **Maps 2.1** through **2.6**, which can be found in **Appendix A**, show the areas where GRSG management/conservation would be emphasized under each alternative considered in the Draft LUPA/EIS. Under Alternatives B, C, and D mapped occupied GRSG habitat would be managed as either PHMA or GHMA. Under Alternative E1, GRSG habitat determined to have the highest conservation value by the State of Utah would be managed as SGMAs. GRSG habitat outside of the SGMAs would continue to be managed according the measures in the existing LUPs and activity-level plans. Under Alternative E2, GRSG habitat determined to have the highest conservation value by the State of Wyoming would be managed as a core area. GRSG habitat outside of core areas would be managed as noncore areas.

The Proposed Plans identify PHMA and GHMA based on those areas analyzed in the range of alternatives in Draft LUPA/EIS. The boundaries were adjusted based on public comments, coordination with cooperating agencies, and an evaluation of the best available science and monitoring information collected at a level commensurate with the landscape scale of LUP decision-making. Similar to Alternatives B-D, the two-tier prioritization of GRSG range and habitat are identified as PHMA and GHMA.

The mapped occupied habitat used as a baseline for this planning process, and the corresponding PHMA and GHMA were not intended to represent a survey-grade boundary and are not expected to be used at a project-level without any refinement. In accordance with existing law, regulation and policy, inventories will continue to be conducted to provide information on GRSG habitat and distribution (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM Manual 6840 .04 E 2). Prior to considering proposed actions within mapped occupied habitat, a field evaluation should be conducted by a qualified biologist in collaboration with federal and state biologists. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat and PHMA/GHMA boundaries. When reviewing a proposed action, if there are discrepancies identified between the LUP maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management would be applied.

Just as mapped occupied habitat may include areas of non-habitat or areas that are not currently important to the GRSG life-cycle, GRSG habitat may exist outside of the mapped occupied habitat areas or PHMA/GHMA. Maps should be reviewed and revised periodically to include additional GRSG habitat identified during survey or inventory work or restored through conservation projects.

Changes to maps and associated acreages would occur through the appropriate BLM and Forest Service planning processes (e.g., plan maintenance and plan amendments). Additional information and protocol for adjusting GRSG mapped occupied habitat and PHMA/GHMA boundaries is included in **Appendix N**. The administrative process through which boundary adjustments would be made would be determined on a case-by-case basis.

2.8 DRAFT LUPA/EIS ALTERNATIVES

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

2.8.1 Alternative A (No Action)

Under Alternative A, the No Action Alternative, the BLM and Forest Service would not amend existing LUPs. GRSG habitat would continue to be managed under current management direction. Goals and objectives for BLM-administered and National Forest System lands and federal mineral estate would not change. Allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, lands and realty, and livestock grazing would also remain the same. Specific decisions from the existing LUPs are identified in **Appendix I**, Detailed No Action Alternative.

2.8.2 Alternative B

Alternative B is based on *A Report on National Greater Sage-Grouse Conservation Measures* (NTT report). In August 2011, the BLM convened the Sage-Grouse NTT, which brought together resource specialists and scientists from the BLM, state fish and wildlife agencies, and other federal agencies. The NTT developed a series of science-based conservation measures to be considered and analyzed through the land use planning process.

On December 27, 2011, the BLM released IM 2012-044. In accordance with this IM, the BLM must consider all conservation measures developed by the NTT in at least one alternative in the land use planning process. Alternative B fulfills this requirement.

Under Alternative B, areas identified as PHMA (**Map 2.1**) would be closed to new leasing, closed to mineral materials disposal, recommended for withdrawal from mineral entry, and exclusion for new ROWs. Livestock grazing would continue to occur in GRSG habitat, so long as that habitat is meeting certain resource objectives. In addition, PHMA would be managed so that discrete anthropogenic disturbances cover less than 3 percent of the total GRSG habitat regardless of ownership. In areas where the 3 percent disturbance threshold is already exceeded, no further anthropogenic disturbances would be permitted by the BLM or Forest Service until enough GRSG habitat has been restored to maintain the area under this threshold. Under Alternative B, fire (neither prescribed nor natural) and vegetation treatments would not count toward the disturbance threshold.

Mapped occupied GRSG habitat not identified as PHMA would be categorized as GHMA. In most instances, GHMA would continue to be managed under management direction in existing LUPs.

2.8.3 Alternative C

Alternative C includes additional conservation measures to those included in the NTT report. This alternative was developed to address issues raised by interested and affected public during the scoping process. Similar to Alternative B, PHMA (**Map 2.2**) would be closed to new leasing, closed to mineral materials disposal, recommended for withdrawal from mineral entry, and exclusion for new ROWs.

With regards to livestock grazing, Alternative C is subdivided into two sub-alternatives, Alternative C1 and Alternative C2. Under Alternative C1, all GRSG habitat currently available for livestock grazing would become unavailable. In

addition, wild horse AMLs would be reduced by 25 percent. Under Alternative C2, the BLM and Forest Service would reduce AUMs and change the season of use so that no livestock grazing would occur in GRSG habitat during the growing season. An explanation of how this reduction was calculated is included in **Appendix J**, Methodology for Calculating a Substantial Livestock Grazing Reduction under Alternative C2.

PHMA would be managed so that discrete anthropogenic disturbances cover less than 3 percent of the total GRSG habitat regardless of ownership. In areas where the 3 percent disturbance threshold is already exceeded, no further anthropogenic disturbances would be permitted in PHMA by the BLM or Forest Service until enough GRSG habitat has been restored to maintain the area under this threshold. Unlike Alternative B, under Alternative C fire (both natural and prescribed) would count toward the disturbance threshold. In addition, certain types of vegetation treatments (everything except hand thinning, lop and scatter, and bull-hogging) would also be considered disturbance. Finally, under Alternative C2, heavily grazed areas would also be considered disturbance.

Under Alternative C, all mapped occupied GRSG habitat would be managed as PHMA. Therefore, there would be no GHMA.

2.8.4 Alternative D

This alternative was developed by the Utah BLM in cooperation with the Forest Service Intermountain Region, and local USFWS. This alternative was designed to address local ecological site variability, as well as consideration of certain measures in the range of alternatives. This alternative also emphasizes balancing resources and resource use among competing human interests, land uses, and the conservation of GRSG habitat.

Under Alternative D, PHMA (**Map 2.3**) would be open to most land uses, but stipulations would be applied to authorizations and actions. On the whole, land use restrictions would be more stringent within 4 miles of occupied GRSG leks, which would protect both the lek and the surrounding nesting/brooding habitat. Grazing practices would be designed to promote habitat meeting the GRSG habitat characteristics necessary for, science-based, successful breeding and brood-rearing habitats of GRSG. A unique aspect of Alternative D is that some management decisions would extend outside of mapped occupied GRSG habitat. Decisions that extend outside of mapped occupied habitat are intended to protect GRSG from indirect and cumulative impacts.

Under Alternative D, PHMA would be managed so that discrete anthropogenic disturbances cover less than 5 percent of the total GRSG habitat regardless of ownership. In areas where the 5 percent disturbance threshold is already exceeded, no further anthropogenic disturbances would be permitted by the BLM or Forest Service until enough GRSG habitat has been restored to maintain the area under this threshold. Under Alternative D, fire (neither prescribed nor natural) and vegetation treatments would not count toward the disturbance threshold.

Mapped occupied GRSG habitat not identified as PHMA would be categorized as GHMA. GHMA would be open to all land uses, but stipulations would be applied to most authorizations and actions within 1 mile of occupied GRSG leks.

2.8.5 Alternative E

As explained in **Chapter 1**, the planning area includes all occupied GRSG habitat in the State of Utah (except GRSG habitat located on portions of the Sawtooth National Forest in Utah) as well as lands administered by the Ashley National Forest located in the State of Wyoming. Because portions of two states fall within the planning area, Alternative E is divided into two sub-alternatives: E1 and E2.

Alternative E1 is based on the State of Utah's *Conservation Plan for Greater Sage-Grouse in Utah*, and would apply to all BLM-administered and National Forest System lands located in Utah. Alternative E2 is based on the State of Wyoming's Governor's Executive Orders 2011-05 and 2013-3 with adjustments by the BLM interdisciplinary team, which includes members of the Wyoming Governor's Office.

Alternative E1

As mentioned above, Alternative E1 is based on the State of Utah's *Conservation Plan for Greater Sage-Grouse in Ut*ah, which was designed to eliminate the threats facing

the GRSG while balancing the economic and social needs of the residents of Utah. The management actions being considered under Alternative E1 would only apply to BLM-administered and National Forest System lands in Utah. In development of the plan, Governor Gary Herbert assembled a diverse group of stakeholders to share their recommendations for the plan. This advisory team, known as the GRSG Working Group, included representatives from state and federal agencies, county commissions, energy-development companies, agriculture interests, private landowners, wildlife advocates and other participating organizations. Conservation measures that were submitted to the Governor's Office were developed by the GRSG Working Group in coordination with local GRSG working groups. After the Working Group held open public meetings (February through October of 2012), its input was used to draft the plan.

The Utah state plan identifies 11 SGMAs, which are located across the state (**Map 2.7**). Management activities or restrictions identified in the plan only apply to GRSG habitat located in the SGMAs (**Map 2.4**).

While not identical to the population areas, the 11 state-identified SGMAs correlate with the population areas identified by the BLM and Forest Service. Under Alternative E1, the Anthro Mountain and West Tavaputs portions of the BLM and Forest Service's Carbon Population Area would not be included in the SGMA, since the State's plan does not consider these areas essential for connectivity given the presence of other connecting avenues for movement in the region and the unknown degree (number and frequency) of connectivity required to maintain genetic diversity.

Under Alternative E1, emphasis would be placed on expanding GRSG habitat by aggressively treating areas where there are encroaching conifers or invasive species.

Alternative E1 includes a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMAs. Under Alternative E1 in the Draft EIS, fire counted toward the disturbance threshold, but vegetation treatments would not. In comments on the Draft EIS, the state noted that fire would no longer count against the disturbance cap in their plan. However, the state's plan has not been formally revised to exclude fire from the disturbance cap. As such, in the Proposed LUPA/Final EIS, it is still considered as disturbance, though it is anticipated that the state will eventually amend their plan to treat wildland fire in a manner more similar to Alternative D or the Proposed Plans.

Under Alternative E1, occupied habitat outside of the state-identified SGMAs would not receive any new management protection. They would continue to be managed according to the GRSG actions in existing LUPs and conservation measures associated with existing activity-level plans.

It is important to note that Alternative E1 is not the *Conservation Plan for Greater Sage-Grouse in Utah*; rather, Alternative E1 is based on Utah's published state plan. The BLM and Forest Service both have specific planning regulations and policies with which they must comply. In order to comply with these regulations and policies and to adequately compare the effects of Utah's state plan with other alternatives being considered in this LUPA/EIS, the BLM and Forest Service have had to take management activities or restrictions identified in Utah's state plan and convert them into a language that is consistent with BLM and Forest Service planning regulations and policies. To ensure correct translation, the BLM and Forest Service have been assisted by the State of Utah in this effort. For example, for fluid minerals, the BLM and Forest Service must identify areas that are open to leasing, subject to major constraints such as no-surface-occupancy stipulations. Although Utah's state plan includes decisions for fluid minerals, it does not include this terminology; therefore, some interpretation was required.

Finally, Utah's state plan includes many decisions that go beyond what the BLM and Forest Service have the ability to address through their respective land use planning processes. For example, the plan includes incentive-based programs for private, local government, and SITLA lands. Alternative E1 only includes decisions from the state plan tied to BLM and Forest Service decision-making authority. Actions included in the State of Utah's plan that are outside of BLM and Forest Service jurisdiction are considered within the cumulative impact analysis.

Alternative E2

Alternative E2 is based on the State of Wyoming's Greater Sage-grouse Core Area Protection (State Of Wyoming Executive Department Executive Orders 2011-5 and 2013-03), which was designed to eliminate the threats facing the GRSG while balancing the economic and social needs of the residents of Wyoming. The management actions being considered under Alternative E2 would only apply to National Forest System lands in the Wyoming portions of the Utah Sub-region. In development of the strategy, Governor Matt Mead assembled a diverse group of stakeholders to share their recommendations for the strategy. This advisory team, known as the Sage-Grouse Implementation Team (SGIT), included representatives from state and federal agencies, county commissions, energy-development companies, agriculture interests, private landowners, wildlife advocates, and other participating organizations. Conservation measures that were submitted to the Governor's Office were developed by the SGIT in coordination with local GRSG working groups.

Similar to Alternative E1, Alternative E2 is not the Wyoming Executive Orders 2011-5 and 2013-3 for Greater Sage-Grouse Core Area Protection in Wyoming; rather, Alternative E2 is based on the Wyoming's state strategy, BLM IM 2012-044, and Wyoming IM 2012-019. The BLM and Forest Service both have specific planning regulations and policies with which they must comply. In order to comply with these regulations and policies, and in order to adequately compare the effects of Wyoming's state strategy with other alternatives being considered in this LUPA/EIS, the Forest Service has had to take management activities or restrictions identified in the Wyoming Executive Orders 2011-05 and 2013-03 for GRSG Core Area Protection in Wyoming, and convert them into a language that is consistent with Forest Service planning regulations and policies. To ensure correct translation, the BLM and Forest Service have been assisted by the State of Wyoming in this effort.

The Wyoming Executive Orders identifies GRSG core population areas (core habitat), which are located across the state (**Map 2.5**). Both core and non-core habitat would be open to most land uses, but a variety of stipulations would be applied to authorizations and actions (e.g., disturbance cap, energy density cap, seasonal restrictions, and lek buffers). In general, stipulations within core habitat are more stringent than stipulations outside of core habitat.

Within GRSG core habitat, when mitigation is required, the agencies in coordination with the Wyoming Game and Fish Department (WGFD) and partners, would use the following mitigation hierarchy: in-kind and onsite (on lease) mitigation as first priority, second priority in-kind mitigation offsite within the projects Density Disturbance Calculation Tool analysis area, third in-kind mitigation offsite within the core area boundary, and fourth in-kind mitigation adjacent to the affected core area within another important GRSG habitat in Wyoming. When additional offsite mitigation is necessary, conduct it within the same population area where the impact occurs if possible or, if that is not possible, within the same MZ per the 2006 WAFWA Strategy as the impact.

Within core areas, the Wyoming Executive Order establishes density and disturbance goals. The Wyoming Executive Order limits or reduces the density of oil and gas or mining activities to no more than an average of 1 location per 640 acres. In addition, no more than 5 percent disturbance is allowed in core areas. The Wyoming Executive Order includes a specific process for calculating disturbance. Vegetation treatments that do not reduce the canopy cover to less than 15 percent do not count towards disturbance. Wildland fire is generally counted as disturbance until it is functional GRSG habitat again.

2.9 Summary Comparison of Proposed Plans and Draft Alternatives

This section summarizes and compares Alternatives A through E and the BLM and Forest Service Proposed Plans considered in the Proposed LUPA/Final EIS. **Table 2.2** summarizes and compares major allocations for the BLM Proposed Plan, Forest Service-Utah Proposed Plan, and the Forest Service-Wyoming Proposed Plan, resulting in a column that summarizes the acreages associated with the three Proposed Plans to enable comparison with the Draft LUPA/EIS alternatives.

Table 2.3 compares Alternatives A through E and the BLM and Forest Service Proposed Plans considered in the Proposed LUPA/Final EIS. Combined with the

appendices and maps, **Table 2.3** 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.

Information in these tables can be useful in helping the reader understand differences between the alternatives; however, there are limitations. The reader is urged to use the information in these tables as a quick reference, but to read the detailed alternatives and analyses (**Table 2.4** and **Chapters 4** and **5**) to understand specific distinctions.

Table 2.2
Summary of Allocation Decisions of the BLM and Forest Service Proposed Plans

Decision		BLM Proposed Plan	Forest Service – Utah Proposed Plan*	Forest Service – Wyoming Proposed Plan	Total BLM/ Forest Service Acres*
Sage-Grouse Habitat					
Priority Habitat Management Areas (PHMA)	Federal Surface	2,026,400	711,900	24,800	2,763,100
	Federal Minerals	560,750	n/a	n/a	560,750
	Total	**2,587,150**	**711,900**	**24,800**	**3,323,850**
General Habitat Management Areas (GHMA)	Federal Surface	502,500	28,500	52,000	583,000
	Federal Minerals	144,500	n/a	n/a	144,500
	Total	**647,000**	**28,500**	**52,000**	**727,500**
Priority Areas for Conservation (PAC)	PHMA within PACs	2,545,200	709,300	24,800	3,279,300
	GHMA within PACS	14,900	3,200	0	18,100
	PHMA outside of PAC	42,100	28,400	0	70,500
	GHMA outside of PAC	632,100	40,800	52,000	724,900
Livestock Grazing					
AUMs Available	BLM-administered Lands	329,521	0	0	329,521
	National Forest System Lands	0	265,373		265,373
Acres Unavailable for Livestock Grazing		9,614	14,724	3,121	27,459
Travel Management					
Area Designations	Open	525	N/A**	N/A**	525
	Limited to Existing	1,274,700	N/A**	N/A**	1,274,700
	Limited to Designated	1,220,500	N/A**	N/A**	1,220,500
	Closed	33,200	N/A**	N/A**	33,200

Table 2.2
Summary of Allocation Decisions of the BLM and Forest Service Proposed Plans

Decision			BLM Proposed Plan	Forest Service – Utah Proposed Plan*	Forest Service – Wyoming Proposed Plan	Total BLM/ Forest Service Acres*
Lands and Realty						
Utility Corridors	Designated Corridors to be Retained		17,600	7,500	0	25,100
	Designated Corridors to be Undesignated		18,200	15,000	0	33,200
	Designated Corridors to be Stipulated as Underground Use Only		44,300	60	0	44,400
	New Designated Corridors		0	0	0	0
Land Tenure Adjustments	Available for FLPMA Section 203 Sale		0	0	0	0
Avoidance and Exclusions	All New ROWs	No Restrictions	503,800	38,600	52,000	594,400
		Avoidance	1,997,000	743,000	24,800	2,764,800
		Excluded	28,100	0	0	28,100
	Wind Development	No Restrictions	484,900	28,300	52,000	565,200
		Avoidance	0	200	24,800	25,000
		Excluded	2,044,000	753,100	0	2,797,100
	Solar Development	Solar Allocation	0	0	76,800	0
		Avoidance	0	0	0	0
		Excluded	3,234,150	781,600	0	4,092,550
Mineral Resources						
Fluid Mineral Leasing Categories	Open		228,100	5,700	4,900	238,700
	CSU/TL		279,100	6,200	36,600	321,900
	NSO		2,538,700	715,900	3,700	3,258,300
	Closed		97,400	40,600	500	138,500
	No Fluid Minerals Allocation***		N/A	12,700	31,100	43,800
	Planning Decision not Mapped****		89,600	N/A	N/A	89,600
Closed to Nonenergy Solid Leasable Minerals	Surface Mining		0	0	0	0
	All Leasing		2,614,700	755,300	0	3,370,000
Coal	Unsuitable for Surface Mining		0	0	0	0
	Unacceptable for Leasing		22,900	0	0	22,900

Table 2.2
Summary of Allocation Decisions of the BLM and Forest Service Proposed Plans

Decision		BLM Proposed Plan	Forest Service – Utah Proposed Plan*	Forest Service – Wyoming Proposed Plan	Total BLM/ Forest Service Acres*
Closed Mineral Materials Disposal	Commercial	0	0	0	0
	Closed to Mineral Materials Disposal	2,587,100	753,100	0	3,340,200
Existing and Recommended Locatable Mineral Withdrawals		607,500	73,400	52,500	733,400
Special Designations					
New BLM ACECs		0	0	0	0
New Forest Service Zoological Areas		0	0	0	0

N/A = Not applicable. Under Alternative A, B, C, and E, ROW avoidance and exclusion decisions would apply to all ROW types (e.g., above ground linear and site types). Under Alternative D, certain types of ROWs would be allowed in GRSG habitat with restrictions, other types would be prohibited.
* The 41,200 acres of National Forest System lands in the Anthro Mountain area in the Carbon Population Area would be managed as neither PHMA nor GHMA. These areas would be identified as "Occupied – Anthro Mountain."
** Forest Service: The Forest Service does not use similar OHV management categories. OHV use on 858,400 acres of National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.
*** No fluid minerals allocation applies primarily to National Forest System lands. These are areas where the Forest Service has not made allocation level decisions for fluid minerals in a land use planning process. Typically, these areas have low or no known oil and gas development potential. These areas also frequently overlap specially designated areas (e.g., Flaming George National Recreation Area and designated wilderness areas) The Forest Service will not be making allocation decision for these areas through this LUPA/EIS process. Prior to making leasing decisions in these areas the Forest Service would be required to take into consideration the compatibility of fluid minerals development with other resource goals and objectives (e.g., recreation). Through this LUPA/EIS process the Forest Service will identify the minimum protection measures that would be required in these areas based on GRSG concerns.
**** These areas are located on both BLM-administered and National Forest System lands, but primarily on BLM-administered lands where a leasing decision has been made, but that decision has not been mapped. This commonly occurs in areas where there is federal minerals and non-federal surface (split-estate). As part of this LUPA/EIS, in GRSG habitat, the BLM and Forest Service may be changing leasing decisions and will be mapping leasing decisions in these areas.

Table 2.3
Comparative Summary of Allocation Decisions of the Proposed Plan Amendments and Draft Alternatives

Decision		Alternative A	Alternative B	Alternative C		Alternative D	Alternative E	Proposed Plans*
Sage-Grouse Habitat								
Priority Habitat Management Areas (PHMA)	Federal Surface	0	2,781,700	3,313,800		2,760,300	2,711,200	2,763,100
	Federal Minerals	0	547,060	694,780		523,560	551,300	560,750
	Total	**0**	**3,328,760**	**4,008,580**		**3,283,860**	**3,262,500**	**3,323,850**
General Habitat Management Areas (GHMA)	Federal Surface	0	532,100	0		553,500	650,680	583,000
	Federal Minerals	0	147,720	0		171,220	155,200	144,500
	Total	**0**	**679,820**	**0**		**724,720**	**805,880**	**727,500**
Priority Areas for Conservation (PAC)	PHMA within PACs	0	3,084,150	3,177,980		3,100,660	3,237,700	3,279,300
	GHMA within PACS	0	93,990	0		77,200	6,400	18,100
	PHMA outside of PAC	0	244,610	830,600		183,200	24,800	70,500
	GHMA outside of PAC	0	585,830	0		647,520	799,480	724,900
Livestock Grazing								
				Alt C1	**Alt C2**			
AUMs Available	BLM-administered Lands	329,521	329,521	0	197,713	329,521	329,521	329,521
	National Forest System Lands	265,373	265,373	0	159,224	265,373	265,373	265,373
Acres Unavailable for Livestock Grazing		27,459	27,459	3,313,800	27,459	27,459	27,459	27,459
Travel Management								
Area Designations**	Open	797,000	34,600	0		0	351,700	525
	Limited to Existing	437,400	1,213,500	1,016,700		1,249,500	888,000	1,274,700
	Limited to Designated	1,217,700	1,217,700	927,000		1,217,700	1,217,700	1,220,500
	Closed	32,200	32,200	555,700		32,200	32,200	33,200
Lands and Realty								
Utility Corridors	Designated Corridors to be Retained	177,700	130,200	0		89,400	177,700	25,100
	Designated Corridors to be Undesignated	0	47,500	177,700		39,700	0	33,200
	Designated Corridors to be Stipulated as Underground Use Only	0	0	0		48,400	0	44,400
	New Designated Corridors	0	0	0		31,700	0	0

Table 2.3
Comparative Summary of Allocation Decisions of the Proposed Plan Amendments and Draft Alternatives

Decision			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Proposed Plans*
Land Tenure Adjustments	Available for FLPMA Section 203 Sale		24,400	5,490	0	5,540	24,400	0
Avoidance and Exclusions	All New ROWs	No Restrictions	3,219,000	0	0	N/A	632,200	594,400
		Avoidance	67,200	529,600	0	N/A	2,654,000	2,764,800
		Excluded	27,600	2,784,200	3,313,800	N/A	27,600	28,100
	Above-Ground Linear	No Restrictions	N/A	N/A	N/A	522,600	N/A	N/A
		Avoidance	N/A	N/A	N/A	1,368,900	N/A	N/A
		Excluded	N/A	N/A	N/A	1,422,300	N/A	N/A
	Surface and Underground Linear	No Restrictions	N/A	N/A	N/A	532,000	N/A	N/A
		Avoidance	N/A	N/A	N/A	2,754,200	N/A	N/A
		Excluded	N/A	N/A	N/A	27,600	N/A	N/A
	Site Types	No Restrictions	N/A	N/A	N/A	531,900	N/A	N/A
		Avoidance	N/A	N/A	N/A	2,562,000	N/A	N/A
		Excluded	N/A	N/A	N/A	219,900	N/A	N/A
	Wind Development	No Restrictions	N/A	N/A	N/A	522,500	N/A	565,200
		Avoidance	N/A	N/A	N/A	9,400	N/A	25,000
		Excluded	N/A	N/A	N/A	2,781,900	N/A	2,797,100
Mineral Resources								
Fluid Mineral Leasing Categories	Open		1,333,380	246,680	0	0	247,200	238,700
	CSU/TL		1,300,400	255,900	0	1,829,980	2,637,580	321,900
	NSO		483,500	24,400	0	1,853,100	688,100	3,258,300
	Closed		138,500	3,341,300	3,821,580	138,500	138,500	138,500
	No Fluid Minerals Allocation***		187,000	187,000	187,000	187,000	187,000	43,800
	Planning Decision not Mapped****		565,800	96,900	0	0	110,200	89,600
Closed to Nonenergy Solid Leasable Minerals	Surface Mining		0	0	0	3,164,400	0	0
	All Leasing		138,500	3,341,300	4,008,580	138,500	138,500	3,370,000
Coal	Unsuitable for Surface Mining		0	3,328,760	4,008,580	0	0	0
	Unacceptable for Leasing		22,900	22,900	22,900	22,900	22,900	22,900

Table 2.3
Comparative Summary of Allocation Decisions of the Proposed Plan Amendments and Draft Alternatives

Decision		Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Proposed Plans*
Closed Mineral Materials Disposal	Commercial	0	0	0	2,967,500	0	0
	Commercial and Non-commercial	73,500	3,340,000	4,008,580	352,800	73,500	3,340,200
Recommended Locatable Mineral Withdrawals		498,700	3,650,900	4,008,580	498,700	498,700	727,200
Special Designations							
New BLM ACECs		0	0	1,834,200	0	0	0
New Forest Service Zoological Areas		0	0	399,600	0	0	0

N/A = Not applicable. Under Alternative A, B, C, and E, ROW avoidance and exclusion decisions would apply to all ROW types (e.g., above ground linear and site types). Under Alternative D, certain types of ROWs would be allowed in GRSG habitat with restrictions, other types would be prohibited.
* The 41,200 acres of National Forest System lands in the Anthro Mountain area in the Carbon Population Area would be managed as neither PHMA nor GHMA. These areas would be identified as "Occupied – Anthro Mountain."
** Forest Service: The Forest Service does not use similar OHV management categories. OHV use on 858,400 acres of National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.
*** No fluid minerals allocation applies primarily to National Forest System lands. These are areas where the Forest Service has not made allocation level decisions for fluid minerals in a land use planning process. Typically, these areas have low or no known oil and gas development potential. These areas also frequently overlap specially designated areas (e.g., Flaming George National Recreation Area and designated wilderness areas) The Forest Service will not be making allocation decision for these areas through this LUPA/EIS process. Prior to making leasing decisions in these areas the Forest Service would be required to take into consideration the compatibility of fluid minerals development with other resource goals and objectives (e.g., recreation). Through this LUPA/EIS process the Forest Service will identify the minimum protection measures that would be required in these areas based on GRSG concerns.
**** These areas are located on both BLM-administered and National Forest System lands, but primarily on BLM-administered lands where a leasing decision has been made, but that decision has not been mapped. This commonly occurs in areas where there is federal minerals and non-federal surface (split-estate). As part of this LUPA/EIS, in GRSG habitat, the BLM and Forest Service may be changing leasing decisions and will be mapping leasing decisions in these areas.

2.10 Detailed Description of Draft Alternatives

2.10.1 How to Read Table 2.4

The following describes how **Table 2.4**, below, is written and formatted to show the land use plan decisions proposed for each alternative.

In accordance with Appendix C of the BLM's *Land Use Planning Handbook* (H-1601-1), land use plan and plan amendment decisions are broad-scale decisions that guide future land management actions and subsequent site-specific implementation decisions. Land use plan decisions fall into two categories, which establish the base structure for desired outcomes (goals and objectives), and allowable uses and actions to achieve 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 timeframes for achievement, as appropriate.
- Allowable uses identify uses, or allocations, that are allowable, restricted, or prohibited on BLM-administered lands and mineral estate.
- Actions identify measures or criteria to achieve desired objectives, including actions to maintain, restore, or improve land health.

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 A," for example.

In some cells, "No Similar Action" is used to indicate 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.

References to appendices in **Table 2.4** are those in the Draft LUPA/EIS available at http://www.blm.gov/ut/st/en/prog/planning/SG_RMP_rev/deis.html.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Special Status Species – Greater Sage-Grouse (GRSG)					
GOAL:					
With exception of the Uinta LRMP, goals have not been developed specifically for GRSG. However, all LUPs include a goal to work with partners to protect, maintain, and enhance habitat for special status species.	Maintain and/or increase GRSG abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners.	Maintain and increase current GRSG abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem.	Maintain and/or increase abundance and distribution of GRSG by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend, in collaboration with other conservation partners.	Protect, maintain, improve and enhance GRSG populations and habitats within the State of Utah established SGMAs.	Conserve, recover, and enhance GRSG habitat on a landscape scale consistent with local, state, and federal management plans and policies, as practical, while providing for multiple use of BLM-administered and National Forest System lands. Maintain and/or increase GRSG abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in cooperation with other state, local, industry, permittee and conservation partners.
Objectives:					
In general, older plans do not include objectives specific to GRSG. More recent plans (those completed after 2000) may include an objective to advance conservation of the GRSG and GRSG habitat, although a mechanism for achieving GRSG specific objectives is infrequently	Designate PHMA for each WAFWA MZ 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. GRSG habitat in Utah overlaps 4 WAFWA MZs:	Establish a system of sagebrush reserves to anchor recovery efforts by protecting the highest quality habitats.	Identify and protect PHMA from anthropogenic and natural disturbances that will reduce distribution or abundance of GRSG.	Protect habitat which provides for the year-round life-cycle needs of the GRSG. Sustain the best-of-the-best existing GRSG populations. Perpetuate conditions necessary to ensure recruitment of a continuing population within the aggregate	Identify and prioritize opportunities for habitat enhancement and conservation within core areas based on threats and the ability to manage GRSG habitat.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
identified.	• MZ II – Wyoming Basins • MZ III – Southern Great Basin • MZ IV – Snake River Plain • MZ VII – Colorado Plateau Protect PHMA from anthropogenic disturbances that will reduce distribution or abundance of GRSG.			state population. Enhance or improve GRSG habitat that has been impaired or altered through restoration or rehabilitation activities. Eliminate the threats facing the GRSG while balancing the economic and social needs of the residents of Utah. Sustain the best-of-the-best existing GRSG populations and increase populations through habitat restoration and rehabilitation.	
Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy, and recommendations from local GRSG working groups, to protect, maintain, enhance, and restore GRSG populations and habitat. A few plans including more detailed habitat objectives that	To maintain or increase current populations of GRSG, manage or restore PHMA so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet GRSG needs.	Restore and maintain sagebrush steppe to its ecological potential in GRSG habitat.	Manage or restore PHMA so that at least 50 percent of the landscape (mapped occupied habitat within a population area) provides sagebrush cover to meet GRSG needs. Within PHMA where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ESD – or comparable Forest Service methods, maintain or restore vegetation to provide habitat for	Enhance an average of 25,000 acres of GRSG habitat in SGMAs annually. Increase the total amount of GRSG habitat acreage within and adjacent to SGMAs by an average of 50,000 acres per year, through management actions targeting Opportunity Areas.	Restore native (or desirable) plants and create landscape patterns which most benefit GRSG. Write specific LUP objectives for vegetation that connects habitats and creates patterns that benefit GRSG. Write specific vegetation management objectives relative to invasive annual grass spread and woody plant removal where these are of concern in GRSG habitat. Consider management objectives in buffers around intact core

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
include land cover.			lekking, nesting, brood rearing, winter, and transition areas. Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.		areas that detect and rapidly respond to invasions in the buffer zones. Establish measurable objectives related to GRSG habitat from baseline monitoring data, ESDs (or comparable Forest Service methods), or land health assessments/evaluations. Incorporate available site information collected using the GRSG Habitat Assessment Framework or similar methods to evaluate existing resource conditions and to develop any necessary resource solutions. Incorporate management practices that will provide for maintenance and/or enhancement of GRSG habitats, including specific attention to maintenance of desired understories of sagebrush plant communities. When developing objectives for residual cover and species diversity, identify the ecological site types within the planning area and refer to the

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					appropriate ESDs) (Forest Service may use other methods).
No similar action.	No similar action.	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 harvestable surplus.	No similar action.	Sustain an average male lek count of 4,100 males (based on a 10-year rolling average on a minimum of 200 monitored leks) in the SGMAs, and increase the population of males to an average of 5,000 (based on the same 10-year rolling average on a minimum of 200 monitored leks) within the SGMAs. Maintain viable populations within each SGMA. Ensure a path for birds to migrate within SGMAs on a seasonal basis, and ensure a long-term genetic connection between populations as needed. Should the population trends within a population area temporarily or permanently suffer from the effects of factors such as wildfire, management controls in the other SGMAs will be adjusted to achieve the other objectives listed above.	Enhance quality/suitable habitat to support the expansion of GRSG populations on federally-administered lands within the planning areas. Manage GRSG seasonal habitats and maintain habitat connectivity to support population objectives set by the WGFD.
Under current management, there are no designated	Quantify and delineate GHMA for capability to provide	No similar action because all mapped occupied habitat would	Delineate and manage mapped occupied GRSG habitat outside	GRSG habitat outside SGMAs would not be managed for the	No similar action.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
GHMA.	connectivity among and between PHMA.	be PHMA	PHMA as GHMA.	conservation of the species. No specific management actions are provided for this habitat.	
All LUPs include a general commitment to coordinate management actions with state and local governments and non-governmental organizations.	No similar action.	No similar action.	Participate in local GRSG conservation efforts (e.g., UDWR, NRCS, local working groups) to implement landscape-scale habitat conservation, to implement consistent management to benefit GRSG, and to gather and use local research and monitoring to promote the conservation of GRSG.	The State of Utah will coordinate the efforts of BLM, Forest Service, USFWS, state agencies, local government, and others to accomplish the purposes of this Plan. The State will convene a Working Group with membership including the Dept. of Natural Resources, Dept. of Agriculture and Food, State Institutional Trust Lands Administration, BLM, Forest Service, NRCS, USFWS, and others as needed. The Working Group will meet as often as needed to coordinate the implementation of the State Sage-Grouse Plan (included in this alternative). The Working Group will initiate and coordinate the efforts of necessary technical teams to assure scientific and monitoring information is shared by all management agencies, and that efforts to achieve the necessary conservation goals are progressing.	In cooperation with local GRSG working groups, partners and stakeholders, develop site-specific conservation strategies to maintain or enhance GRSG habitats and habitat connectivity. Continue to support the development of statewide GRSG seasonal habitat models for the State of Wyoming. Utilize Local Working Group plans, analyses, and other sources of information to guide development of conservation objectives for local management of GRSG habitats.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Management Actions (BLM/Forest Service managed lands):

Alternative A

Acreage of mapped occupied GRSG habitat is as follows:

Population Area	Acres of BLM/ Forest Service Surface Estate
Uintah	642,600
Carbon	174,800
Emery	87,700
Parker Mountain	531,800
Panguitch	221,600
Bald Hills	267,500
Hamlin Valley	101,000
Sheeprocks	515,900
Ibapah	57,100
Box Elder	413,100
Rich	181,400
Lucerne	2,300
Strawberry	40,200
WY-Uinta	22,000
WY-Blacks Fork	54,800
Statewide	3,313,800

Under current management, there are no designated PHMA or GHMA.

Alternative B

Identify PHMA and GHMA as follows (Map 2.1):

Population Area	Acres	
	PHMA	GHMA
Uintah	348,400	294,200
Carbon	128,200	46,600
Emery	81,500	6,200
Parker Mountain	524,800	7,000
Panguitch	221,600	0
Bald Hills	256,800	10,700
Hamlin Valley	101,000	0
Sheeprocks	463,100	52,800
Ibapah	47,000	10,100
Box Elder	364,100	49,000
Rich	180,200	1,200
Lucerne	0	2,300
Strawberry	40,200	0
WY-Uinta	1,100	20,900
WY-Blacks Fork	23,700	31,100
Statewide	2,781,700	532,100
% Occupied	84%	16%

Alternative C

Identify PHMA and GHMA as follows (Map 2.2):

Population Area	Acres	
	PHMA	GHMA
Uintah	642,600	0
Carbon	174,800	0
Emery	87,700	0
Parker Mountain	531,800	0
Panguitch	221,600	0
Bald Hills	267,500	0
Hamlin Valley	101,000	0
Sheeprocks	515,900	0
Ibapah	57,100	0
Box Elder	413,100	0
Rich	181,400	0
Lucerne	2,300	0
Strawberry	40,200	0
WY-Uinta	22,000	0
WY-Blacks Fork	54,800	0
Statewide	3,313,800	0
% Occupied	100%	0%

Alternative D

Identify PHMA and GHMA as follows (Map 2.3):

Population Area	Acres	
	PHMA	GHMA
Uintah	348,400	294,200
Carbon	136,200	38,600
Emery	81,500	6,200
Parker Mountain	524,800	7,000
Panguitch	198,100	23,500
Bald Hills	256,800	10,700
Hamlin Valley	101,000	0
Sheeprocks	409,200	106,700
Ibapah	47,000	10,100
Box Elder	412,100	1,000
Rich	180,200	1,200
Lucerne	0	2,300
Strawberry	40,200	0
WY-Uinta	1,100	20,900
WY-Blacks Fork	23,700	31,100
Statewide	2,760,300	553,500
% Occupied	83%	17%

Alternative E1

Alternative E2

Identify GRSG habitat within SGMAs and core areas, as well as GRSG habitat outside SGMAs and non-core areas, as follows (Map 2.4 and Map 2.5):

Population Area	Acres	
	SGMA/ Core	Non-SGMA/ Noncore
Uintah	340,800	301,800
Carbon	27,700	147,100
Emery (SGMA merged with Parker)	80,600	7,100
Parker Mountain (SGMA merged with Emery)	520,700	8,480
Panguitch	221,600	0
Bald Hills	265,400	2,000
Hamlin Valley	101,000	0
Sheeprocks	417,700	109,500
Ibapah	48,000	10,100
Box Elder	439,200	5,800
Rich	183,000	4,500
Lucerne (Utah does not include)	0	2,300
Strawberry	40,700	0
WY-Uinta (E2 only)	1,100	20,900
WY-Blacks Fork (E2 only)	23,700	31,100
Statewide	2,711,200	650,680
% Occupied	82%	20%

Note: Though the State of Utah and BLM began their processes with GRSG occupied habitat data from March 27, 2012, over the course of the State's process developing their SGMAs, several modifications were

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				made to the occupied habitat boundaries. Though the BLM was provided various versions of the SGMA data, the changes to occupied habitat were not provided for use in this process. As a result, the combined acres of PHMA and GHMA for Alternatives B, C and D (which is the occupied habitat used throughout this EIS) differ from the combined acres of habitat within SGMAs and habitat outside SGMAs for Alternative E1.	
No similar action.	No similar action.	No similar action.	Within the mapped PHMA and GHMA there may be areas that lack the principle habitat components necessary for GRSG, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, or towns. These areas of non-habitat would be identified during site-specific project review by agency biologists, in discussion with the State of Utah and other agencies, as appropriate. Decisions associated with PHMA or GHMA would apply to areas with or ecologically capable of supporting GRSG habitat. The decisions may be excepted if it can be shown that the action would occur in a non-habitat area and the following conditions are met: • access through GRSG habitat to the activity in the non-	Non-habitat areas within the SGMA include lands that do not contribute to the annual life-cycle of GRSG. Effort has been made to minimize the amount of non-habitat within the SGMAs, but given the topographic, physiographic and land cover features within Utah and the scale and detail of mapping, the inclusion of some non-habitat was unavoidable. No specific management provisions are proposed for non-habitat areas within the SGMAs, except to consider noise and permanent structure stipulations around a lek, and to note that, birds may fly over the non-habitat as they connect to other populations or seasonal habitat areas. (Corridors may or may not be	As new occupied GRSG habitat is found or occurs either through additional inventories or expansion into previously un-occupied habitat, the agencies will incorporate these areas into the non-core category and manage them as such, until the earliest review occurs by the SGIT. At that time they will be considered for core status or will continue to be managed as non-core, and will be added to the statewide map at that time. Include the collection of baseline data and outline post-project monitoring components into the project planning. Contribute to actions that help to ground-truth the statewide

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			habitat area occurs only on existing routes, and no new roads, maintenance, or improvements to roads would be required within GRSG habitat, • no activity would be permitted or authorized if it would establish a valid existing right that would subsequently require construction of new routes within GRSG habitat for access, • access to the activity for construction, maintenance, etc. would be required to avoid applicable GRSG sensitive seasons (i.e., breeding, brood-rearing, winter) and time periods (2-hours before sunrise to 2-hours after sunrise near leks during breeding season), • the non-habitat does not provide important connectivity between habitats, • impacts on areas adjacent to PHMA can be reduced or eliminated (e.g., sound, tall structures). Proposed projects within	included as habitat within the population area, depending on local conditions, topography, and other factors. Corridors are important to GRSG, but may not require restrictions on human activity. As a general rule, it will be adequate to avoid removal of sagebrush and to minimize development that would create a physical barrier to GRSG movement in these areas.) SGMAs should be reviewed annually through the coordination efforts of the Public Lands Policy Coordination Office. Review should include, for example, changes in the distribution of disturbance, the increases in habitat through enhancement or improvement, decreases in habitat through wildfire or other events, status of population numbers, and related items. Adjustments to SGMAs will be reviewed every 5 years, unless large-scale events such as wildfire, and successful annual events, such	GRSG seasonal habitat models for the State of Wyoming. The official Wyoming GRSG lek database is maintained by the WGFD in accordance with Appendix 4B of the Umbrella Memorandum of Understanding between the WGFD and BLM (WGFD and BLM 1990). The action agencies will meet at least annually to coordinate and review the accuracy of data and incorporate the most up-to-date information. Ensure site-specific, measurable, conservation and mitigation objectives are included in project planning within GRSG habitats.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			population areas will consider impacts on GRSG and potential mitigation measures when preparing site-specific planning and environmental compliance documents. <u>Additional Sage-Grouse Habitat</u> Outside of mapped occupied habitat, prior to site-specific authorizations, the BLM or Forest Service would evaluate habitat conditions and may require surveys to determine if the project area contains GRSG habitat (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Surveys would be required prior to authorizing discrete anthropogenic disturbances within 4 miles of an occupied lek that is located in PHMA, but only in areas that ecologically could provide GRSG habitat. If an area is determined to contribute to the GRSG life-cycle, mitigation will be considered as part of the project level NEPA analysis (BLM Manual 6840 .04 D 5). Measures that	as habitat enhancement or improvement, necessitate a more frequent adjustment. Adjustments may include expansion or constriction of the external boundaries and a redrawing of the internal boundaries among habitat, non-habitat and opportunity areas.	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			may be considered include those identified in Appendices H, I, J, K, or L of the Draft LUPA/EIS. On National Forest System lands these areas will be analyzed at the site-specific level and will be covered in the specialist report and Biological Evaluation. Changes to maps and associated acreages would occur through the appropriate BLM and Forest Service planning processes (e.g., plan maintenance, simple plan amendments, etc.).		
Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy, and recommendations from local GRSG working groups, to protect, maintain, enhance, and restore GRSG populations and habitat. A few plans (e.g., Vernal RMP, Uinta LRMP) including more detailed habitat objectives such as desired seral sage, percent canopy cover, or height.	Develop quantifiable habitat and population objectives with WAFWA and other conservation partners at the MZ 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.	No similar action.	Increase the amount and functionality of seasonal habitats within PHMA: • Maintain or increase canopy cover and average patch size of sagebrush in perennial grasslands unless there's conflict with other special status species (e.g., Utah prairie dog and black footed ferrets). • Maintain or increase the amount, condition and connectivity of seasonal habitats within, and where applicable, between population areas. • Protect and improve GRSG	Enhance an average of 25,000 acres of GRSG habitat in SGMAs annually. Increase GRSG habitat acreage within and adjacent to SGMAs by an average of 50,000 acres per year, through management actions targeting Opportunity Areas. Manage activities within SGMAs based on a hierarchical protocol that provides as follows: 1. Avoidance of disturbance to habitat or birds by an activity is the preferred option;	Work with project proponents, partners, and stakeholders to avoid or minimize impacts and/or implement direct mitigation (e.g. relocating disturbance, timing restrictions, etc.), and utilize BMPs and off-site compensatory mitigation where appropriate (Greater Sage-Grouse Wyoming Executive Orders 2011-05 and 2013-03 and BLM IM WY-2010-012, Policy Statement 3, page 7). The Forest Service will coordinate new

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Other than the abovementioned decision, and basic planning allocations, management actions specific to GRSG are not present in most LUPs.			migration/ movement corridors. • Reduce conifer encroachment within PHMA. • Maintain or improve understory (grass, forb) and/or riparian condition within breeding and late brood-rearing habitats. • Reduce the extent of annual grasslands adjacent to PHMA where objectives are not being met.	2. Minimization of the disturbance is desired if the disturbance cannot be avoided in greater GRSG habitat, with mitigation for the effects of the minimization decisions; and finally 3. Mitigation of the disturbance from an activity within GRSG habitat is required if a disturbance cannot be avoided. Manage areas identified as SGMAs to avoid surface disturbance to the greatest degree possible. Coordinate with the UDWR when land use which may result in a disturbance is contemplated. All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The GRSG conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect	recommendations, mitigation, and conservation measures applied for GRSG with the WGFD and other appropriate agencies. These measures will be analyzed in site-specific NEPA documents, as necessary. Where applicable and technically feasible, apply BMPs as mandatory COAs within core GRSG habitat for Fluid Minerals, travel management, Lands and Realty, Range Management, Wild Horse and Burro, Solid Minerals-Coal, Locatable Minerals, West Nile, mineral materials, nonenergy solid leasables, Vegetation Management, Fire and Fuels Management, and Noise. Use the GRSG Habitat Assessment Framework or best available assessment tool (approved by the Responsible Official) when assessing or evaluating GRSG habitats at multiple scales. Ranger District staff will work

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				GRSG and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	with project proponents (including those within Forest Service) to site their projects in locations that meet the purpose and need for their project, but have been determined to contain the least sensitive habitats whether inside or outside of core areas. Forest Service district offices, in coordination with WGFD and other partners, will establish monitoring protocols for GRSG populations and habitat that will be incorporated into individual project approvals as appropriate and necessary. Small or in-house projects within core areas will also have a monitoring plan for GRSG incorporated in the approval document.
No similar action.	Manage PHMA so that discrete anthropogenic disturbances (whether temporary or permanent) cover less than 3 percent of the total GRSG habitat regardless of ownership. Anthropogenic features include but are not limited to paved	Limit discrete surface disturbance (whether temporary or permanent) in occupied GRSG habitat to one instance per section regardless of ownership, with no more than 3 percent surface disturbance (or, where stipulated, implement the	Protect PHMA from fragmentation by anthropogenic disturbances (whether temporary or permanent) that will reduce distribution or abundance of GRSG by managing PHMA so that discrete anthropogenic disturbances cover less than 5	The provisions of this alternative include, under certain circumstances, a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMA. The	Inside core areas the density and disturbance goals include: • The Forest Service will consider and evaluate measures that limit or reduce the density of oil and gas or mining activities to no more than an average of 1

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines. • In PHMA where the 3 percent disturbance threshold is already exceeded from any source, no further anthropogenic disturbances will be permitted by the BLM or the 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 PHMA to prioritize and reclaim/restore anthropogenic disturbances so that 3 percent or less of the total PHMA area is disturbed within 10 years.	disturbance cap prescribed in the applicable state conservation plan, whichever is more protective). The 3 percent cap includes existing and all new initial disturbance to the landscape, interim mitigation and restoration efforts notwithstanding. Discrete disturbances include but are not limited to highways, roads, transmission lines, substations, wind turbines, oil and gas wells, heavily grazed areas, range developments, severely burned areas, pipelines, landfills, mines, fences (with a 100 foot buffer, each side), and water developments (with a 1,000 foot radius buffer), and vegetation treatment that reduces sagebrush cover. As additional research on the 3 percent cap becomes available, revise this prescription, as necessary, to conserve GRSG. For an area to no longer be considered disturbed under the 3 percent cap, disturbances need to be restored/reclaimed, where technically and legally feasible (e.g., valid existing	percent of the area within the PHMA used by a population of GRSG, regardless of ownership. While the BLM and Forest Service do not have any regulatory authority to influence the amount of disturbance that will occur on state or private land, when determining whether development is appropriate on federal lands, disturbances on private and state lands will count towards the 5 percent disturbance cap. When considering implementation-level actions, the 5 percent disturbance calculation would include all discrete anthropogenic disturbances within a biologically based disturbance calculation area, which must be contained within the PHMA of a GRSG population area. The disturbance calculation area would be identified during the site-specific project planning/NEPA phase, but the following would be taken into account when determining what would be included/excluded: • Existing developed agriculture	fundamental purpose of this provision is to limit the effects of a large amount of disturbance to the existing habitat or activities of the GRSG. The cumulative calculation of permanent disturbance in any population area, and specific habitats within a population area, is the aggregate of the various project, land use, or natural event disturbances, as modified by the effects of rehabilitation, restoration or other mitigation actions. Many of the SGMAs extend into two or more counties. In such cases, the 5 percent limitation shall be apportioned to each county in proportion to the total amount of habitat within the larger area. Because of the highly discontinuous nature of GRSG habitat in Utah, each of the SGMAs is a composite of habitat, non-habitat and opportunity areas. In many cases, it may be difficult to	location per 640 acres across the Density Disturbance Calculation Tool; and to limit all surface disturbance (any program area) to no more than 5 percent of the core area landscape using the Density Disturbance Calculation Tool.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		rights, split estate lands). The objective of long-term restoration/reclamation is to make areas with disturbance useable by GRSG. For long-term restoration of PHMA with discrete surface disturbances to be considered successful, GRSG must be documented to have used the area.	lands should generally be excluded. • Areas in PHMA that have burned but have not recovered to the extent of being able to provide habitat for GRSG should generally be excluded from the baseline disturbance calculation area for which the 5 percent is calculated (though the burned areas are still part of the PHMA), unless the proposed disturbance is within the burned area. (For example, a potential disturbance calculation area is 2,000 acres and does not have any existing disturbance, thereby allowing up to 100 acres of total disturbance. If 1,000 acres of the area burns, the calculation area should be adjusted to exclude the 1,000 burned acres, reducing potential disturbance in the remaining area to 50 acres. If the proposed disturbance is within the burned area, the calculation area should include the entire 2,000 acres, but the disturbance would still be limited to 50 acres.) However,	discern whether an existing dispersed use is part of habitat or non-habitat, and thereby make an accurate calculation of the base for the limitation calculation difficult to determine. As part of the implementation of this alternative, such issues should be brought to the interagency review effort coordinated by the Public Lands Policy Coordination Office to insure consistency in interpretation throughout the state. In addition, if it should become sufficiently apparent that an accurate determination of the base for the limitation calculation is not feasible, then the interagency coordination effort may propose and seek approval for an alternative measurement of, or technique to measure, the cumulative effects of disturbance. The area of permanent disturbance is the area within a spatial polygon defined by the outside limits of the actual disturbed area, plus the area	

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			just because the burned area could be excluded from the disturbance calculation area, any existing disturbances within the burned areas would still be counted against the disturbance cap of the revised disturbance calculation area. • Developed private lands that are no longer used by GRSG (e.g., towns, airports, reservoirs) would be excluded. However, other dispersed disturbances would be considered disturbance (e.g., cabins, access roads, community pits, etc.). Discrete disturbances should be consolidated and localized as much as possible, though total areas with discrete disturbances cannot exceed 5 percent in the identified disturbance calculation area. This could result in small areas where existing and proposed disturbances exceed 5 percent if total disturbances in the identified disturbance calculation area equals or is less than 5 percent.	outside of this polygon where effects of the project, based on the type of project, could be expected to cause a disturbance to GRSG. Allowances must be made to include the temporal effects of any temporary disturbance, if any such effects are expected. The calculation of the spatial extent of each proposed project or land use, or the area of a natural event, such as wildfire, to be employed in this calculation, is defined as part of the definition of disturbance. The base upon which this calculation is made may be increased through successful rehabilitation or restoration of habitat, or other mitigation actions as appropriate.	

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			Anthropogenic features include but are not limited to paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines. In PHMA where the 5 percent disturbance threshold is already exceeded from any source, no further discrete anthropogenic disturbances will be permitted by the BLM or the Forest Service until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). In these areas, reclaim and/or restore discrete anthropogenic disturbances, where technically and legally feasible, so that 5 percent or less of the disturbance calculation area is disturbed. <u>Restoration/Reclamation of Surface Disturbances:</u> An area with surface disturbance is not excluded from the 5 percent until it has been successfully reclaimed (short-		<u>Restoration/Reclamation of Surface Disturbances:</u> Reclamation of surface disturbances in GRSG habitats will be in accordance with the Wyoming Reclamation Policy

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			term) and restored (long-term). The objective of long-term restoration/reclamation in PHMA is to provide for the needs of GRSG. Providing habitat could include, but is not limited to restoring landforms and vegetative communities to reflect the potential for the given ecological site, as well as restoring hydrologic systems and other wildlife habitat components. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for soil site stability, hydrologic function, and integrity of the biotic communities. Specific restoration/reclamation objectives will be identified through the NEPA process, but for final restoration/reclamation to be judged successful within PHMA, all the following objectives must be met: • Areas where the landform has been altered (e.g., well pads, production facilities, roads, pipelines, utility corridors, etc.) have been re-contoured to		and Forest Service Reclamation policy.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			blend in with adjacent undisturbed areas, approximating the original landform. • A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and invasive plants (e.g., cheatgrass, non-native thistles, knapweeds) and can reestablish wildlife habitat and/or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation. Permanent vegetative cover will be determined successful when the percent cover of desirable perennial species is consistent with GRSG habitat objectives and the ESD (or comparable Forest Service methods). Monitoring for restoration must extend for a reasonable time frame, considering ecological site potential and environmental conditions (e.g.,		

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			drought). Plants must be resilient as evidenced by well-developed root systems and flowers; shrubs must be well established and not comprised mainly of seedlings that may not survive until the following year. • Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rilling (greater than 3 inches) is not observed. • The site is free of State- or county-listed noxious weeds, anthropogenic debris and equipment, and contaminated soil. [Exception of site-specific requirement: Given that some weeds, such as cheatgrass, are common in portions of the planning area, it may not be possible to totally eliminate invasive species from the reclaimed area.] • Final reclamation success and approval for abandonment for disturbances caused by		

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			permitted activities will be subject to an interdisciplinary review of available monitoring data and final monitoring reports. Monitoring teams must consist of, at a minimum, a wildlife biologist, a rangeland management specialist, and another resource specialist (e.g., natural resources specialist) will evaluate the monitoring plan (from the NEPA or POD documents), and review the regular and final monitoring reports and provide the Authorized Officer with a recommendation as to whether or not objectives have been met. For non-permitted activities (e.g., reclamation of user created roads), successful restoration/reclamation occurs when the area meets the four criteria noted above, as determined by an interdisciplinary review of inventory/monitoring information.		
Most LUPs include a management action that prohibits surface disturbing or other disruptive within GRSG	No similar action.	No similar action.	Do not allow discrete anthropogenic disturbances or activities disruptive to GRSG (including scheduled maintenance	Within SGMAs in seasonal GRSG habitats during the corresponding seasonal use periods, avoid activities	<u>Leks – core habitat</u> • Permanent surface occupancy and surface disturbing activities would be

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.5 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.			activities) within PHMA in seasonal GRSG habitats during the corresponding seasonal use periods, current authorized uses excepted: • In breeding and nesting habitat from Feb 15 – Jun 15 • In brood rearing habitat from Apr 15 – Jul 15 • In winter habitat from Nov 15 – Mar15 In addition, the following use requirements would be applied to discretionary activities within PHMA, as applicable: • the activity meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from 2 hours before to 2 hours after sunrise and sunset during breeding season); • the activity meets permanent (structure persists through subsequent breeding season) tall structure restrictions (a tall structure is any man-made structure that has the potential to disrupt lekking or nesting birds by creating new perching/nesting opportunities	(construction, vehicle noise, etc.) that will disturb GRSG use of the seasonal area by employing seasonal stipulations as follows: • In leks (for lek attendance or breeding) from Feb 15 – May 15. • In nesting or brood-rearing areas from Apr 1 – Aug 15. • In winter habitat from Nov 15 – Mar 15. Specific time and distance determinations for all these seasonal stipulations would be based on site-specific conditions for all these seasonal stipulations, in coordination with the local UDWR biologist. In addition, the following management provisions would be applied to the applicable areas within GRSG habitat in SGMAs (Map 2.4): <u>Leks</u> • Avoid disturbance within this area, if possible. Project proponents must	prohibited on or within a six tenths (0.6) mile radius of the perimeter of occupied GRSG leks. • Temporary disruptive activity is restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied GRSG leks from March 15 – June 30. • Noise levels at the 0.6 mile perimeter of the lek, should not exceed 10 decibels above ambient noise from 6:00 pm to 8:00 am from March 15 – June 30. <u>Nesting/Early Brood-Rearing Habitat – core habitat</u> • Surface disturbing and/or disruptive activities are prohibited from March 15–June 30 within core areas regardless of distance from a lek and the suitability of the habitat. • Where credible data support different timeframes for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be determined based on local conditions such as vegetation or topography); and • environmental compliance documents associated with the activity analyze limitations to habitat fragmentation. Exceptions to the seasonal restrictions could be granted by the Authorized Officer under the following conditions: • if surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed activity will not result in a permanent disturbance and will not take place beyond the season being excepted; • if surveys determine that the lek is no longer occupied, and the proposed activity will not take place beyond the season being excepted; • if the project plan and NEPA document demonstrate the project would not impair the	demonstrate why avoidance is not possible. • If avoidance is not possible, use minimization as appropriate to the area. • If minimization is not sufficient, mitigation is required (see mitigation section). • New permanent disturbance, including structures, fences, and buildings, should not be located within the lek itself. • No permanent disturbance within 1 mile of the lek, unless it is not visible to the GRSG using the lek. • Fences should not be located on or adjacent to leks where bird collisions would be expected to occur. If required, the construction of any fences near the lek should follow the standards identified in the NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes"). • A disturbance outside the lek	dates. <u>Winter Concentration Areas</u> • Surface disturbing and/or disruptive activities in GRSG winter concentration areas are prohibited from December 1–March 14 to protect core populations of GRSG that use these winter concentration habitats (independent of habitat suitability). Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of GRSG that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability).

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			function of seasonal habitat, life-history, or behavioral needs of GRSG; • if the potential short-term impacts from vegetation treatment are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedings, juniper reduction). Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions: • if portions of the area do not include habitat (lacking the principle habitat components of GRSG habitat) or are outside the defined area, as determined by the BLM and Forest Service in discussion with the State of Utah, and indirect impacts would be mitigated; • if documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect	should not produce noise which rises more than 10 decibels above the background level at the edge of the lek during breeding season. • Implement time-of-day stipulations during the season when the lek is occupied (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise). <u>Nesting and Brood-Rearing Areas</u> • Avoid disturbance within these areas, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, use minimization as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic features to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation to provide food	<u>Noise</u> The Forest Service will work with proponents to limit project related noise where it would be expected to reduce functionality of habitats that support core area populations. The Forest Service will evaluate the potential for limitation of new noise sources on a case-by-case basis as appropriate. Forest Service's near-term goal is to limit noise sources that would be expected to negatively impact core area GRSG populations and to continue to support the establishment of ambient baseline noise levels for occupied core area leks. As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate limitations will be implemented where necessary to minimize potential for noise impacts on GRSG core-area population behavioral cycles.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			when GRSG use a given area, and the proposed activity will not take place beyond the season being excepted.	and shelter). • If minimization is not sufficient, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting habitat within the SGMA. • Employ noise stipulations which allow no more than 10-decibel rise above ambient noise levels at the edge of the lek. <u>Winter Habitat</u> • Avoid disturbance within the area, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, minimize as appropriate to the area. Minimization provisions include, for example, the location of development in habitat of least importance, of by locating development to take advantage of topographic screening.	As new research is completed, new specific limitations would be coordinated with the WGFD and partners.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				• If minimization is not sufficient, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of the surface area of winter habitat within the SGMA. • Manage the area to maintain maximum amount of sagebrush, especially tall sagebrush, which would be available to greater GRSG above snow during a severe winter. Tall sagebrush is capable of standing above heavier than normal snowfall. • Sagebrush treatment projects within this area need pre-approval by the appropriate regulatory agency in coordination with the UDWR. Sagebrush treatment projects within winter habitat should maintain 80 percent of the available habitat as tall sagebrush; 20 percent of the habitat can be managed for younger age classes, if appropriate.	

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				Other Habitats • Avoid disturbance in the area if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, minimize as appropriate to the area. Minimization provisions include, for example, the location of development in habitat of least importance, or by locating development to take advantage of topographic screening. • If minimization is not sufficient, mitigation is required (see mitigation section). • Mitigation must produce lands capable of supporting GRSG as habitat before the proposed disturbance occurs, though birds do not need to be using the mitigated area. The proponent of the disturbance must demonstrate that the mitigation conditions have been met. • Cumulative new permanent	

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				disturbance should not exceed 5 percent of the surface area of other habitat within the SGMA. • Manage the lands to avoid barriers to migration, if applicable.	
No similar action.	No similar action.	No similar action.	Apply standards for development activities within PHMA and GHMA to reduce opportunities for GRSG predators, such as limiting food sources (trash reduction), nesting, cover, or perches. Apply actions specific to the predators of concern for the given GRSG population (e.g., ravens, red fox, badgers, raccoons, raptors).	Eliminate or minimize external food sources for corvids, particularly dumps, waste transfer facilities, and road kill. Apply habitat management practices (e.g. grazing management, vegetation treatments) that decrease the effectiveness of predators.	The Forest Service will implement strategies and techniques in land management decisions that address predators shown to pose a threat to GRSG. The Forest Service will support and encourage other agencies in their efforts to minimize impacts from predators on GRSG where needs have been documented.
Under current management plans, there are no designated GHMA.	Conserve, enhance or restore GHMA and connectivity to promote movement and genetic diversity, with emphasis on those habitats occupied by GRSG.	No similar action.	Conserve GHMA to maintain existing habitat and maintain connectivity between populations, or if necessary, to provide for opportunities to improve PHMA. Do not allow discrete anthropogenic disturbances or activities disruptive to GRSG (including scheduled maintenance activities) within GHMA in	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>Leks – non-core habitat</u> Surface occupancy and surface disturbing activities would be prohibited or restricted on or within one- quarter (0.25) mile radius of the perimeter of occupied GRSG leks. <u>Nesting/Early Brood-Rearing Habitat – non-core habitat</u> • Surface disturbing and/or disruptive activities are

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			seasonal GRSG habitats during the corresponding seasonal use periods: • In breeding and nesting habitat from February 15 – June 15 • In brood rearing habitat from April 15 – July 15 • In winter habitat from November 15 – March 15 In addition, the following use requirements would be applied to discretionary activities within GHMA, as applicable: • the activity meets noise restrictions; • the activity meets permanent tall structure restrictions; and • environmental compliance documents associated with the activity consider how to limit habitat fragmentation. Exceptions to the seasonal restrictions could be granted Authorized Officer under the following conditions: • if surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed		limited from March 15–June 30 to protect GRSG nesting and early brood rearing habitats within 2 miles of the lek perimeter of any occupied lek located outside core areas. • Where credible data support different timeframes for this restriction, dates may be expanded by 14 days prior or subsequent to the above dates. <u>Winter Concentration Areas</u> • Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of GRSG that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			activity will not take place beyond the season being excepted; • if surveys determine that the lek is no longer occupied, and the proposed activity will not take place beyond the season being excepted; • if the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of GRSG; • if the potential short-term impacts from the action are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedings, juniper reduction). Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions: • if portions of the area do not include habitat (lacking the principle habitat components of GRSG habitat) or are outside the current defined area, as determined by the BLM and Forest Service in		areas habitats identified (independent of habitat suitability).

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			discussion with the State of Utah, and indirect impacts would be mitigated; • if documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when GRSG use a given area, and the proposed activity will not take place beyond the season being excepted. Application of the above use restrictions and meeting objectives within GHMA may be waived by the Authorized Officer if off-site mitigation is successfully completed in PHMA, following discussion with the BLM and Forest Service and the State of Utah. Even in situations where use restrictions are waived in GHMA, to avoid direct disturbance and/or mortality of birds, disturbances would not be approved during the sensitive seasons.		
No opportunity areas identified in current management plans.	Assess GHMA to determine potential to replace lost PHMA	Identify GRSG restoration habitat and prioritize areas for	Restore historical habitat to support GRSG populations to	Opportunity areas are those portions of an SGMA that	Each office will develop landscape-scale restoration/

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP. All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros. Recent plans may include management actions that purposely restore or enhance GRSG habitat.	caused by perturbations and/or disturbances and provide connectivity between PHMA. • 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. • Enhance GHMA such that population declines in one area are replaced elsewhere within the habitat.	implementation of restoration projects based on environmental variables that improve chances for project success. Restoration habitat is degraded or fragmented habitat that is currently unoccupied by GRSG, but might be useful to the species if restored to its potential natural community. Prioritize areas for restoration based on their potential importance to GRSG and the likelihood of successfully restoring sagebrush communities. Passive restoration is preferred for restoring these areas over active restoration methods.	maintain or enhance connectivity. Vegetation treatments may be applied to meet GRSG habitat objectives and provide additional GRSG habitat. Discrete anthropogenic disturbances should not be authorized in areas that have been previously treated with the intent of improving or creating new GRSG habitat.	currently do not contribute to the life cycle of GRSG but are areas where restoration or rehabilitation efforts can provide additional habitat when linked to existing GRSG populations. Opportunity areas may be transformed into either habitat or non-habitat based upon natural events or management choices, and may be used to mitigate disturbance within habitat as appropriate. Opportunity areas may be employed to meet improvement, restoration, or rehabilitation goals, or as mitigation areas for disturbance within habitat. If this occurs, an opportunity area may become habitat and be managed as such, especially as part of the calculation for disturbance limitations. Alternatively, opportunity areas may be employed as the site for disturbances which are diverted from habitat, or other economic proposals not involving habitat, and become non-habitat. In either event,	conservation strategies, including special management of seasonal habitats and connectivity zones outside of core areas, working with voluntary partners. These strategies must be coordinated and reconciled with adjoining management entities that share habitats or populations.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				boundaries of the SGMA, or the land types within, should be adjusted accordingly.	
No similar action.	No similar action.	No similar action.	The use restrictions, stipulations, seasonal constraints, etc. included for GRSG habitat are intended to be the initial and not the entirety of the protections. Project proponents and BLM and Forest Service offices should develop additional mitigation measures at the project level to address the site-specific issues and impacts associated with local effects of specific projects. The mitigation actions developed at the project level must be based on current scientific recommendations. Mitigation actions could include some or all of the following: • avoiding the impact altogether by not taking a certain action or parts of an action, • minimizing impacts by limiting the degree of magnitude of the action and its implementation, • repairing, rehabilitation, or restoring the affected area, • reducing or eliminating the impact over time by preservation and maintenance	Mitigation actions are designed to create new habitat or ameliorate disturbances by the creation of or protection of other habitat. Mitigation for a disturbance must be shown to be effective in the time-frame of the activity, not at some future date. Effective mitigation does not require that birds are immediately present using the land, only that the habitat is capable of supporting birds as part of their yearly life-cycle. However mitigation should be performed in areas which have the highest likelihood of occupation by the species. The amount of mitigation, if required, should be calculated based on the effects generated within SGMAs. Prioritize areas for habitat improvement to make best use of mitigation funds. Mitigation for a disturbance should not necessarily be tied	Within core areas, when mitigation is required, the agencies in coordination with WGFD and partners would use the following mitigation hierarchy: in-kind and onsite mitigation as first priority or in-kind mitigation offsite mitigation as second priority. When additional offsite mitigation is necessary, conduct it within the same population area where the impact occurs if possible or, if that is not possible, within the same MZ per 2006 WAFWA Strategy as the impact.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			operations during the life of the action, or • compensating for the impact by replacing or providing substitute resources or environments. Money for research or monitoring within PHMA will not be counted as mitigation. Mitigation includes actions that are designed to create new habitat or ameliorate disturbances by the creation of or protection of other habitat, either within the same population or in other areas of the State. The preference is that mitigation for impacts within PHMA will occur within the same population area of the impact. For off-site mitigation associated with mitigation of actions within GHMA, project proponents will work closely with the BLM and the State of Utah to identify PHMA where off-site mitigation could occur. The ratio for mitigation, either onsite or off-site, will be set at the project level and will depend on the type	to reclamation efforts at the actual site of the disturbance. Mitigation may occur locally, elsewhere in the same population area, or in another population area, based on the location, which offers greater potential for enhancing GRSG populations, so long as the location of the mitigation does not result in the loss of resiliency, representation or redundancy of the species in Utah. The Public Lands Policy Coordination Office, with assistance from the UDWR, BLM, Forest Service, NRCS, Department of Natural Resources, Department of Agriculture and Food, and other entities, shall coordinate and oversee the creation and operation of a Greater Sage-Grouse Mitigation Bank in Utah. The operation of this Mitigation Bank will seek to rehabilitate or restore lands as habitat prior to need, as well as coordinate the mitigation for development or other effects upon the habitat of the GRSG. Once operational,	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			and quality of the habitat being affected and the nature of the action affecting the habitat. While mitigative exchange values will not be set in this planning process, they need to follow the guiding principles of not trading short-term gains for long-term losses. For compensatory mitigation (either onsite or off-site), actions should consider the type and quality of habitat being impacted by a project and the proportional impact a project will have the population. In turn, proposed mitigation actions should address the same type and quality of habitat that may be impacted (e.g., breeding, nesting, brood-rearing, wintering, transitional habitats). The value of the habitat may increase if the birds use the area for more than one time of the year, if it is relatively higher in quality, or if the type of habitat is a limiting factor for the local population. Similarly, mitigation should account for the proportional impact a project will have to a specific population	contributions to the Bank will be welcome. Mitigation may be required in nesting and brood-rearing areas, winter habitat, and other habitat. Examples of successful mitigation for various GRSG habitat types include the following: <u>Leks</u> • Removal of trees on or adjacent to the lek. • Removal or marking of fences on or adjacent to the lek. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). <u>Nesting and Brood-Rearing Areas</u> • Removal of trees to no more than 5 percent cover (the closer to 0 percent the better) and maintenance of at least 10 percent sagebrush cover. • Maintain forb cover greater than 10 percent and greater	

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			(if a given project impacts 1 percent of wintering habitat versus 30 percent of the wintering habitat). Mitigation that trades impacts on areas that are meeting habitat objectives with creation of areas that do not meet habitat objectives, even in high offsetting ratios, will not be accepted. Mitigation does not require that birds are immediately present using the land, only that the habitat meets habitat objectives for grasses and forbs. However mitigation should be performed in areas which have the highest likelihood of occupation by the species.	than 10 percent grass cover during nesting and brood-rearing season. • Maintain or improve wet meadows, when present. • Installation of green-strips or firebreaks to protect existing nesting habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a minimum of a 4:1 ratio starting with the first acre disturbed. <u>Winter Habitat</u> • Removal of trees to less than 5 percent cover (the closer to 0 percent the better) and maintenance of at least 10 percent sagebrush cover. • Installation of green-strips or firebreaks to protect existing winter habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a 4:1 ratio	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				starting with the first acre disturbed. <u>Other Habitats</u> • Removal of trees to less than 5 percent cover and maintenance of at least 10 percent sage brush cover. • Maintain forb cover greater than 10 percent and grass cover greater than 10 percent during nesting/brood-rearing season. • Maintain or improve wet meadows, when present. • Installation of green-strips or firebreaks to protect existing habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a 1:1 ratio with first acre disturbed. Mitigation must produce lands capable of supporting GRSG habitat before the proposed disturbance occurs, though birds do not need to be using the mitigated area. The	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				proponent of the disturbance must demonstrate that the conditions have been met. Before mitigated areas are considered to be habitat within an SGMA, a preponderance of the evidence must indicate that GRSG are occupying the mitigated area. Habitat altered by fire shall not be removed from SGMAs until rehabilitation or restoration of the burned areas is determined to be unsuccessful or not feasible.	
Vegetation Management					
In most LUPs, either no priorities are established or prioritization is given to projects that benefit multiple resources (e.g., livestock, wildlife, wild horses and burros, special status species).	Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG. Prioritize restoration in seasonal habitats that are thought to be limiting GRSG distribution and/or abundance.	Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG. 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.	Where necessary to meet habitat objectives, treat PHMA to maintain and expand healthy GRSG habitat (e.g., conifer encroachment areas, areas with or at threat to be converted to annual grasslands, areas without a proper shrub/grass/forb composition for the applicable seasonal habitat and ecological site, fuel breaks, areas without a healthy mosaic of habitat types for the various GRSG life stages). Prioritize implementation of	Protection of GRSG habitat is the primary focus of conservation efforts, but many locations can be reclaimed or restored by active vegetation management actions. For example: • removal of encroaching conifers and other plant species may create new habitat or increase the carrying capacity of habitat and thereby expand GRSG populations, or • the distribution of water into	Within core areas, prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG. Prioritize restoration in seasonal habitats that are thought to be limiting GRSG distribution and/or abundance. Apply appropriate seasonal restrictions for implementing

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			restoration/treatment projects based on environmental variables that improve chances for project success in areas most likely to benefit GRSG. Prioritize restoration in seasonal habitats that are identified as the limiting factor for GRSG distribution and/or abundance. Use collaborative planning efforts to develop and implement habitat restoration projects. Expertise and ideas from entities such as local landowners, local GRSG working groups, and other federal, state, county, and private organizations should be solicited and considered in development of restoration projects. Consider design features that will contribute to the most favorable conditions for success when planning and implementing restoration/vegetation treatment projects. Considerations should include: • Review of available plant species and their adaptation to the site when developing seed	wet meadow areas may improve seasonal brood-rearing range and enhance GRSG recruitment. Aggressively remove encroaching conifers and other plant species to expand GRSG habitat where possible. Sagebrush treatment projects within nesting and winter habitat should be limited and require pre-approval by the appropriate regulatory agency in discussions with UDWR. Sagebrush treatment projects should maintain 80 percent of the available habitat as sagebrush within the project area; 20 percent of the habitat can be managed for younger age classes of sagebrush, if appropriate. These treatments are generally recommended only to improve brood-rearing habitat, but need to be carefully considered before use in winter and other habitat. Within SGMAs, GRSG stipulations should take	vegetation management treatments according to the type of seasonal habitats present in a core area. Vegetation treatments must include monitoring to determine achievement of objectives and their long-term success. In core areas, design and implement vegetation treatments with an emphasis on protecting existing sagebrush ecosystems and enhancing and protecting future sagebrush ecosystems. For vegetation treatments, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and BLM IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management), or applicable Forest Service counterpart. These recommended protocols will be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			mixes. • The need to reduce non-native annual grass densities and competition through herbicide, targeted grazing, tillage, prescribed fire, etc. • Assessment of on-site vegetation to ascertain if enough desirable perennial vegetation exists to consider the use of passive restoration techniques. • Use of site preparation techniques that retain existing desirable vegetation. • Use of "mother plant" techniques or planting of satellite populations of desirable plants to serve as seed sources. • The need for post-treatment control of non-native annual grass and other invasive species.	precedence over stipulations for other species if conflicts occur, if otherwise allowable by law. Design water developments to enhance mesic habitat for use by GRSG and maintain adequate vegetation in wet meadows. Within SGMAs, GRSG stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for GRSG will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment.
Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP. All LUPs address vegetation	Include GRSG habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007) or if available, State GRSG Conservation plans and appropriate local information in habitat restoration objectives. Make meeting these objectives	Include GRSG habitat objectives in habitat restoration projects. Make meeting these objectives within mapped occupied GRSG habitat the highest restoration priority.	Include GRSG habitat objectives in restoration/treatment projects within PHMA. There will be objectives for short-term and long-term habitat conditions, and they should include specific objectives for the establishment of sagebrush cover and height, as	No similar action.	Identify areas for vegetation restoration and/or identify restoration criteria that include State GRSG conservation plans and appropriate local information.

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Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros. Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy. A few plans (e.g., Vernal RMP, Uinta LRMP) including more detailed habitat objectives such as desired seral sage, percent canopy cover, or height.	within PHMA the highest restoration priority.		well as cover and heights for understory perennial grasses and forbs necessary for GRSG seasonal habitats. The restoration/treatment objectives should take into consideration ecological site potential of the area(s) and the need for a mosaic of habitat conditions across the landscape. Make meeting the GRSG objectives for the restoration/ treatment project one of the primary priorities for the project and subsequent land uses, recognizing that managing for other special status species may result in treatment objectives that may not meet GRSG seasonal habitat objectives (e.g., winter habitat cover requirements vs. creation of Utah prairie dog habitat). Where GRSG habitat overlaps with that of federally listed threatened or endangered species (e.g., Utah prairie dogs), assemble species-specific experts to develop conservation and recovery objectives and allow habitat treatments that will benefit both species.		

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
All recent LUPs include management actions that promote use of native species where possible. Older plans typically do not include a similar management action.	Require use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, non-native seeds may be used as long as they support GRSG habitat objectives.	Same as Alternative B.	Prioritize the use of native seeds for restoration in PHMA based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used as long as they support GRSG habitat objectives. Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, should be the principle objective for rehabilitation efforts.	No similar action.	Require use of native seeds for restoration unless the probability for success is low (desirable non-native seeds may be used as long as they meet GRSG habitat objectives), and design restoration management to obtain long term persistence.
All LUPs, which are written in accordance with applicable program direction, include management actions that allow the administrating agency to make adjustments to livestock grazing, wild horse and burro management, and travel management on a case-by case basis following restoration activities.	Design post restoration management to ensure long term persistence and habitat objectives. This could include changes in livestock grazing management, wild horse and burro management and travel management, etc., to achieve and maintain the desired condition of the restoration effort that benefits GRSG.	Same as Alternative B.	Same as Alternative B.	No similar action.	Identify areas for vegetation restoration and/or identify restoration criteria that include State GRSG conservation plans and appropriate local information. Require use of native seeds for restoration unless the probability for success is low (desirable non-native seeds may be used as long as they meet GRSG habitat objectives), and design restoration management to obtain long term persistence.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Allow commercial seed collection on a case-by-case basis.	No similar action.	No similar action.	Identify areas where commercial seed or live plant collection in PHMA could occur. Limit commercial collection to levels that ensure long-term maintenance of the GRSG habitat objectives. Locations, species allowed for collection, and limits on the amounts to be collected will be developed on a case-by-case basis following environmental review of annual site-specific conditions. Commercial collection during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter) will include mitigation, developed to reflect the site-specific conditions on the ground, that could include, but is not necessarily limited to, restrictions on the timing and method of collection activities, limiting the number of individuals collecting, providing portions of collected seeds for use in local restoration projects, etc.	No similar action.	No similar action.
Most LUPs do not include a similar action. A few plans include management actions that	Consider potential changes in climate when proposing restoration seedings when using native plants. Consider collection from the warmer	Same as Alternative B.	Allow for seed collection and use in restoration/reclamation activities. Prioritize use of seed from areas as close as possible to where the seed will be used to	No similar action.	No similar action.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
encourage use of native species from local sources when possible.	component of the species current range when selecting native species.		capture local adaptations.		
No similar action. Most LUPs do not include specific management actions related to seedings. Plans do include generic decisions that allow maintenance of existing range improvements, which includes maintenance of historical seedings. Recently completed LUPs promote use of native species when conducting restoration activities. This would include restoration projects conducted in areas that have perennial grass cover. Older plans do not include a similar management action.	Restore native (or desirable) plants and create landscape patterns which most benefit GRSG.	Exotic seedings will be rehabbed, interseeded, or restored to recover sagebrush in areas to expand occupied habitats. Complete 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. • Removal of crested wheatgrass through plowing while minimizing use of herbicides. Subsequent re-seeding with local native ecotypes. In all cases, local native plant ecotype seeds and seedlings must be used. Perform active restoration of cheatgrass infestation areas.	Diversify the perennial grass and forb components through additional seeding in areas where monotypic stands resulting from historical seedings (e.g., crested wheatgrass) have been recolonized by sagebrush.	No similar action.	Restore native plants and create landscape patterns that most benefit GRSG, considering potential changes in climate.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
The practices found in Appendix H, Required Design Features for Fire and Fuels, of the Draft LUPA/EIS were provided as BMPs as part of BLM IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Follow the RDFs for fire and fuels (BLM IM 2013-128; see Appendix H of the Draft LUPA/EIS)	Same as Alternative B.	Follow the applicable and technically feasible RDFs and policies for fire and fuels outlined in Appendix H of the Draft LUPA/EIS.	Aggressively remove cheatgrass and other invasive species, and rehabilitate areas to provide additional habitat for GRSG where possible.	Give priority for implementing specific GRSG habitat restoration projects in annual grasslands first to sites which are adjacent to or surrounded by core areas. Annual grasslands are second priority for restoration when the sites not adjacent to core areas, but within 2 miles of core areas. The third priority for annual grasslands habitat restoration projects are sites beyond 2 miles of core areas. The intent is to focus restoration outward from existing, intact habitat.
Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP. All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros. Recent LUPs may include management actions that	Make re-establishment of sagebrush cover and desirable understory plants (relative to ecological site potential) the highest priority for restoration efforts.	Composition, function, and structure of native vegetation communities will meet ESD (or the Forest Service equivalent) and will provide for healthy, resilient, and recovering GRSG habitat components.	Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000, Hagen et al. 2007), where such can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of	No similar action.	Make reestablishment of sagebrush cover and desirable understory plants the highest priority for restoration efforts

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
purposely restore or enhance GRSG habitat.			local research.		
No similar action.	In fire prone areas where sagebrush seed is required for GRSG habitat restoration, consider establishing seed harvest areas that are managed for seed production and are a priority for protection from outside disturbances.	Same as Alternative B.	No similar action.	No similar action.	Same as Alternative B.
No similar action.	No similar action.	Avoid sagebrush reduction/treatments to increase livestock or big game forage in occupied habitat and include plans to restore high-quality habitat in areas with invasive species.	No similar action.	No similar action.	No similar action.
Recently completed LUPs promote use of native species when conducting restoration activities.	Prioritize native seed allocation for use in GRSG habitat in years when preferred native seed is in short supply. This may require reallocation of native seed from Emergency Stabilization and Rehabilitation (BLM) and/or Burn Area Emergency Rehabilitation (Forest Service) projects outside of PHMA to those inside it. Use of native plant seeds for Emergency Stabilization and Rehabilitation or Burn Area Emergency Rehabilitation seedings is	Same as Alternative B.	Prioritize the use of native seeds for restoration in PHMA based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used to meet GRSG habitat objectives to trend toward restoring the fire regime. Re-establishment of appropriate sagebrush species/ subspecies and important understory plants, relative to site potential, shall be the principle	Allow use of fire-retardant vegetation that will buffer areas of high quality GRSG habitat from catastrophic fire.	Where probability of success or native seed availability is low or where there is a specific identified purpose that cannot be met with natives, (desirable non-native seeds may be used as long as they meet GRSG habitat conservation objectives).

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	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, non-native seeds may be used as long as they meet GRSG habitat conservation objectives (Pyke 2011). Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, shall be the highest priority for rehabilitation efforts.		objective for rehabilitation efforts.		
All LUPs, which are written in accordance with applicable program direction, include management actions that allow the administrating agency to make adjustments to livestock grazing, wild horse and burro management, and travel management on a case-by case basis following restoration activities.	Design post Emergency Stabilization and Rehabilitation/ 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, etc., to achieve and maintain the desired condition of Emergency Stabilization and Rehabilitation projects to benefit GRSG (Eiswerth and Shonkwiler 2006).	Same as Alternative B.	Same as Alternative B. Monitor and control invasive vegetation post-wildfire for at least 3 years.	Immediate, proactive means to reduce or eliminate the spread of invasive species, particularly cheatgrass, after a wildfire, is a high priority.	Same as Alternative B.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	Consider potential changes in climate (Miller et 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).	Same as Alternative B.	No similar action.	No similar action.	Restore native plants and create landscape patterns that most benefit GRSG, considering potential changes in climate.
No similar action.	No similar action.	Establish and strengthen networks with seed growers to assure availability of native seed for Emergency Stabilization and Rehabilitation projects.	No similar action.	No similar action.	No similar action.
No similar action.	No similar action.	Post fire recovery must include establishing adequately sized exclosures (free of livestock grazing) that can be used to assess recovery.	No similar action.	No similar action.	No similar action.
Integrated Invasive Species Management Implement noxious weed and invasive species control using integrated weed management actions per national guidance and local weed management plans in collaboration with state and federal agencies, affected counties, and adjoining private lands owners.	Integrated Invasive Species Management Integrated Vegetation Management would be used to control, suppress, and eradicate, where possible, noxious and invasive species per BLM Handbook H-1740-2 and Forest Service Manual 2080.	Integrated Invasive Species Management Same as Alternative B.	Integrated Invasive Species Management Same as Alternative B.	Integrated Invasive Species Management No similar action.	Integrated Invasive Species Management Same as Alternative B.
In most LUPs, either no priorities are established or	No similar action.	Develop and implement methods for prioritizing and	Same as Alternative C.	Aggressively respond to new infestations to keeping invasive	No similar action.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
prioritization is given to projects that benefit multiple resources (e.g., livestock, wildlife, wild horses and burros, special status species).		restoring sagebrush steppe invaded by nonnative plants.		species from spreading. Every effort should be made to identify and treat new infestations before they become larger problems. Additionally containment of known infestations in or near sagebrush habitats should be a high priority for all land management agencies.	
No similar action.	No similar action.	In GRSG habitat, ensure that soil cover and native herbaceous plants are at their ESD potential (or comparable Forest Service methods) to help protect against invasive plants.	No similar action.	No similar action.	No similar action.
No similar action.	No similar action.	No similar action.	No similar action.	No similar action.	Field offices/district offices may implement treatments within core areas where outbreaks of grasshopper or Mormon cricket populations are expected to rise above economic levels. Treatments must be conducted only following reduced agent-area treatments protocols. The Forest Service will work collaboratively with partners at the federal, state, and local levels to maintain and enhance GRSG habitats in a manner consistent with the core

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
						population area strategy for conservation. Field offices/district offices are directed to utilize Wyoming Grasshopper and Mormon Cricket Control website as a resource for updated information when conducting analysis of grasshopper and Mormon cricket control in GRSG habitats.
Wild Horses and Burros						
Manage wild horse and burro population levels within established AMLs to ensure a balance among wild horses, wildlife, livestock, and other resources.	Manage wild horse and burro population levels within established AMLs.	Alt C1: Same as Alternative B.	Alt C2: Associated with the reduction in livestock grazing, reduce wild horse AMLs by 25 percent for management areas that overlap mapped occupied GRSG habitat to reduce grazing pressure on vegetation.	Same as Alternative B.	Same as Alternative A.	There are no Forest Service wild horse ranges in the Wyoming-Blacks Fork or Wyoming-Uinta population areas. As such, this section is not applicable to Alternative E2.
Prioritize wild horse/burro gathers based on monitoring data.	Prioritize wild horse/burro gathers in PHMA, unless removals are necessary in other areas to prevent catastrophic	Same as Alternative B.		Same as Alternative B.	Same as Alternative A.	This section is not applicable to Alternative E2.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	environmental issues, including herd health impacts.				
Prepare or amend herd management plans on an as needed basis	Within PHMA, develop or amend herd management plans to incorporate GRSG habitat objectives and management considerations for all BLM HMAs.	Same as Alternative B.	No similar action.	Same as Alternative A.	This section is not applicable to Alternative E2.
Periodically evaluate and make adjustments to AMLs based on monitoring data.	For all HMAs 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.	No similar action.	Same as Alternative B.	Same as Alternative A.	This section is not applicable to Alternative E2.
No similar action.	Coordinate with other resources (e.g., range, wildlife, and riparian) to conduct land health assessments to determine existing structure/condition/ composition of vegetation within all BLM HMAs.	Same as Alternative B.	Same as Alternative B.	No similar action.	This section is not applicable to Alternative E2.
No similar action.	When conducting NEPA analysis for wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PHMA, address the direct and indirect effect on GRSG populations and habitat.	Same as Alternative B.	When considering wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PHMA, use the criteria identified for domestic livestock in PHMA.	No similar action.	This section is not applicable to Alternative E2.

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified above in PHMA.				
Wildland Fire Management					
No similar action.	No similar action.	No similar action.	BLM and Forest Service planning units (Districts and Forests), in collaboration with the USFWS and relevant state agencies, would complete and maintain GRSG Landscape Wildfire & 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. These assessments and subsequent assessment updates would also be a collaborative effort with an interdisciplinary team to take into account other GRSG priorities identified in this plan. Appendix M, Draft Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, of the Draft LUPA/EIS describes a minimal framework example and	Habitat loss due to fire and replacement of (burned) native vegetation by invasive plants is the single greatest threat to GRSG in Utah. Create and implement a statewide fire agency agreement(s) that will eliminate jurisdictional boundaries and allow for immediate response to natural fire in GRSG habitat within SGMAs. These should include fire suppression actions recommended locally, including, but not limited to: • first strike agreements that allow aggressive fire control on an all-land jurisdictional basis; • allocation of resources to maintain enhanced abilities of all fire agencies to combat ignitions in GRSG habitat within SGMAs. • allocation of resources to immediately commence	Work collaboratively with partners at the State and local level to maintain and enhance GRSG habitats in a manner consistent with the core population area strategy for conservation.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			suggested approach for this assessment. Implementation actions will be tiered to the Local (District/Forest) GRSG Landscape Wildfire & Invasive Species Assessment, using best available science related to the conservation of GRSG. In collaboration with USFWS and relevant state agencies, BLM/Forest Service planning units (Districts/Forests) would 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 would be coordinated across state/regional scales and across jurisdictional boundaries for long-term conservation of GRSG. Annually complete a review of landscape assessment implementation efforts with appropriate USFWS and state agency personnel.	restoration of habitats impacted by wildfire by all responsible agencies; and • removal or establishment of waiver provisions for procedural barriers that may impact the ability of responsible agencies to respond to wildfire with effective reclamation or rehabilitation, such as federal raptor stipulations, cultural assessments, and the like.	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Fuels Management The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Fuels Management Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.	Fuels Management Same as Alternative B.	Fuels Management Follow the applicable and technically feasible RDFs for fuels management in Appendix H of the Draft LUPA/EIS.	Fuels Management No similar action.	Fuels Management Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for Vegetation Management and Fire and Fuels Management.
Design projects to minimize the size of wildfire and prevent the further loss of sagebrush. Existing LUPs typically do not include specific management decisions regarding implementation of fuels treatments in sagebrush habitat. In general, both prescribed fire and non-fire fuels treatments are allowed. Rest treated areas from grazing for two full growing seasons (per BLM policy).	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 percent unless a fuels management objective requires additional reduction 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 the environmental assessment process. • Apply appropriate seasonal	Design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems. • Do not reduce sagebrush canopy cover to less than 15 percent unless a fuels management objective requires additional reduction in sagebrush cover to meet strategic protection of mapped 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 assessment process.	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 collaboration with USFWS and relevant state agencies, BLM/Forest Service planning units (Districts/Forests) with large blocks of GRSG habitat will develop, using the assessment process described in Appendix M of the Draft LUPA/EIS, a fuels management strategy which considers an up-	Habitat loss due to fire and replacement of (burned) native vegetation by invasive plants is the single greatest threat to GRSG in Utah. While unscheduled fires may occur, response to fire can have a large impact on the severity of the effects, especially over time as rehabilitation or restoration continues. Implement the following: • Allow use of fire-retardant vegetation that will buffer areas of high quality GRSG habitat from catastrophic fire. • Use prescriptive fire with caution in sagebrush habitat.	In core areas, design and implement vegetation and fuels treatments with an emphasis on protecting existing sagebrush ecosystems and enhancing and protecting future sagebrush ecosystems. For vegetation and fuels treatments, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and BLM IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management), or applicable Forest Service counterpart. These recommended protocols will

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	restrictions for implementing fuels management treatments according to the type of seasonal habitats present in PHMA. • Allow no 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. 2000; 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 minor component in the understory. • Monitor and control invasive	• Apply appropriate seasonal restrictions for implementing fuels management treatments according to 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. 2000; 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 minor component in the understory (Brown 1982).	to-date fuels profile, LUP 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 from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken. • Avoid constructing fuel breaks through large areas of intact GRSG habitat. • When possible, locate fuel breaks along existing roads, ROWs, and other suitable topographic or natural features (e.g., areas devoid of vegetation, rock outcrops). • Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as grazing, prescribed fire, chemical, biological and mechanical	The WAFWA has prepared information that explains the risks from using prescribed fire in xeric sagebrush habitats. • Prescribed fire should only be used at higher elevations and in a manner designed prescriptively to benefit GRSG. • Conduct effective research into controlling fire size and protecting remaining GRSG areas that are adjacent to high-risk cheatgrass areas. • Focus research efforts on effective reclamation and restoration of landscapes altered by wildfire. • Within winter habitat, manage to maintain maximum amount of sagebrush, especially tall sagebrush, which would be available to GRSG above snow during a severe winter. Tall sagebrush is capable of standing above heavier than normal snowfall. • Sagebrush treatment projects within winter habitat need pre-approval by the	be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for GRSG will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment. In addition to Alternative A, for fuels management, consider multiple tools for fuels reduction and analyze in NEPA compliance documentation before electing to implement prescribed fire in core areas. Avoid the use of prescribed fire in areas of Wyoming big sagebrush, other xeric

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	vegetation post-treatment. • Rest treated areas from grazing for two full growing seasons unless vegetation recovery dictates otherwise. • 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, non-native seeds may be used as long as they meet GRSG habitat objectives (Pyke 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). • Design fuels management	• Livestock grazing should be excluded from burned areas until woody and herbaceous plants achieve GRSG habitat objectives. • Where burned GRSG habitat cannot be fenced from other unburned habitat, the entire area (e.g., allotment/pasture) should be closed to grazing until recovered. • Design post fuels management projects to ensure long 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). • Mowing of grass will be used in any fuelbreak fuels reduction project (roadsides or other areas).	treatments are acceptable. • Allow the use of prescribed fire within PHMA if other treatment opportunities have been explored, where site specific variables allow (will not likely result in long-term loss of sagebrush), and in areas where risk of conversion to exotic annual dominance is low and/or could be mitigated by chemical or other means. Prescribed fire in areas of low elevation Wyoming sagebrush would be avoided. • Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success or native seed availability is low, desirable non-native seeds may be used to meet GRSG habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and desirable non-native species, as appropriate, to provide for fire breaks. • Upon project completion,	appropriate regulatory agency in coordination with the UDWR. Sagebrush treatment projects within winter habitat should maintain 80 percent of the available habitat as tall sagebrush; 20 percent of the habitat can be managed for younger age classes, if appropriate. • Coordinate the needs and efforts related to GRSG with the State of Utah committee that was formed to develop a collaborative process to protect the health and welfare by reducing the size and frequency of catastrophic fires.	sagebrush species, or where cheatgrass or other fire-invasive species occur and/or within areas of less than 12 inches of annual precipitation. Defer grazing on treated areas for two full growing seasons unless vegetation objectives or vegetation recovery indicates a shorter or longer rest period is necessary based on vegetation monitoring results. In addition to Alternative A, restore and recover burned areas that are within core areas. The Forest Service will bring in Burn Area Emergency Rehabilitation teams who will work collaboratively with partners at the federal, state, and local level to maintain and enhance GRSG habitats in a manner consistent with the core population area strategy for conservation. Conduct Density Disturbance Calculation Tool reviews in coordination with the WGFD -

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	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.		monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and/or other treatment components. Control invasive vegetation post-treatment. • Apply seasonal restrictions, as needed, for implementing fuels management treatments according to the type of seasonal habitats present. • Prior to conducting any fuels/habitat treatments in known winter range, work closely with the State of Utah to design the treatment to either strategically reduce wildfire risk around or in the winter range or to specifically maintain, increase, or enhance areas of vegetation to function as important winter range (for habitat associated with years of average snowfall and habitat for years with abnormally high snowfall amounts).		Habitat Protection Program located in Cheyenne at the WGFD headquarters. Areas within core habitat are high priority for restoration of GRSG habitat beyond immediate response. Within core areas, design post fuels management projects to ensure long term persistence of seeded or pre-treatment native plants.
No similar action.	During fuels management project design, consider the utility of using livestock to strategically reduce fine fuels (Diamond et al. 2009), and	No similar action.	During fuels management project design, consider the use of targeted livestock grazing to strategically reduce fine fuels and, if used, implement grazing	Consider the use of prescriptive grazing to specifically reduce fire size and intensity on all types of landownership, where	No similar action.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	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.		management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts on native perennial grasses.	appropriate. This could be particularly effective in areas where cheatgrass is encroaching on sagebrush habitat. This will require cooperation and coordination among different land managers and owners and livestock owners. In some cases feed supplementation and water hauling may need to be utilized to obtain the desired results.	
Preparedness The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Preparedness Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.	Preparedness Same as Alternative B.	Preparedness Follow the applicable and technically feasible RDFs for fire and fuels management in Appendix H of the Draft LUPA/EIS. Implement a coordinated inter-agency approach to fire restrictions based upon National Fire Danger Rating System thresholds (fuel conditions, drought conditions and predicted weather patterns) for GRSG habitat. Develop wildfire prevention plans that explain the resource value of GRSG habitat and include fire prevention messages and actions	Preparedness Create and implement a statewide fire agency agreement(s) that will eliminate jurisdictional boundaries and allow for immediate response to natural fire in GRSG habitat within SGMAs. These should include fire suppression actions recommended locally, including, but not limited to: • first strike agreements that allow aggressive fire control on an all-land jurisdictional basis; • allocation of resources to maintain enhanced abilities of all fire agencies to combat ignitions in GRSG habitat within SGMAs.	Preparedness Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for Vegetation Management and Fire and Fuels Management.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			to reduce human-caused ignitions.	• allocation of resources to immediately commence restoration of habitats impacted by wildfire by all responsible agencies; and • removal or establishment of waiver provisions for procedural barriers that may impact the ability of responsible agencies to respond to wildfire with effective reclamation or rehabilitation, such as federal raptor stipulations, cultural assessments, and the like.	
Fire Management – (Suppression) The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Fire Management – (Suppression) Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.	Fire Management – (Suppression) Same as Alternative B.	Fire Management – (Suppression) Follow the applicable and technically feasible RDFs for fuels management in Appendix H of the Draft LUPA/EIS.	Fire Management – (Suppression) No similar action.	Fire Management – (Suppression) Where applicable and technically feasible, apply BMPs within core areas for Vegetation Management and Fire and Fuels Management.
Under current management there is no designated PHMA or GHMA. Prioritize fire suppression to protect human life and high value resources.	In PHMA, prioritize suppression, immediately after life and property, to conserve the habitat. In GHMA, prioritize suppression where wildfires	Same as Alternative B for PHMA. There is no GHMA in this alternative.	Fire fighter and public safety are the highest priority. GRSG habitat will be prioritized commensurate with property values and other critical habitat to be protected, with the goal to restore, enhance, and maintain	Fire by natural ignition should be addressed as a serious threat. GRSG habitat outside of SGMAs would not be managed for the conservation of the	In core areas, prioritize suppression, immediately after firefighter and public safety to conserve the habitat. Non-core areas would be assigned a priority

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	threaten PHMA.		areas suitable for GRSG. Within GRSG habitat, PHMA are the highest priority for conservation and protection during fire operations and fuels management decision making. The PHMA 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 Landscape Wildfire and Invasive Species Habitat Assessments described in Appendix M of the Draft LUPA/EIS. Limit placement of fire infrastructure (e.g., fire camps, helipads, etc.) in areas of solid sagebrush. In GHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.	species. No specific management actions are provided for this habitat.	commensurate with its importance in the local fire plan.

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
No similar action.	No similar action.	No similar action.		Within acceptable risk levels use 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 LUP direction. Conduct burn-out/backfiring operations in a manner that minimizes the loss of sagebrush when possible (e.g., rather than using established roads when creating anchor lines, consider using bulldozers to create anchor lines closer to the fire that decrease the size of burnout operations and loss of sagebrush).	No similar action.	No similar action.
Livestock Grazing/Range Management						
Continue to make GRSG habitat available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands, though the number of AUMs on a permit may be adjusted during site-specific evaluations conducted during term permit renewals, allotment management plan	Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands. Permit and annual adjustments to those AUMs would be made consistent with regulation and the direction identified below.	Alt C1: Make mapped occupied GRSG habitat unavailable to livestock grazing for the life of the plan. This would result in a reduction of up to	Alt C2: Within allotments that overlap mapped occupied GRSG habitat, reduce permitted AUMs by 131,808 permitted AUMs on BLM lands and 106,149 permitted AUMs	Continue to make GRSG PHMA and GHMA available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands, though the number of AUMs on a permit may be adjusted during site-specific evaluations conducted during term permit renewals, allotment management plan development,	Continue to make GRSG habitat within and outside of SGMAs available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands. Existing grazing operations would utilize recognized rangeland BMPs to increase the necessary vegetation, and thereby	For those portions of the planning area in Wyoming, continue to make core and non-core areas available for livestock grazing. Active AUMs for livestock grazing would be included with the 265,373 AUMs on National Forest System lands noted for Alternative A, though the number of AUMs (head-months) on a permit may be

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
development, or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the permittees livestock operation and/or an evaluation of a variety of forage and resource site-specific conditions.		329,521 permitted AUMs on BLM lands and 265,373 permitted AUMs on National Forest System lands (if all allotments with any overlap with GRSG habitat were closed in their entirety; closing just the portions of allotments within GRSG habitats, if possible, could reduce this number).	on National Forest System lands. Reductions by allotment will occur by Field Office based on a review of the site-specific information (e.g., range condition, utilization levels, type and condition of GRSG habitat). Based on the Field Office review, the reductions in AUMs would occur in allotments that overlap mapped occupied GRSG habitat, whether partial reductions in active use or closing specific allotments. The reductions would be	or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the site specific resource and GRSG habitat conditions as indicated by monitoring, or permittees' livestock operation.	increase the potential for nesting success and population recruitment Should site-specific concerns be raised about the effect of grazing upon GRSG habitat, and such effects are documented over a sufficiently long time-frame, corrective management actions should be addressed through the application of BMPs, including consideration of those identified by the Department of Agriculture and Food's Grazing Improvement Program.	adjusted during site-specific evaluations conducted during term permit renewals, allotment management plan development (or the Forest Service equivalent), or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the permittees livestock operation and/or an evaluation of a variety of forage and resource site-specific conditions. In determining appropriate management actions that will be considered, refer to the document, "Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat" (Cagney et al. 2010) for guidance. This peer reviewed document is the result of a collaborative effort in Wyoming to ensure proper

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			implemented during renewal of term grazing permits. The resulting AUMs available for permitting for livestock grazing would be 197,713 on BLM lands and 159,224 on National Forest System lands.			livestock grazing practices with GRSG habitats. It is the culmination of efforts to gather and integrate current knowledge and practices regarding livestock grazing in respect to important GRSG habitats within Wyoming. Wyoming Executive Order 2011-05 considers grazing activities compatible with GRSG conservation. The State of Wyoming will collaborate with appropriate federal agencies in defining a framework for evaluating situations to determine if a causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and GRSG conservation objectives where conservation objectives are not being achieved on federal lands. The State of Wyoming will also collaborate with appropriate federal agencies on appropriate site based actions to achieve GRSG conservation objectives within the framework. Monitoring data

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
						will at a minimum reflect 5 years of information, include rangeland health assessments and require conclusion or action to be based on 3 out of 5 years of data (Executive Order 2013-03).
No similar action.	Within PHMA, incorporate GRSG habitat objectives and management considerations into all BLM and Forest Service grazing allotments through allotment management plans or permit renewals and/or Forest Service Annual Operating Instructions.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Same as Alternative B.	No similar action.	Ensure site-specific, measurable, conservation and mitigation objectives are included in project planning within core GRSG habitats.
Consider adjustments to allotment boundaries that provide for single unit or landscape level grazing approaches to habitat improvement on a case-by-case basis.	In PHMA, work collaboratively on integrated ranch planning within GRSG habitat so operations with deeded/BLM and/or Forest Service allotments can be planned as single units.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	In PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for single unit or landscape level approaches to habitat improvement. In PHMA with unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use, manage the allotment as a single unit that will have the same management as the public lands.	No similar action.	Evaluate opportunities to coordinate management plans and strategies on multiple allotments where coordination under a single management plan/strategy would result in enhancing GRSG populations or its habitat as determined in coordination with the State of Wyoming and the State wildlife agency.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
Manage rangeland resources to maintain healthy, sustainable, rangeland ecosystems and to restore degraded rangelands in accordance with Utah's Standards for Rangeland Health or standards or guidelines established in individual Forest Service LRMPs. Monitor vegetation trends (including composition, cover, and age class), noxious weeds, riparian Proper Functioning Condition, etc. as part of the grazing management program. BLM plans do not contain grazing management decisions specific to conserving GRSG habitat. Forest Service LUPs contain specific management actions for permitted livestock grazing that take in to consideration established habitat management objectives.	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 ESDs (or comparable Forest Service methods) to conduct land health assessments to determine if standards of range-land health are being met.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Evaluate Utah's Rangeland Health Standards (Forest Service may use other analyses) and process grazing permits within PHMA. Focus management activities on allotments found not to be achieving Utah's Rangeland Health Standards and that have the best opportunities for conserving, enhancing or restoring habitat for GRSG. When completing land health assessments, incorporate appropriate indicators and protocols to assess the condition of GRSG habitat considering the objectives (e.g., percent cover and height of sagebrush, grasses, forbs, other shrubs, etc.) (Doherty et al. 2011). Use ESDs or Forest Service equivalent and/or other appropriate information, including GRSG habitat objectives, as the basis to determine the desired plant community or other community within proper functioning ecological processes for conducting land health	No similar action.	In cooperation, consultation, and coordination with permittees / lessees, cooperators, and stakeholders, including interested parties, develop and implement appropriate livestock grazing management actions to address the Wyoming Standards for Healthy Rangelands, improve forage for livestock, and enhance rangeland health. Consider the application of BMPs for the protection of GRSG as terms and conditions of grazing permit/lease renewals. In areas where Wyoming Standards for Healthy Rangelands are not being met or are not making progress towards meeting standards, because of current livestock grazing management, modify existing permits or condition the issuance of new permits on the implementation of new grazing strategies to meet standards in accordance with grazing regulations. Apply appropriate BMPs as terms and conditions of the permit.

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
				assessments to evaluate the achievement or non-achievement of rangeland health standards.		Within core areas, incorporate GRSG habitat objectives and management considerations into all Forest Service grazing allotments containing GRSG habitat through allotment management plans or permit renewals. Consider the application of BMPs for the protection of GRSG as terms and conditions of grazing permit/lease renewals. The Forest Service will collaborate with the State of Wyoming and appropriate federal agencies to develop appropriate conservation objectives. The Forest Service will collaborate with appropriate federal and State agencies, as directed under Governor Executive Order 2013-3.
No similar action.	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. If local/state seasonal habitat objectives are not available, use GRSG habitat	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Within PHMA where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ESD (or comparable Forest Service methods), maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, winter, and transition areas.	No similar action.	Implement direction from Executive Order 2013-03, as described in MA GRA-4.

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
	recommendations from Connelly et al. 2000 and Hagen et al. 2007.			Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.		
No similar action.	Develop specific objectives to conserve, enhance or restore PHMA based on ESDs (or comparable Forest Service 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 alternative that conserves, restores or enhances GRSG habitat in the NEPA document prepared for the permit renewal.	Alt C1: No similar action.	Alt C2: Develop specific objectives to conserve, enhance or restore occupied GRSG habitat based on GRSG habitat objectives (including within wetlands and riparian areas).	Same as Alternative B.	Consider GRSG seasonal habitat requirements when managing sagebrush rangelands. Considerations to be taken into account include the following: Leks • Be cautious of man-made structures on lek sites. • Reduce shrub encroachment and maintain the "open" area that characterizes a typical lek site. • Identify the location of leks	Implement direction from Executive Order 2013-03, as described in MA GRA-4.

Table 2.4
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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
					through discussions with UDWR biologists. Nesting/Early Brood-Rearing • Maintain and enhance the existing sagebrush/plant communities. • Manage these areas to increase herbaceous cover by sustaining a mosaic of sagebrush and open areas. • Avoid repeated, annual heavy use of these areas by implementing periodic rest and/or deferment periods during the critical growing season. Late Brood-Rearing • Avoid continuous (season-long) grazing of wet meadows and riparian habitats, especially under drought conditions when temperatures are high. Winter • Carefully manage levels of browsing or activities in sagebrush areas that constitute GRSG habitat that would reduce GRSG access	

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
					to these areas for food and cover. • The potential impact of livestock grazing on winter habitat can be positive or negative depending on scale and location of use	
Consider changes to season of use on a case-by-case basis when resource conditions indicate that a change is needed.	No similar action.	Alt C1: No similar action.	Alt C2: Within GRSG habitat, change season of use so that no grazing occurs during the growing season. Based on sub-regional climate variations, growing season will be determined on a permit-by-permit basis.	No similar action.	No similar action.	No similar action.
Consider range improvements and/or adjust permit terms and conditions on a case-by-case basis as necessary to meet land health standards or habitat objectives identified in individual LUPs. Changes may include, but are not limited to:	In PHMA, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve GRSG seasonal habitat objectives.	Alt C1: No similar action.	Alt C2: In mapped occupied GRSG habitat, manage for vegetation composition and structure consistent with	In PHMA, manage for vegetation composition and structure consistent with the objectives for GRSG seasonal habitats, as described above. Develop and implement the terms and conditions needed to meet these objectives through the permit	Address incompatible grazing strategies through established rangeland management practices consistent with the maintenance or enhancement of habitat. Carefully manage the "time,"	Implement direction from Executive Order 2013-03, as described in MA GRA-4 Within core areas, manage for vegetation composition and structure that reflects ESD or other methods that reference

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
1. Rotation systems (e.g., rest rotation, deferred rotation) 2. Season or timing of use 3. Distribution of livestock use 4. Type of livestock 5. Class of livestock 6. Duration of grazing use and rest periods	Implement management actions (grazing decisions, Annual Operating Instructions [Forest Service only], allotment management plan development, or other agreements) to modify grazing management to meet seasonal GRSG habitat requirements. Consider singly, or in combination, changes in: 1. Season or timing of use 2. Numbers of livestock (includes temporary non-use or livestock removal) 3. Distribution of livestock use; 4. Intensity of use 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats)		ecological site potential and within the reference state to achieve GRSG habitat objectives. Implement management actions (grazing decisions, allotment management plan/ conservation plan development, or other plans or agreements) to modify grazing management to meet seasonal GRSG habitat requirements. Consider singly, or in combination, changes in: 1. Season, timing, and/or frequency of	renewal process or other appropriate implementation action. In GHMA, consider GRSG habitat objectives when making livestock grazing decisions. As necessary to meet land health standards and objectives for PHMA, implement management actions (e.g., allotment management plans, term permit renewals, grazing decisions, other agreements) to modify grazing management to meet seasonal GRSG habitat objectives. Consider singly, or in combination, changes in the following: 1. Rotation systems (e.g., rest rotation, deferred rotation) 2. Season or timing of use 3. Distribution of livestock use; 4. Intensity of use (e.g., objectives for utilization or stubble height) 5. Type of livestock (e.g., cattle, sheep, horses, and goats), unless such a change conflicts with other species management	"timing," and "intensity" of grazing in sagebrush/GRSG habitats to provide for the seasonal needs of GRSG. Specific prescriptions can be applied through more intensive management to address special needs or weak links in the biological year of GRSG production. Where time controlled grazing is not an option, moderate use of occupied GRSG habitats will usually leave mosaic or patchy areas where some plants are ungrazed. Managing for moderate utilization levels (40 percent) after the period of rapid vegetation growth may provide enough residual cover for GRSG nesting and early brood-rearing the subsequent spring. Evaluation of GRSG nesting and escape cover must be determined on a site-specific basis. Livestock operations with a small amount of nesting habitat	site potential or comparable standard to achieve GRSG and other resource objectives. Manage for vegetation composition and structure consistent with ecological site potential to achieve GRSG seasonal habitat objectives. In determining appropriate management actions that will be considered, refer to the document, "Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat" (Cagney et al. 2010) for guidance. This peer reviewed document is the result of a collaborative effort in Wyoming to ensure proper livestock grazing practices with GRSG habitats. It is the culmination of efforts to gather and integrate current knowledge and practices regarding livestock grazing in respect to important GRSG habitats within Wyoming. Use the BLM policy in IM

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			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).	6. Class of livestock (e.g., yearlings vs. cow-calf pairs) 7. Duration of grazing use and rest periods	should consider special management activities to protect nesting and early brood-rearing areas. Lighter use of areas may be warranted. In areas with large tracts of contiguous habitat, livestock producers should manage the vegetation on a rotational grazing basis, which may leave 10 - 20 percent of the area ungrazed periodically in combination with deferring or altering timing of grazing in other areas. In areas where GRSG nesting is common, managing for moderate use of plant growth across the landscape would be appropriate. Well-managed ranches with comprehensive grazing strategies that include short-term or duration grazing, higher levels of use may be acceptable, provided these higher levels of use include rested vegetation in nearby areas.	2009-007 and BLM Handbook H-4180-1 and the equivalent Annual Operating Instructions for the Forest Service to evaluate land health standards achievement in GRSG core habitats and, where not achieved, to determine if existing grazing management practices or levels of grazing use on public lands are causal factors in failing to achieve the standards and conform with the guidelines, which through this process will identify appropriate actions to address non-achievement and non-conformance.
Livestock grazing program/policy direction allows the BLM/Forest Service to make changes to livestock	During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover.	Alt C1: No similar action.	Alt C2: During drought periods, prioritize	During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover.	No similar action.	In addition to Alternative A, if periods of drought occur, where appropriate, the Authorized Officer will

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
grazing in response to drought conditions. Changes may include adjusting livestock numbers based on available forage or shortening the season of use.	Since there is a lag in vegetation recovery following drought, ensure that post-drought management allows for vegetation recovery that meets GRSG needs in PHMA.		evaluating effects of drought in GRSG habitat areas relative to their biological needs, as well as drought effects on ungrazed reference areas. During severe or worse drought conditions, for allotments in GRSG habitat that are not meeting or making progress toward meeting standard, prohibit livestock grazing. Since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al. 2010), ensure	Initiate emergency management measures (e.g. delaying turnout, adjusting the amount and/or duration of livestock grazing, implement other terms of the permit) during times of drought to protect GRSG habitat, in accordance with the Resource Management During Drought Handbook (BLM Handbook 1730-1). Implement post-drought management to allow for vegetation recovery that meets GRSG needs in PHMA.		evaluate the season of use and stocking rate and adjust through coordination with grazing permittee/lessee and annual billings processes.

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			that post-drought management allows for vegetation recovery that meets GRSG needs in GRSG habitat areas based on GRSG habitat objectives.			
Manage, maintain, protect, and restore riparian and wetland areas to the proper functioning condition.	Manage riparian areas and wet meadows for proper functioning condition (Forest Service: or other similar methodology) within PHMA.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Same as Alternative B.	Design water developments to enhance mesic habitat for use by GRSG and maintain adequate vegetation in wet meadows. Within SGMAs, GRSG stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Same as Alternative A.
Manage, maintain, protect, and restore riparian and wetland areas to the proper functioning condition (or Forest Service equivalent method).	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 complexes to maintain or increase amount of edge and	Alt C1: No similar action.	Alt C2: Within GRSG habitats, manage wet meadows to maintain a component of perennial forbs with diverse species richness and productivity	Same as Alternative B.	Design water developments to enhance mesic habitat for use by GRSG and maintain adequate vegetation in wet meadows. Within SGMA, GRSG stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Same as Alternative A.

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
	cover within that edge to minimize elevated mortality during the late brood rearing period.		relative to site potential (e.g., reference state) to facilitate brood 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.			
No similar action.	Where riparian areas and wet meadows meet proper functioning condition (Forest Service – or meet standards using other similar methodology), strive to attain reference state vegetation relative to the ESD.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	No similar action.	Design water developments to enhance mesic habitat for use by GRSG and maintain adequate vegetation in wet meadows. Within SGMAs, GRSG stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Consider the use of range improvement projects to maintain or enhance wet meadows.
Manage rangeland resources to maintain healthy, sustainable, rangeland ecosystems and to	Within PHMA, reduce hot season grazing on riparian and meadow complexes to promote	Alt C1: No similar action.	Alt C2: No similar action.	Within PHMA, assess livestock grazing in riparian and meadow complexes and ensure recovery	Continue livestock grazing strategies that have proven effective in maintaining and	Same as Alternative A. If the causal factor of not meeting a standard is due to livestock

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
restore degraded rangelands in accordance with Utah's Standards for Rangeland Health or standards or guidelines established in individual Forest Service LRMPs. Rangeland health standards require that riparian areas be managed for proper functioning condition.	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).			or maintenance of appropriate vegetation and water quality. Where recovery or maintenance is not occurring and the causal factor is livestock grazing, reduce pressure on riparian or wet meadow vegetation used by GRSG in the summer by adjusting grazing management practices (e.g., use fencing/herding techniques, or changes in seasonal use or livestock distribution).	enhancing GRSG habitat, unless compelling and credible cause-and-effect evidence indicates a disturbance exists. Address incompatible grazing strategies through established rangeland management practices consistent with the maintenance or enhancement of habitat. Design water developments to enhance mesic habitat for use by GRSG and maintain adequate vegetation in wet meadows. Within SGMAs, GRSG stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	grazing then follow Executive Order 2013-03.
Consider authorization of new water developments on a case-by-case basis taking into consideration impacts on other resources and resource values.	Authorize new water development for diversion from spring or seep source only when GRSG habitat within PHMA would benefit from the development. This includes developing new water sources for livestock as part of an allotment management plan/ conservation plan to improve	Alt C1: No similar action.	Alt C2: Authorize no new water developments for diversion from spring or seep sources within GRSG habitat.	Limit authorization of new water developments within PHMA to projects that would have a neutral effect or be beneficial to GRSG habitat (such as by shifting livestock use away from critical areas). New developments that divert surface water must be designed to maintain continuity of predevelopment riparian or	Design water developments to enhance mesic habitat for use by GRSG and maintain adequate vegetation in wet meadows. Within SGMAs, GRSG stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Continue to authorize water developments in core areas; evaluate all positives and negatives for both upland and riparian habitat. Plan and authorize range improvement projects on BLM and National Forest System lands in a way that maintains

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
	GRSG habitat.			wet meadow vegetation and hydrology.		and/or improves GRSG and its habitat within core areas. Analyze through a range of reasonable alternatives any direct, indirect, and cumulative effects of grazing on GRSG and its habitats through the NEPA process.
Consider modifications to existing water developments on a case-by-case basis taking into consideration impacts on other resources.	Analyze springs, seeps and associated pipelines to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within PHMA. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to GRSG.	Alt C1: No similar action.	Alt C2: Analyze springs, seeps and associated water developments to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within GRSG habitats. Make modifications where necessary, including dismantling water.	Within PHMA evaluate existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and GRSG habitat. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to GRSG.	No similar action.	Evaluate existing water developments associated with springs and seeps and modify associated pipelines/structures to those developments having an impact on core areas.
Allow treatments that provide benefits for multiple resources. Additional forage will be appropriate to livestock, wild horses and burros (where	In PHMA, only allow treatments that conserve, enhance or restore GRSG habitat (this includes treatments that benefit livestock as part of an allotment	Alt C1: No similar action.	Alt C2: Ensure that vegetation creates landscape	In PHMA, ensure that vegetation and rangeland treatments conserve, enhance or restore GRSG habitat (this includes treatments that benefit	No similar action.	For vegetation treatments in sagebrush within core areas, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a,

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
applicable), and wildlife.	management plan/ conservation plan to improve GRSG habitat).		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 allotment management plan/ conservation plan to improve GRSG habitat). Defer grazing in GRSG habitat until monitoring indicates treatment and habitat objectives have been met. This may take more	livestock).		as updated) and IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management). These recommended protocols will be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for GRSG will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment. Work collaboratively with partners at the State and local level to maintain and enhance

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			than 2 years.			GRSG habitats in a manner consistent with the core population area strategy for conservation.
Most LUPs do not include specific management actions related to seedings. Plans do include generic decisions that allow maintenance of existing range improvements, which includes maintenance of historical seedings. Recently completed LUPs promote use of native species when conducting restoration activities. This would include restoration projects conducted in areas that have perennial grass cover. Older plans do not include a similar management action.	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 allotment management plan/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 component of a grazing system during the land health assessments.	Alt C1: No similar action.	Alt C2: 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	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 provide value in conserving or enhancing GRSG habitats, then no restoration would be necessary. Assess the compatibility of these seedings for GRSG habitat during the land health assessments.	No similar action.	No similar action.

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			these seedings for GRSG habitat during the land health assessments.			
Consider structural range improvements on a case-by-case basis to provide for livestock grazing while maintaining rangeland health.	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 context, include but are not limited to: cattleguards, 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.	Alt C1: No similar action.	Alt C2: Avoid all new structural range developments and location of supplements (salt or protein blocks) in mapped occupied GRSG habitat unless independent peer-reviewed studies show that the range improvement structure or nutrient supplement placement benefits GRSG. Structural range developments, in this context, include but are not limited to cattleguards,	In PHMA, design any new structural range improvements to conserve, enhance, or restore GRSG habitat through an improved grazing management system relative to GRSG objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, 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.	Locate livestock fences away from leks and employ the NRCS fence standards (see NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes.")	In core areas, continue to evaluate and modify when necessary, existing range improvement (e.g., fences, watering facilities) associated with grazing management operations for impacts on GRSG and its habitat, while recognizing the importance of such structures and activities to meet, maintain or make progress towards meeting rangeland health standards or ESDs (or Forest Service equivalent).

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			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. Consider the comparative cost			

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			of changing grazing management instead of constructing additional range developments.			
Consider modifications to existing structural range improvements on a case-by-case basis taking into consideration impacts on other resources.	In PHMA, evaluate existing structural range improvements and location of supplements (salt or protein blocks) to make sure they conserve, enhance or restore GRSG habitat.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	In PHMA, evaluate and assess the need to modify existing improvements to make sure they are neutral, conserve, enhance, or restore GRSG habitat.	No similar action.	In core and non-core areas, continue to evaluate and modify when necessary, existing range improvements (e.g., fences, watering facilities) associated with grazing management operations for impacts on GRSG and its habitat.
No similar action.	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.	Alt C1: No similar action.	Alt C2: 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.	Same as Alternative B.	Fences should not be located on or adjacent to leks where bird collisions would be expected to occur. Employ NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes").	In core and non-core, continue to evaluate and modify when necessary, existing range improvements (e.g., fences, watering facilities) associated with grazing management operations for impacts on GRSG and its habitat.
Implement noxious weed and invasive species control using integrated weed management actions per national guidance	In PHMA, monitor for, and treat invasive species associated with existing range improvements.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	In PHMA, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range	Aggressively respond to new infestations to keeping invasive species from spreading. Every effort should be made to	Design all range projects in a manner that minimizes potential for invasive species establishment. Monitor for,

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
and local weed management plans in collaboration with state and federal agencies, affected counties, and adjoining private lands owners.				improvements.	identify and treat new infestations before they become larger problems. Additionally containment of known infestations in or near sagebrush habitats should be a high priority for all land management agencies.	and treat invasive species associated with existing range improvements
Consider voluntary relinquishment of grazing permits and preferences, in whole or in part, on a case-by-case basis.	Maintain retirement of grazing privileges as an option in PHMA when the current permittee is willing to retire grazing on all or part of an allotment. Analyze the impacts of no livestock use on wildfire and invasive species threats in evaluating retirement proposals.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Within PHMA, when grazing permits are offered for relinquishment, consider reassigning the available preference and forage allocation if the issuance of a grazing permit implements improved grazing management practices that will enhance and restore GRSG habitat.	No similar action.	Within core areas, incorporate GRSG habitat objectives and management considerations into all BLM and Forest Service grazing allotments through allotment management plans or permit renewals and/or Forest Service Annual Operating Instructions. When livestock grazing permits and/or grazing preference are voluntarily relinquished in portions of or all of an allotment, determine appropriate grazing management including consideration of closure to livestock grazing, based on soil, vegetation and other resources. Temporary use may be allowed in allotments where

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
						grazing preference has been relinquished or non –use warrants, to rest other allotments that include important GRSG habitat.
No similar action.	No similar action.	Alt C1: No similar action.	Alt C2: Establish and maintain sufficiently large areas free of livestock as reference areas to aid in describing ecological site potential and as a measure of the comparative effects of livestock grazing—and relief from livestock grazing—on GRSG populations.	No similar action.	No similar action.	No similar action.
No similar action.	No similar action.	Alt C1: No similar action.	Alt C2: Any vegetation treatment plan must include pretreatment data on wildlife	No similar action.	No similar action.	No similar action.

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Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			and habitat condition, establish non-grazing exclosures, and include long-term monitoring where treated areas are monitored for at least 3 years before grazing returns. Continue monitoring for 5 years after livestock are returned to the area, and compare to treated, ungrazed exclosures, as well as untreated areas.			
While most plans are silent on trailing decisions, some include language such as "encourage the avoidance of suitable habitats and known populations of all special status species during herding, trailing…"	No similar action.	No similar action.	No similar action.	No similar action.	No similar action.	Livestock trailing that is authorized through crossing permits will include a trailing plan that is designed to avoid sensitive areas and/or time periods for GRSG. The plan will include specific routes and timeframes for trailing.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Recreation					
Consider BLM SRPs and Forest Service recreation SUPs on a case-by-case basis. Consider measures that will minimize impacts on important resources or resource values.	Only allow BLM SRPs and Forest Service recreation SUPs in PHMA that have neutral or beneficial effect on PHMA.	Only allow BLM SRPs and Forest Service recreation SUPs that have demonstrated neutral or beneficial affects to mapped occupied habitat areas.	Only allow BLM SRPs and Forest Service recreation SUPs in PHMA that have neutral or beneficial effect on PHMA. Evaluate existing SRPs/and Forest Service recreation SUPs for adverse effect on GRSG and their habitat. Modify or cancel the permit, as appropriate and where possible to avoid or mitigate effects of habitat alterations or other physical disturbances to GRSG (e.g., breeding, brood-rearing, migration patterns, or winter survival). Identify permit stipulations that require the permittee to implement any necessary habitat restoration activities after SRP events. Restoration activities must be consistent with GRSG habitat objectives as determined by the BLM field office/National Forest in collaboration with the State of Utah.	Limit or ameliorate impacts from recreation activities through the use of the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities	In addition to Alternative A, allow Forest Service recreation SUPs in core areas unless negative impacts on GRSG cannot be adequately mitigated.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				(construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least	

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	
No similar action.	No similar action.	Seasonally prohibit camping and other nonmotorized recreation within 4 miles of occupied GRSG leks.	No similar action.	No similar action.	No similar action.
Comprehensive Travel and Transportation Management					
Manage OHV use in GRSG habitat as follows (Map 2.54, OHV Area Designations–Alternative A): • Open to cross-country use: 797,000 acres • Limited to existing routes: 437,400 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres	Manage OHV use in GRSG habitat as follows (Map 2.55, OHV Area Designations–Alternative B): • Open to cross-country use: 34,600 acres • Limited to existing routes: 1,213,500 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres	Manage OHV use in GRSG habitat as follows (Map 2.56, OHV Area Designations–Alternative C): • Open to cross-country use: 0 acres • Limited to existing routes: 1,016,700 acres • Limited to designated routes: 927,000 acres • Closed: 555,700 acres	Manage OHV use in GRSG habitat as follows (Map 2.57, OHV Area Designations–Alternative D): • Open to cross-country use: 0 acres • Limited to existing routes: 1,249,500 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres	Manage OHV use in GRSG habitat as follows (Map 2.58, OHV Area Designations–Alternative E): • Open to cross-country use: 351,700 acres • Limited to existing routes: 888,000 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres	All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
• No decision mapped: 15,100 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	• No decision mapped: 1,400 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	• No decision mapped: 0 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	• No decision mapped: 0 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	• No decision mapped: 9,800 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	transportation planning process. As such, all acres of the planning area within Wyoming are included in the Alternative E1 bullet that addresses the Forest Service.
Under current management, there are no PHMA. OHV use will be managed as identified in the area-designations above.	In PHMA, limit motorized travel to existing roads, primitive roads, and trails at a minimum, until such time as travel management planning is complete and routes are either designated or closed.	Same as Alternative B.	PHMA and GHMA that do not have designated routes in a Travel Management Plan would be managed at least as limited to existing routes (i.e., could maintain existing OHV closures) until a Travel Management Plan designates routes. PHMA that have undergone Travel Management Planning with route designation would be managed at least as limited to designated routes (i.e., would maintain existing OHV closures). In these areas, existing route designations would be reviewed and adjusted through future travel management planning	SGMAs with nesting and winter habitat that do not have designated routes in a Travel Management Plan would be managed at least as limited to existing routes (i.e., could maintain existing OHV closures) until a Travel Management Plan designates routes. SGMAs with nesting and winter habitat that have undergone Travel Management Planning with route designation would be managed at least as limited to designated routes (i.e., could maintain existing OHV closures). In these areas,	All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			efforts where impacts on GRSG from route presence or use may exist.	existing route designations would be reviewed and adjusted where impacts on GRSG from route presence or use may exist.	
Under current management there are no designated PHMA. No similar action. Under current policy, the need for permanent or seasonal road closures is evaluated during travel management planning.	In PHMA, travel management should evaluate the need for permanent or seasonal road closures.	Close approximately 555,700 acres of mapped occupied habitat to OHV use. In addition, during implementation-level travel planning, consider additional route closures.	During implementation-level travel planning, threats to GRSG and their habitat would be considered when evaluating route designations and/or closures.	No similar action.	No similar action.
Consider route and trail modifications (new or existing) on a case-by-case basis. Identify travel management areas and prioritize travel management planning in areas where it would provide the most resource benefit.	Complete activity level plans within 5 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.	Same as Alternative B.	Complete transportation plans in accordance with National BLM Travel Management guidance, requiring the BLM to maintain a current action plan and planning schedule to most effectively target available resources. The following GRSG population areas are Utah's top priority areas to designate comprehensive travel plans: • Sheeprocks • Bald Hills • Box Elder • Rich • Ibapah • Hamlin Valley	Counties should adopt and enforce travel management plans that include consideration for GRSG.	All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Under current management there are no designated PHMA. Consider route and trail modifications (new or existing) on a case-by-case basis using the designation criteria.	In PHMA, limit route construction to realignments of existing designated routes if that realignment has a minimal impact on GRSG habitat, eliminates the need to construct a new road, or is necessary for motorist safety.	Limit route construction to realignments of existing designated routes if that 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 on offset the loss of GRSG habitat.	Travel systems would be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on GRSG, maintain motorist safety, and prevent unauthorized cross country travel while meeting access needs. To do so, it may be necessary to improve portions of existing routes, close existing routes or create new routes that meet user group needs, thereby reducing the potential for pioneering unauthorized routes. The emphasis of the comprehensive travel and transportation planning within PHMA would be placed on having a neutral or positive effect on GRSG habitat.	No similar action.	Construct roads to minimum design standards needed for production activities within core areas.
No similar action. Allow upgrades to existing roads on a case-by-case basis subject to site-specific environmental review.	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.	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	In PHMA, when considering upgrade of existing routes that would change route category (BLM route category: road, primitive road, or trail; Forest Service route category: level 1, level 2, or level 3) or capacity, consider the larger transportation network while providing for protection of	No similar action.	Within core areas, allow no upgrading of existing routes that would change route category (BLM route category: road, primitive road, or trail; Forest Service route category: level 1, level 2, or level 3) or capacity unless the upgrading would have minimal impact on GRSG in core areas, is

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		GRSG habitat.	GRSG habitat.		necessary for motorist safety, or eliminates the need to construct a new road.
All LUPs include management actions that encourage the administrating agency to follow BMPs that reduce or minimize the impacts of development, including use of existing roads where possible.	In PHMA, 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 total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional, effective mitigation necessary to offset the resulting loss of GRSG habitat.	Prohibit new road construction in mapped occupied GRSG habitat within 4 miles of occupied GRSG leks, and avoid new road construction in mapped occupied GRSG habitat. In mapped occupied habitat, 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, following the 4-mile prohibition from leks, build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional, mitigation necessary to offset the resulting loss of GRSG habitat.	In PHMA, 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 total disturbance in the PHMA. Apply additional effective mitigation necessary to offset the resulting loss of GRSG habitat. Plan for new routes in consideration of the larger transportation network objectives and needs while providing for protection of GRSG habitat.	No similar action.	In core areas, limit route construction to realignments of existing designated routes if that realignment has a minimal impact on GRSG habitat, eliminates the need to construct a new road, or is necessary for motorist safety. New primary and secondary roads would avoid areas within 1.9 miles of the perimeter of occupied GRSG leks within core areas. Other new roads would avoid areas within 0.6-mile of the perimeter of occupied GRSG leks within core areas.
No similar action. The need for restoration of linear disturbances (unauthorized routes) is identified during the	In PHMA, conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also	Same as Alternative B.	In PHMA, conduct restoration of roads, primitive roads and trails not designated for motorized or nonmotorized travel in travel	No similar action.	Within core areas, allow natural deterioration of roads or conduct restoration of roads, primitive roads and

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
implementation-level travel management process or on a case-by-case basis.	includes primitive route/roads that were not designated in WSAs and within lands with wilderness characteristics that have been selected for protection.		management plans.		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 to be managed to retain those characteristics for protection.
When reseeding roads, primitive roads and trails use appropriate seed mixes and consider the use of transplanted sagebrush.	When reseeding roads, primitive roads and trails in PHMA, use appropriate seed mixes and consider the use of transplanted sagebrush.	When reseeding closed roads, primitive roads and trails, use appropriate native seed mixes and require the use of transplanted sagebrush.	Same as Alternative B.	No similar action.	Within GRSG habitats, when reseeding, use appropriate seed mixtures and consider the use of transplanted sagebrush.
No similar action.	No similar action.	No similar action.	No similar action.	Develop an educational process to advise OHV users of the potential for conflict with GRSG.	No similar action.
Lands and Realty					
Manage BLM ROWs and Forest Service SUAs in GRSG habitat as follows (Map 2.8, ROW Avoidance and Exclusion Areas–Alternative A): • Open: 3,219,000 acres • Avoided: 67,200 acres • Excluded: 27,600 acres Manage ROWs/SUAs outside of GRSG habitat but in population areas as follows (Map 2.8):	Manage BLM ROWs and Forest Service SUAs in GRSG habitat as follows (Map 2.9, ROW Avoidance and Exclusion Areas–Alternative B): • Open: 0 acres • Avoided: 529,600 acres • Excluded: 2,784,200 acres Manage ROWs/SUAs outside of GRSG habitat but in population areas the same as Alternative A.	Manage BLM ROWs and Forest Service SUAs in GRSG habitat as follows (Map 2.10, ROW Avoidance and Exclusion Areas–Alternative C): • Open: 0 acres • Avoided: 0 acres • Excluded: 3,313,800 acres Manage ROWs/SUAs outside of GRSG habitat but in population areas the same as Alternative A.	Manage BLM ROWs and Forest Service SUAs in GRSG habitat as follows: <u>Above-Ground Linear ROWs/SUAs</u> (Map 2.11, Avoidance and Exclusion Areas for Above Ground Linear ROWs–Alternative D) • Open – 522,600 acres • Avoided – 1,368,900 acres • Excluded – 1,422,300 acres	Manage BLM ROWs and Forest Service SUAs in GRSG habitat as follows (Map 2.14, ROW Avoidance and Exclusion Areas–Alternative E): • Open: 632,200 acres • Avoided: 2,654,000 acres • Excluded: 27,600 acres Manage ROWs/SUAs outside of GRSG habitat but in population areas as follows (Map 2.14): • Open: 2,292,000 acres • Avoided: 103,200 acres • Excluded: 74,900 acres	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
• Open: 2,344,400 acres • Avoided: 50,800 acres • Excluded: 74,900 acres			<u>Underground/Surface Linear ROWs/SUAs</u> (Map 2.12, Avoidance and Exclusion Areas for Surface and Underground ROWs–Alternative D) • Open – 532,000 acres • Avoided – 2,754,200 acres • Excluded – 27,600 acres <u>Above-Ground Site-Type ROWs/SUAs (non-wind or solar)</u> (Map 2.13, Avoidance and Exclusion Areas for Above Ground Site Types–Alternative D) • Open – 531,900 acres • Avoided – 2,562,000 acres • Excluded – 219,900 acres Manage ROWs outside of GRSG habitat but in population areas as follows: <u>Above-Ground Linear ROWs/SUAs</u> (Map 2.11) • Open – 1,925,900 acres • Avoided – 462,500 acres • Excluded – 81,700 acres		

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			Underground/Surface Linear ROWs/SUAs (Map 2.12) • Open – 2,337,000 acres • Avoided – 58,200 acres • Excluded – 74,900 acres Above-Ground Site-Type ROWs/SUAs (non-wind or solar) (Map 2.13) • Open – 2,337,100 acres • Avoided – 51,700 acres • Excluded – 81,300 acres		
No similar action.	All ROWs/SUAs in PHMA Make PHMA exclusion areas for new ROWs/SUAs.	All ROWs/SUAs in PHMA Mapped occupied GRSG habitat areas shall be exclusion areas for new ROWs/SUAs.	Above-Ground Linear ROWs/SUAs (e.g., transmission lines, distribution lines, telephone lines): PHMA within 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as an exclusion area for new above-ground linear ROWs/SUAs, unless there is a designated corridor present. PHMA beyond 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as an avoidance area for new above-ground linear ROWs/SUAs. Development within the avoidance areas could	All ROWs/SUAs in Habitat within SGMAs Management stipulations and conditions should focus on mitigating direct disturbance during construction. Should new research demonstrate indirect impacts on GRSG production, additional mitigation measures may be required. SGMAs would be designated as an avoidance area for new ROWs/SUAs. Apply stipulations as follows, as well as BMPs accepted by industry and state and federal agencies: • New permanent disturbance,	All SUAs in Core Habitat GRSG core areas would be managed as an exclusion area for new SUAs.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			occur if: • the GRSG population trend within the disturbance calculation area is stable; • the development meets noise restrictions; • the development meets tall structure restrictions; • the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on GRSG and their habitats (see mitigation decision in the GRSG section); and • the development does not exceed the 5 percent disturbance limit. Areas outside PHMA but within 1 mile of an occupied lek, if the lek is located within PHMA would be designated as an exclusion area for new above-ground linear ROWs/SUAs. Areas outside PHMA and between 1 and 4 miles of an occupied lek, if the lek is located within PHMA, would require	including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: • On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			surveys for GRSG habitat in areas that ecologically could provide GRSG habitat. If the area is determined to provide habitat that contributes to GRSG life-cycle, the area would be designated as an exclusion area. If inventories do not identify GRSG habitat, the area would be designated as an avoidance area (to address indirect impacts) for new ROWs/SUAs. Development within the avoidance areas could occur if: • the development meets noise restrictions; and • the development meets tall structure restrictions. <u>Above-Ground Site-Type ROWs/SUAs (not wind/solar) (e.g., communication towers, cell towers):</u> Areas outside PHMA but within 1 mile of an occupied lek that is located within PHMA would be designated as an exclusion area for new above-ground site-type ROWs/SUAs (excluding wind or solar). PHMA beyond 1 mile of an	15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within the	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			occupied lek, if the lek is located within PHMA, would be designated as an avoidance area for new above-ground site-type ROWs/SUAs. Development within the avoidance areas could occur if: • the development meets noise restrictions; • the development meets tall structure restrictions; • the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on GRSG and their habitats (see mitigation decision in the GRSG section); and • the development does not exceed the 5 percent disturbance limit. Exceptions to the avoidance area could be granted by the Authorized Officer if the new ROW/SUA were constructed entirely within the footprint of an existing site-type ROW/SUA or an existing designated communication site, if the new	SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. Engage in reclamation efforts as projects are completed. Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law.	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			development meets noise restrictions, and if the development does not occur during sensitive seasonal periods. <u>Underground/On-Ground ROWs/SUAs (e.g., buried and surface pipelines, roads)</u> PHMA would be designated as an avoidance area for new permanent underground and on-ground linear ROWs/SUAs. Development within the avoidance areas could occur if: • the GRSG population trend within the disturbance calculation area is stable; • the long-term development meets noise restrictions; • there are no above ground structures or operational facilities associated with the ROW/SUA; • the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on GRSG and their habitats (see mitigation decision in the GRSG section);		

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			and • the surface disturbance from the development does not exceed the 5 percent disturbance limit.		
No similar action.	Consider the following exceptions: • Within designated ROW/SUA corridors encumbered by existing ROW/SUA authorizations: new ROWs may be collocated only if the entire footprint of the proposed project (including construction and staging), can be completed within the existing disturbance associated with the authorized ROWs/SUAs. • Subject to valid, existing rights: where new ROWs/SUAs associated with valid existing rights are required, collocate new ROWs within existing ROWs or where it best minimizes GRSG impacts. 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,	Consider the following exceptions: • In mapped occupied GRSG habitat within 4 miles of active GRSG leks, there would be no exceptions to the exclusion area, unless legally required. • In mapped occupied GRSG habitat beyond 4 miles of active GRSG leks, subject to valid, existing rights: where new ROWs/SUAs associated with valid existing rights are required, co-locate new ROWs within existing ROWs or where it best minimizes GRSG impacts. 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,	The BLM may grant new FLPMA Title 5 ROWs for existing roads within PHMA so long as the road would remain in the existing condition and same physical location (as is, where is), unless a realignment would benefit GRSG. Seasonal restrictions (breeding and nesting, brood rearing, winter) would be placed on maintenance of new Title 5 ROWs to minimize disruption of GRSG, subject to the exceptions noted in the GRSG section. Where new ROWs/SUAs associated with valid existing rights are required within PHMA, collocate new ROWs as close as technically possible to existing ROWs or where it best minimizes GRSG impacts. Use existing roads, or realignments as described above, to access valid existing rights within PHMA that are not yet developed. If valid existing rights cannot be	For electrical transmission lines, and where feasible and consistent with federally required electrical separation standards, site new linear transmission features in existing corridors, or at a minimum, in concert with existing linear features in GRSG habitat. Siting linear features accordingly shall be deemed to be mitigation for the siting of that linear feature. Mitigation for the direct effects of construction is still required.	Consider the following exceptions: Existing designated ROW/SUA corridors crossing core areas could be retained in the following circumstance: • New SUAs may be issued in existing designated corridors for buried utilities with appropriate GRSG seasonal timing constraints applied.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional effective mitigation necessary to offset the resulting loss of GRSG.	and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional mitigation that has been demonstrated to be effective to offset the resulting loss of GRSG habitat.	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 PHMA. If that disturbance exceeds 5 percent for that area, then make additional effective mitigation necessary to offset the resulting loss of GRSG.		
Designate ROW corridors within GRSG habitat as identified on Map 2.16, Designated ROW Corridors–Alternative A (177,700 acres)	Designate ROW corridors as identified on Map 2.17, Designated ROW Corridors–Alternative B (130,200 acres). Undesignate ROW corridors that currently do not have any ROWs authorized in them (47,500 acres).	Undesignate all designated ROW corridors within GRSG mapped occupied habitat as identified on Map 2.18, Designated ROW Corridors–Alternative C. New ROWs are excluded from GRSG mapped occupied habitat.	Designate ROW corridors as identified on Map 2.19, Designated ROW Corridors–Alternative D : • Retain 89,400 acres of existing designated ROW corridor • Retain 48,400 acres of existing designated ROW corridor, but stipulate new developments be limited to underground use only • Undesignate 39,700 acres of existing designated ROW corridor • Designate 31,700 acres as new designated ROW corridor (where new corridors would be designated, there are existing lines or disturbance already in place)	No similar action.	Within GRSG core areas new transmission projects would be considered where it can be demonstrated that declines in GRSG populations could be avoided through project design and/or mitigation (e.g., raptor perch and nest deterrents). In conducting review of powerline transmission proposals, the use of the Framework for Sage-Grouse Impacts Analysis for Interstate Transmission Lines or other appropriate documents, is necessary. New transmission projects would be allowed within 1/2 mile on either side of existing 115 kV or larger transmission

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			While new ROWs can be developed within designated ROW corridors, the preference is to avoid GRSG habitat altogether. If this is not possible, development will be limited to the designated corridors. New designated corridors within PHMA will not exceed 3,500 feet in width. New above-ground ROWs within designated corridors will be constructed as close as technically feasible to existing above-ground lines to limit disturbance to the smallest footprint. Mitigation will be required for construction of new lines in designated corridors located in GRSG habitat in PHMA.		lines creating a corridor no wider than 1 mile. Construction should occur between July 1 and March 14 (or between July 1 and November 30 in winter concentration areas).
No similar action.	Evaluate and take advantage of opportunities, to remove, bury, or modify existing power lines within PHMA.	Same as Alternative B.	During renewal, amendment, or reauthorization of existing permits, evaluate and where appropriate, work with existing ROW holders to modify existing power lines within PHMA to mitigate impacts of existing powerlines, taking into account the potential impacts of the mitigation (relocation, burying,	No similar action.	Maintenance/replacement of existing structures would be allowed subject to valid and existing rights. Upgrades would be considered, subject to mandatory BMPs. Any new or replaced powerline or powerpole will be fitted with anti-perching devices.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			etc.) with the existing impacts of the line.		
All LUPs include management actions that require reclamation/restoration of disturbed areas that are no longer used in support of authorized actions.	Where existing leases or ROWs/SUAs have had some level of development (road, fence, well, etc.) and are no longer in use, reclaim the site by removing these features and restoring the habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Same as Alternative B.
No similar action.	<u>All ROWs/SUAs:</u> Make GHMA "avoidance areas" for new ROWs/SUAs.	No similar action.	<u>All ROWs/SUAs:</u> GHMA within 1 mile of an occupied lek, if the lek is located within GHMA, would be designated as an avoidance area for new ROWs (Maps 2.11, Avoidance and Exclusion Areas for Above Ground Linear ROWs–Alternative D, Map 2.12 and Map 2.13). Development within the avoidance areas could occur if: • the development (during construction and after) meets noise restrictions; • the structures remaining after development meet tall structure restrictions; • mitigation is implemented to offset impacts on GRSG and their habitats (see mitigation decision in the GRSG section); and	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>All SUAs:</u> Noncore areas would be managed as SUA avoidance areas for new SUAs, except for areas currently managed as SUA exclusion areas. Develop criteria that would be used to determine if a proposed SUA could be sited in an avoidance area or not.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter). GHMA within and beyond the 1 mile avoidance area would require discussion with the State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors). The avoidance area could be waived, except for the seasonal restrictions, if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.		
Most LUPs include a management action that encourages placement of new ROWs in designated utility corridors and/or collocation of new ROWs adjacent to existing ROWs.	Where new ROWs/SUAs are necessary in GHMA, co-locate new ROWs/SUAs within existing ROWs/SUAs, where possible.	No similar action.	Same as Alternative B.	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	Same as Alternative B.
Land Tenure (BLM land only): Make approximately 24,400 acres of land within in GRSG habitat available for FLPMA Section 203 sale (Map 2.21, Land Tenure Adjustments–	Land Tenure (BLM land only): Retain public ownership of PHMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for	Land Tenure (BLM land only): Same as Alternative B, without exceptions for disposal to consolidate ownership that would be beneficial to GRSG. No BLM or National Forest	Land Tenure (BLM land only): Retain public ownership of PHMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for additional or	Land Tenure (BLM land only): No similar action.	Same as Alternative B, except no specific acreages would apply.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Alternative A). In order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in FLPMA and in each LUP.	additional or more contiguous federal ownership patterns within PHMA. Under PHMA with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. As a final preservation measure consideration should be given to pursuing a permanent conservation easement. For BLM lands, approximately 5,490 acres of GHMA would still be available for disposal through FLMPA Section 203 sale (Map 2.22, Land Tenure Adjustments–Alternative B).	System lands within mapped occupied habitat would be available for land tenure adjustments (Map 2.23, Land Tenure Adjustments–Alternative C).	more contiguous federal ownership patterns within PHMA, so long as potential land tenure adjustments benefit GRSG, and do not negatively impact other federally listed threatened or endangered species. Under PHMA with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. For BLM lands, approximately 5,540 acres of GHMA would still be available for disposal through FLMPA Section 203 sale (Map 2.24, Land Tenure Adjustments–Alternative D).		
Most LUPs include a management action that allows for acquisition of lands that have important resource values including crucial wildlife habitat and land tenure adjustments to improve the manageability of public lands.	Where suitable conservation actions cannot be achieved in PHMA, seek to acquire state and private lands with intact federal mineral estate by donation, purchase or exchange in order to best conserve, enhance or restore GRSG habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Utilize GRSG habitat requirements for acquisition within core areas.
Withdrawal: Recommend approximately 498,700 acres of federal lands	Withdrawal: Recommend federal lands and non-federal lands with federal	Withdrawal: Recommend federal lands and non-federal lands with federal	Withdrawal: Do not recommend additional federal lands or non-federal lands	Withdrawal: Same as Alternative D.	Withdrawal: Recommend withdrawal from mineral entry based on risk to

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
and non-federal lands with federal mineral interests within GRSG habitat for mineral withdrawal (Map 2.26, Locatable Mineral Withdrawals–Alternative A).	mineral interests within PHMA for mineral withdrawal (3,650,900 acres of new Recommended withdrawals) (Map 2.27, Locatable Mineral Withdrawals–Alternative B).	mineral interests within mapped occupied GRSG habitat for mineral withdrawal (4,008,580 acres) (Map 2.28, Locatable Mineral Withdrawals–Alternative C).	with federal mineral interests within PHMA or GHMA for locatable mineral withdrawal.		the GRSG and its habitat in core areas from conflicting locatable mineral potential and development, and the ability to meet the Density Disturbance Calculation Tool thresholds.
No similar action.	In PHMA, do not recommend withdrawal proposals not associated with mineral activity unless the land management is consistent with GRSG conservation measures. (For example; in a recommended withdrawal for a military training range buffer area, manage the buffer area with GRSG conservation measures.)	Do not approve withdrawal proposals not associated with mineral activity unless the land management is consistent with GRSG conservation measures. (For example, in a recommended withdrawal for a military training range buffer area, manage the buffer area with GRSG conservation measures that have been demonstrated to be effective, or according to the joint BLM-DOD management.)	No similar action.	No similar action.	Recommend withdrawal proposals not associated with mineral activity, assessing the need to protect GRSG habitat versus the recommended withdrawal activity.
<u>Wind Energy Development</u> Evaluate wind energy development on a case-by-case basis, subject to other ROW/SUA management decisions. Manage ROWs/SUAs in GRSG habitat as follows (Map 2.8): • Open: 3,219,000 acres • Avoided: 67,200 acres • Excluded: 27,600 acres	<u>Wind Energy Development</u> Make PHMA exclusion areas for new leases or ROWs/SUAs permits (2,781,700 acres) (Map 2.9).	<u>Wind Energy Development</u> Do not site wind energy development in mapped occupied GRSG habitat (3,313,800 acres) (Map 2.10).	<u>Wind Energy Development</u> PHMA would be designated as exclusion areas for wind energy development (2,760,300 acres) (Map 2.30, Avoidance and Exclusion Areas for Wind Energy–Alternative D). Manage wind energy development in GRSG habitat as follows (Map 2.30): • Open – 522,500 acres	<u>Wind Energy Development</u> SGMAs would be available for wind energy development, though they would be designated as avoidance areas for wind energy development. Manage wind energy development in GRSG habitat as follows (Map 2.14): • Open: 632,200 acres • Avoided: 2,654,000 acres	<u>Wind Energy Development</u> Acreages associated with the Wyoming-Uinta and Wyoming-Blacks Fork population areas are included in the acreages for Alternative E1, as avoidance areas with the stipulation on development as described below. Wind Energy development is not allowed inside core areas

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Manage ROWs/SUAs outside of GRSG habitat but in population areas as follows (Map 2.8 • Open: 2,344,400 acres • Avoided: 50,800 acres • Excluded: 74,900 acres			• Avoided – 9,400 acres • Excluded – 2,781,900 acres Manage wind energy development outside of GRSG habitat but in population areas as follows (Map 2.30): Open – 1,925,200 acres • Avoided – 462,500 acres • Excluded – 82,400 acres Areas outside PHMA but within 1.0 mile of an occupied lek, if the lek is located within PHMA, would also be excluded from wind energy development. Areas outside PHMA but within 4 miles of an occupied lek located within PHMA (not including the 1.0 mile exclusion) would be designated as an avoidance area for wind energy development. Development within the avoidance areas can occur if: • the development meets noise restrictions; and • the development meets tall structure restrictions; Exclude wind energy	• Excluded: 27,600 acres Manage wind energy development outside of GRSG habitat but in population areas as follows (Map 2.14): • Open: 2,292,000 acres • Avoided: 103,200 acres • Excluded: 74,900 acres Apply stipulations as follows, as well as BMPs accepted by industry and state and federal agencies: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is	unless it can be sufficiently demonstrated that the development activity would not result in declines of core area populations. Sufficient demonstration of "no declines" should be coordinated with the WGFD and USFWS. Areas that are currently unavailable due to the need to protect sensitive resources would remain unavailable to wind energy development. Avoid the use of guy wires for turbines or MET tower supports within core areas. All existing and any new unavoidable guy wires should be marked with recommended bird deterrent devices. The siting of new temporary MET towers within core areas will be avoided within 2 miles of active GRSG leks, unless they are out of the direct line of sight of the active lek.

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Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			development within 1.0 mile of an occupied lek located in GHMA, whether mapped occupied GRSG habitat or not. The exclusion could be waived outside of GHMA if applicable seasonal restrictions are implemented (breeding and nesting, brood rearing, winter) and if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA. Development within GHMA beyond the 1.0 mile exclusion area would require discussion with the State of Utah during project implementation, and implementation of BMPs, including potential off-site mitigation in PHMA.	active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within the SGMA. • Manage SGMAs to avoid barriers to migration, if applicable. Engage in reclamation efforts as projects are completed. Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law.	

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	No similar action.	Site wind energy development at least 5 miles from occupied GRSG leks.	No similar action.	No similar action.	No similar action.
Mineral Development (applicable to all types of minerals and all minerals development activities)					
No similar action.	No similar action.	No similar action.	No similar action.	Within SGMAs, limit or ameliorate impacts through the use of the general stipulations identified in the GRSG section. Engage in reclamation efforts as projects advance or are completed. Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law. Prioritize areas for habitat improvement to make best use of mitigation funds.	No similar action.
Allow geophysical exploration in areas that are not closed to fluid mineral leasing. Geophysical exploration in GRSG habitat shall be subject to seasonal restrictions discussed above.	Allow geophysical exploration within PHMA to obtain exploratory information for areas outside of and adjacent to PHMA. Allow geophysical operations	No new geophysical exploration permits will be issued.	Allow geophysical exploration within mapped occupied GRSG habitat areas to obtain exploratory information. Geophysical exploration shall be subject to seasonal restrictions that preclude activities in	Allow geophysical exploration within SGMAs to obtain exploratory information. Geophysical exploration would be subject to the same seasonal (TL), NSO, and CSU stipulations as would be applied	In addition to Alternative A, geophysical exploration projects that are designed to minimize habitat fragmentation within core areas would be allowed, except were prohibited or restricted by

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	only by helicopter-portable drilling methods and in accordance with seasonal timing restrictions and/or other restrictions that may apply.		breeding, nesting, brood rearing and winter habitats during their season of use by GRSG.	to leases within SGMAs.	existing LUP decisions.
Nonenergy Leasable Minerals					
Under current management there are no designated PHMA. Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within GRSG habitat as follows (Map 2.33, Non-Energy Solid Leasable Minerals–Alternative A): • Open to Leasing Consideration – 3,870,080 acres • Closed to Leasing – 138,500 acres Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.	Close federal lands and non-federal lands with federal mineral interests within PHMA to nonenergy leasable mineral leasing. This includes not permitting any new leases to expand an existing mine. Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within GRSG habitat as follows (Map 2.34, Non-Energy Solid Leasable Minerals–Alternative B): • Open to Leasing Consideration – 667,280 acres • Closed to Leasing – 3,341,300 acres	Close federal lands and non-federal lands with federal mineral interests within mapped occupied GRSG habitat to nonenergy leasable mineral leasing (4,008,580 acres) (Map 2.35, Non-Energy Solid Leasable Minerals–Alternative C). This includes not permitting any new leases to expand an existing mine.	<u>Proposed Leases Associated with Surface Mining:</u> Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within GRSG habitat as follows (Map 2.36, Non-Energy Solid Leasable Minerals–Alternative D): • Open to Leasing Consideration – 705,680 acres • Closed to Leasing with Development by Surface Mining – 2,905,100 acres • Closed to All Leasing– 397,800 acres PHMA would be closed to new leasing or lease modification of surface nonenergy leasable minerals. This includes not issuing or modifying leases to expand existing mines that would result in surface mining. New or modified leases in areas	Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within GRSG habitat as follows (Map 2.37, Non-Energy Solid Leasable Minerals–Alternative E): • Open to Leasing Consideration – 3,870,080 acres • Closed to Leasing – 138,500 acres Consider leasing federal lands and non-federal lands with federal mineral interests within SGMAs for nonenergy leasable minerals. Limit or ameliorate impacts from mineral leasing and development through the use of the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied	Acreages associated with the Wyoming-Uinta and Wyoming-Blacks Fork population areas are included in the acreages for Alternative E1, though the stipulations on development will be as described below. In addition to Alternative A, core area would be open to new nonenergy leasing provided that the development of the lease would be consistent with the disturbance limitations as calculated by the Density Disturbance Calculation Tool and project implementation is developed with appropriate GRSG protections / management strategies. Within project areas where the Density Disturbance Calculation Tool analysis is approved, modification of existing leases is allowed without additional, density

Table 2.4
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			outside PHMA and within 4 miles of an occupied lek located within PHMA would have use stipulations attached. Development within these areas could occur if: • the development meets noise restrictions both during development and after development; and • the structures remaining after development meet tall structure restrictions. GHMA within 1 mile of an occupied lek, if the lek is located within GHMA, would have no surface disturbance stipulations associated with leasing of surface nonenergy leasable minerals. <u>Leases Associated with Underground Mining:</u> Consider leasing PHMA for nonenergy leasable minerals that would be extracted through underground mining. Require the following stipulations, as applicable, as part of any new mining leases or lease modification for underground nonenergy mines:	lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 –	analyses if the project is maintained within the original Density Disturbance Calculation Tool analysis area and Density Disturbance Calculation Tool disturbance acreage limits would be maintained through reclamation/restoration to suitable GRSG habitat.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• Appurtenant facilities would not be placed within PHMA, where technically feasible. • If placement of facilities outside of PHMA is not technically feasible while still protecting GRSG habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria: • No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located within 1 mile of an occupied lek that is located within PHMA. • the long-term development meets noise restrictions, including from supporting traffic along roads; • restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by GRSG; • the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); avoidance periods and necessary mitigation may be dependent on site specific conditions and noise levels;	Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent	

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Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• the surface disturbance from the development does not exceed the 5 percent disturbance limit; and • Additional mitigation methods applicable to the specific project are conducted, including off-site mitigation. If the above criteria cannot be met, do not grant new leases or modifications.	disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. • Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative.	
Under current management there are no designated GHMA. Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.	No similar action.	No similar action.	Consider leasing GHMA for nonenergy leasable minerals that would be extracted through underground mining. Minimize surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on GRSG habitats. Use additional, onsite or off-site mitigation to offset impacts as technically appropriate (determined by local options/needs). Determine which measures are needed to protect GHMA during activity level planning, which may include applying the criteria identified for PHMA.	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.

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Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			The above stipulations may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.		
Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.	No similar action.	No similar action.	Prospecting and exploration activities associated with nonenergy leasable minerals would be required to comply to the following criteria within PHMA: • Surface disturbance from the activity does not exceed the 5 percent disturbance limit; • The non-casual use activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • Any facilities associated with prospecting activities will be removed before the next breeding season; and • Any disturbances will be reclaimed.	Prospecting and exploration activities associated with nonenergy leasable minerals would be required to comply with the same stipulations identified for leasing and development, above.	Exploration licenses and prospecting permits would be considered with appropriate mitigating measures (e.g., TLs, Density Disturbance Calculation Tool thresholds).
No similar action. Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.	For existing nonenergy leasable mineral leases in PHMA, in addition to the solid minerals RDFs (Appendix I, Best Management Practices for Locatable Minerals and	Same as Alternative B.	For existing nonenergy leasable mineral leases in PHMA, apply the applicable solid minerals RDFs (Appendix I of the Draft LUPA/EIS) and Fluid Minerals RDFs (Appendix J of the Draft	No similar action.	Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for nonenergy solid leasables.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	Required Design Features for Other Solid Minerals, of the Draft LUPA/EIS), follow the same RDFs applied to Fluid Minerals (Appendix J, Required Design Features for Fluid Minerals, of the Draft LUPA/EIS), when wells are used for solution mining.		LUPA/EIS) when permitting site-specific projects on the lease (e.g., wells used for solution mining), unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; • Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed.		
Coal					
Leases Associated with Surface Mining: Under current management there are no designated PHMA. Approximately 22,900 acres of mapped occupied GRSG habitat is unacceptable for further consideration for leasing Map	Leases Associated with Surface Mining: In PHMA, find unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 (3,328,760 acres) (Map 2.40, Coal Suitability–Alternative B).	Leases Associated with Surface Mining: In mapped occupied habitat, find unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 (4,008,580 acres) (Map 2.41, Coal Suitability–Alternative C).	Leases Associated with Surface Mining: No areas of GRSG mapped occupied habitat would meet the unsuitability criterion 15. The 22,900 acres of mapped occupied GRSG habitat that are currently unsuitable for surface mining of coal resources would continue to	Leases Associated with Surface Mining: SGMAs would be considered to be suitable for further coal leasing consideration. However, special conditions, conservation measures, and pre-project mitigation requirements that include	Leases Associated with Surface Mining: Upon receipt of a coal lease application on which underground mining methods that include associated surface uses and impacts in GRSG core areas are foreseen, apply Criterion 15 and identify the

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
2.39, Coal Suitability–Alternative A). For all other areas, upon receipt of a coal lease application in GRSG habitat, the BLM will review criterion 15 set forth in 43 CFR 3461.5 to determine if the specific area being proposed for lease is suitable. If the BLM and the State of Utah "jointly agree" the federal lands do not contain GRSG habitat that is "of high interest to the state and which are essential for maintaining [this] priority wildlife…species," the area shall be considered suitable for further coal leasing consideration. The determination would be that "all or certain stipulated methods of coal mining would not have a significant long-term impact" on the GRSG. However, special conditions, conservation measures, and pre-project mitigation requirements that include successful criteria of habitat suitability and GRSG occupancy			be unsuitable. The remainder of the mapped occupied GRSG habitat would not be unsuitable for further consideration of coal leasing under surface mining methods. Where coal leasing that involves surface mining methods is considered in PHMA, apply the following stipulations: • new disturbance associated with the development does not result in total disturbance exceeding the 5 percent disturbance limit. • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • where possible, the development is located adjacent to the footprint of existing disturbances; and • extraction or crushing operations do not occur in GRSG habitat during seasonal	successful criteria of habitat suitability and GRSG occupancy could be required as identified during the leasing process to protect GRSG habitat. Impacts on GRSG within leasing areas would be limited or ameliorated through the use of the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is	area as suitable for further coal leasing consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the GRSG. Special conditions could be required as identified during the leasing process to protect GRSG resources.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
could be required as identified during the leasing process to protect GRSG habitat. If, upon receipt of a coal lease application, the BLM and the State of Utah "jointly agree" that the federal lands contain GRSG habitat that is "of high interest to the state and which are essential for maintaining [this] priority wildlife…species," the area shall be considered unsuitable for further coal leasing consideration.			restriction times; however, removal of material from existing stockpiles would be allowed.	active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	
Leases Associated with Underground Mining: Under current management there are no designated PHMA. Most LUPs do not identify areas that are specifically closed to coal leasing. Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing	Leases Associated with Underground Mining: Grant no new mining leases unless all surface disturbances (appurtenant facilities) are placed outside of the PHMA.	Leases Associated with Underground Mining: Same as Alternative B.	Leases Associated with Underground Mining: Consider leasing PHMA for coal that would be extracted through underground mining. Require the following stipulations, as applicable, as part of any new mining leases or lease modification for underground coal mines: • Appurtenant facilities would not be placed within PHMA,	Leases Associated with Underground Mining: Consider leasing SGMAs for coal that would be extracted through underground mining. Impacts would be limited or ameliorated through adherence to the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied	Leases Associated with Underground Mining: Upon receipt of a coal lease application proposing underground mining methods that include surface operations and impacts within GRSG core areas, apply Criterion 15 and identify the area as suitable for further coal leasing consideration after consultation with the state and

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
activities, others have coal-specific stipulations, or mineral specific standards and guidelines. Surface use stipulations may also be identified during site-specific NEPA, or be identified through Unsuitability Determination at 43 CFR 3461.			where technically feasible. • If placement of facilities outside of PHMA is not technically feasible while still protecting GRSG habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria: ○ No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located within 1 mile of an occupied lek that is located within PHMA. ○ the long-term development meets noise restrictions, including from supporting traffic along roads; ○ restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by GRSG; ○ the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); avoidance periods and necessary mitigation may be dependent on site specific conditions and noise levels; ○ Surface disturbance from the	lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 –	where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the GRSG. Stipulated methods may include (but not limited to) underground mining methods with no placement of surface facilities. Unsuitability is not applied to underground operations without surface impacts (43 CFR 3461.1). This would be consistent with BLM IM WY-2012-019, which says that the BLM will assess potential impacts on GRSG through the NEPA process, and that the State regulatory agency would apply this mitigation, as well protective measures consistent with the State Policy for solid leasable mining action at the permitting stage.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			development does not exceed the 5 percent disturbance limit; and ○ Additional mitigation methods applicable to the specific project are conducted, including off-site mitigation. If the above criteria cannot be met, do not grant new leases or modifications.	Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. • Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative.	
Under current management there are no designated GHMA. Most LUPs do not identify areas that are specifically closed to coal leasing. Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have coal-specific stipulations, or minerals-specific standards and guidelines. Surface use stipulations may also be identified during site-specific NEPA, or be identified through Unsuitability Determination at	No similar action.	No similar action.	Consider leasing GHMA for coal that would be extracted through underground mining. Minimize surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on GRSG habitats. Use additional, onsite or off-site mitigation to offset impacts as technically appropriate (determined by local options/ needs). Determine which measures are needed to protect GHMA during activity level planning, which may include applying the criteria identified for PHMA.	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
43 CFR 3461.			The above restrictions may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.		
Under current management there are no designated PHMA. Exploration activities are required to comply with season stipulations (i.e., brooding/nesting and winter) included in existing plans, where such exists.	No similar action.	No similar action.	Exploration activities within PHMA needed to meet data adequacy standards associated with potential coal leasing would be required to comply to the following criteria: • Surface disturbance from the activity does not exceed the 5 percent disturbance limit; • The activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • Any facilities associated with exploration activities will be removed before the next breeding season; and • Any disturbances will be reclaimed.	Exploration activities within SGMAs would be required to comply with the same stipulations identified for leasing and development, above.	Coal exploration activities are allowed in GRSG core areas if acceptable after density calculation with applicable stipulations.
No similar action.	For coal mining operations on existing leases: Underground mining: in PHMA, place any new appurtenant facilities outside of PHMA. Where new appurtenant facilities associated with the	Same as Alternative B.	Same as Alternative B	No similar action.	Upon receipt of a coal lease application proposing underground mining methods that include surface operations and impacts within GRSG core area, apply Criterion 15 and identify the area as suitable for further coal leasing

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	existing lease cannot be located outside the PHMA, collocate new facilities within existing disturbed areas. If this is not possible, then build any new appurtenant facilities to the absolute minimum standard necessary.				consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the GRSG. Stipulated methods may include (but not limited to) underground mining methods with no placement of surface facilities. Unsuitability is not applied to underground operations without surface impacts (43 CFR 3461.1) This would be consistent with BLM IM WY-2012-019 says that BLM will assess potential impacts on GRSG through the NEPA process, and that the State regulatory agency would apply this mitigation, as well protective measures consistent with the State Policy for solid leasable mining action at the permitting stage.
All LUPs include management actions based on specific program direction. These	For coal mining operations on existing leases:	Same as Alternative B.	Same as Alternative B	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No	No similar action.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
management actions require the BLM to consider measures that would reduce or eliminate impact of human activities during activity level planning.	In GHMA, apply minimization of surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on important seasonal GRSG habitats. Apply these measures during activity level planning. Use additional, effective mitigation to offset impacts as appropriate (determined by local options/needs).			specific management actions are provided for this habitat.	
Locatable Minerals					
Under current management there are no designated PHMA. Approximately 498,700 acres of mapped occupied GRSG habitat are recommended for withdrawal from mineral entry (Map 2.26).	In PHMA, recommend withdrawal from mineral entry based on risk to the GRSG and its habitat from conflicting locatable mineral potential and development (3,650,900 acres) (Map 2.27). • Make any existing claims within the withdrawal area subject to validity exams or buy out. Include claims that have been subsequently determined to be null and void in the recommended withdrawal. • In plans of operations required prior to any	In mapped occupied habitat, recommend withdrawal from mineral entry based on risk to the GRSG and its habitat from conflicting locatable mineral potential and development (4,008,580 acres) (Map 2.28). Everything else, same as Alternative B.	PHMA and GHMA that are not already withdrawn or recommended for withdrawal would be available for locatable mineral entry. To the extent allowable by law, work with claimants to apply the seasonal restrictions and use restrictions for PHMA and GHMA identified in the GRSG section. To the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development in PHMA	GRSG habitat within or outside of SGMAs that is not already withdrawn or recommended for withdrawal would be available for locatable mineral entry. To the extent allowable by laws and regulations and to the extent the claimant would be willing to apply the standards, impacts would be limited or ameliorated through the use of the following conservation measures: • New permanent disturbance, including structures, fences,	Recommend withdrawal from mineral entry based on risk to the GRSG and its habitat in core areas from conflicting locatable mineral potential and development, and the ability to meet the Density Disturbance Calculation Tool thresholds. Operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact GRSG core area habitats. The Authorized Officer may convey to the operator suggested

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	proposed surface disturbing activities, include the following: ○ Additional, effective mitigation in perpetuity for conservation (In accordance with existing policy, BLM IM 2008-204). Example: purchase private land and mineral rights or severed federal mineral rights within the PHMA and deed to US Government). ○ Consider seasonal restrictions if deemed effective.		within leks, nesting habitat, and early brood-rearing habitat and as possible, limit surface disturbance to under the 5 percent disturbance limit, or provide for enhancement of PHMA through on-site and/or off-site mitigation. Regardless of whether agreements with the claimant incorporates the 5 percent disturbance limit, disturbance from locatable mineral development would be included as disturbance when calculating disturbance for other land uses.	and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding.	conservation measures, based upon the notice or plan level operations and the geographic area of those operations [also called the project area which is defined in 43 CFR 3809.5]. These suggested conservation measures include measures that support the overall goals and objectives of the core population area strategy, though measures listed for protection of GRSG breeding, nesting, brood-rearing, and wintering may not be reasonable or applicable to the BLM's determination of whether the proposed operations will cause unnecessary or undue degradation under 43 CFR 3809.5. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory. Notices or Plans of Operation, or modifications thereto, submitted following the issuance of this guidance: As

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see	part of the 15 day completeness review of notices [or modifications thereto] and 30 day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation would take place should be reviewed for overlap of GRSG core areas in the corporate geographic information systems (GIS) database. If there is overlap, the BLM/Forest Service Authorized Officer may notify the operator of ways that they may minimize impacts on core area habitats and request the operator to amend its notice or plan to include such measures. The request to amend the submitted notice or plan of operations must make clear that the operator's compliance is not mandatory and that including such measures is not a requirement for completeness of either the notice or a plan of operations, nor is it a condition of

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. • Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative.	acceptance of the notice or approval of the plan of operations. <u>Existing Notices and Approved Plans of Operations under 43 CFR 3809[1]:</u> For projects that overlap core areas, operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact core area habitats. The Authorized Officer may convey to the operator suggested conservation measures, based upon the notice or plan level operations and the geographic area of those operations [also called the project area which is defined in CFR 3809.5]. These suggested conservation measures include measures that support the overall goals and objectives of the core population area strategy may

1 These regulations apply to the exploration and development of locatable minerals on placer claims and lode claims, as well as exploration on tunnel sites and mineral processing operations on mill sites. The location and maintenance of claims and sites are regulated under 43 CFR Subpart 3830.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					not be reasonable or applicable to the BLM's determination of whether the proposed operations will cause unnecessary or undue degradation under 43 CFR 3809.5. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory. Notices or Plans of Operation, or modifications thereto, submitted following the issuance of this guidance: As part of the 15 day completeness review of notices [or modifications thereto] and 30 day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation would take place should be reviewed for overlap of GRSG core areas in the corporate GIS database. If there is overlap, the BLM Authorized Officer may notify the operator of ways that they

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					may minimize impacts on core area habitats and request the operator to amend its notice or plan to include such measures. The request to amend the submitted notice or plan of operations must make clear that the operator's compliance is not mandatory and that including such measures is not a requirement for completeness of either the notice or a plan of operations, nor is it a condition of acceptance of the notice or approval of the plan of operations.
No similar action.	BMPs outlined in Appendix I of the Draft LUPA/EIS would be applied as appropriate and to the extent allowable by law within PHMA.	Same as Alternative B.	Apply the BMPs identified in Appendix E (of the NTT report) (included as Appendix I of the Draft LUPA/EIS), to the extent allowable by law, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or	No similar action.	Where applicable and technically feasible, BMPs would be applied as appropriate and to the extent allowable by law within core GRSG habitat for Locatable Minerals.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			BMP is determined to provide equal or better protection for GRSG or its habitat; • Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed.		
Mineral Materials					
Manage mineral materials in GRSG habitat as follows (Map 2.42, Saleable Minerals Materials–Alternative A): • open to mineral materials development: 3,935,080 acres • closed to mineral materials development: 73,500 acres Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have mineral-specific standards and guidelines. Surface use restrictions may also be identified during site-specific NEPA.	Manage mineral materials in GRSG habitat as follows (Map 2.43, Saleable Minerals Materials–Alternative B): • open to mineral materials development: 668,580 acres • closed to mineral materials development: 3,340,000 acres	Manage mineral materials in GRSG habitat as follows (Map 2.44, Saleable Minerals Materials–Alternative C): • open to mineral materials development: 0 acres • closed to mineral materials development: 4,008,580 acres	Manage mineral materials in GRSG habitat as follows (Map 2.45, Saleable Minerals Materials–Alternative D): • open to mineral materials development: 688,280 acres • closed to commercial mineral materials development, open to non-commercial: 2,967,500 acres • closed to mineral materials development: 352,800 acres	Manage mineral materials in GRSG habitat as follows (Map 2.46, Saleable Minerals Materials–Alternative E): • open to mineral materials development: 3,935,080 acres • closed to mineral materials development: 73,500 acres	Acreages for mineral materials under Alternative E2 are reported under E1. The portions of the decision area specific to Wyoming are included in those acres, though the stipulations, as applicable, are derived from Alternative E2.
Same as previous decision.	Close PHMA to mineral material sales.	Close mapped occupied habitat to mineral material sales.	Areas, whether within mapped occupied habitat or not, within 1 mile of an occupied lek in either PHMA or GHMA would be	SGMAs would be open to mineral materials. Impacts would be limited or ameliorated through the use of	Core areas would be open to mineral material exploration, sales, and free use permits, except in areas that are closed

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			closed new to mineral material development. PHMA beyond 1 mile of an occupied lek that is located within PHMA would be closed to commercial development of mineral materials. Non-commercial development of mineral materials (e.g., community pits, free-use permits) within PHMA beyond 1 mile of an occupied lek, if the lek is located within PHMA, could only occur if the following conditions are met: • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • new disturbance associated with the development does not result in total disturbance exceeding the 5 percent disturbance limit. • where possible, the	the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the GRSG using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May	to leasing or NSO due to the need to protect other resources values. In core areas, locate, where possible, mineral material mining sites in or adjacent to existing disturbances to minimize number of disturbances, in order to not exceed the 1 site per 640 acres and Density Disturbance Calculation Tool 5 percent disturbance threshold. Mineral material extraction or crushing operations would be prohibited in core areas during seasonal restriction times; however, removal of material from existing stockpiles would be allowed.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			development is located adjacent to the footprint of existing disturbances; and • extraction or crushing operations do not occur in GRSG habitat during seasonal restriction times; however, removal of material from existing stockpiles would be allowed. • new developments are located within 0.25 mile of existing roads. Development of mineral materials within GHMA beyond 1 mile of an occupied lek, if the lek is located within GHMA, could occur if: • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter). PHMA and GHMA beyond the 1 mile closures would require discussion with the State of Utah	15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow	

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors, etc.). The stipulations within GHMA (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site mitigation coordinated with the proponent, BLM/Forest Service and the State of Utah is successfully completed in PHMA.	and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	
No similar action.	In PHMA, restore mineral materials pits no longer in use to meet GRSG habitat conservation objectives.	Same as Alternative B.	No similar action.	No similar action.	Consider restoration of saleable mineral pits no longer in use to meet GRSG habitat conservation objectives. Emphasis needs to be given to reclamation/restoration of core areas as a viable long term goal to improve the GRSG habitat.
Fluid Minerals					
Manage fluid mineral leasing in GRSG habitat as follows (Map 2.48, Fluid Minerals Leasing Categories–Alternative A): • open to leasing, subject to standard stipulations: 1,333,380 acres • open to leasing, subject to CSU and/or timing (TL)	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.49, Fluid Minerals Leasing Categories–Alternative B): • open to leasing, subject to standard stipulations: 246,680 acres • open to leasing, subject to CSU and/or TL stipulations:	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.50, Fluid Minerals Leasing Categories–Alternative C): • open to leasing, subject to standard stipulations: 0 acres • open to leasing, subject to CSU and/or TL stipulations: 0 acres	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.51, Fluid Minerals Leasing Categories–Alternative D): • open to leasing, subject to standard stipulations: 0 acres • open to leasing, subject to CSU and/or TL stipulations: 1,829,980 acres	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.52, Fluid Minerals Leasing Categories–Alternative E): open to leasing, subject to standard stipulations: 247,200 acres • open to leasing, subject to CSU and/or TL stipulations:	Acreages for fluid minerals under Alternative E2 are reported under E1. The portions of the decision area specific to Wyoming are included in those acres, though the stipulations, as applicable, are derived from Alternative E2.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
stipulations: 1,300,400 acres • open to leasing, subject to NSO stipulations: 483,500 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 565,800 acres Manage fluid minerals outside of GRSG habitat but in population areas as follows: • open to leasing, subject to standard stipulations: 893,100 acres • open to leasing, subject to CSU and/or TL stipulations: 580,700 acres • open to leasing, subject to NSO stipulations: 594,100 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 234,500 acres	255,900 acres • open to leasing, subject to NSO stipulations: 24,400 acres • closed to leasing: 3,341,300 acres • no fluid minerals allocation: 43,400 acres • planning decision not mapped: 96,900 acres Manage fluid minerals outside of GRSG habitat but in population areas the same as Alternative A.	• open to leasing, subject to NSO stipulations: 0 acres • closed to leasing: 3,821,580 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 0 acres Manage fluid minerals outside of GRSG habitat but in population areas the same as Alternative A.	• open to leasing, subject to NSO stipulations: 1,853,100 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 0 acres Manage fluid minerals outside of GRSG habitat but in population areas as follows: • open to leasing, subject to standard stipulations: 761,100 acres • open to leasing, subject to CSU and/or TL stipulations: 765,300 acres • open to leasing, subject to NSO stipulations: 598,800 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 177,200 acres	2,637,580 acres • open to leasing, subject to NSO stipulations: 688,100 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 110,200 acres Manage fluid minerals outside of GRSG habitat but in population areas as follows: • open to leasing, subject to standard stipulations: 858,600 acres • open to leasing, subject to CSU and/or TL stipulations: 630,100 acres • open to leasing, subject to NSO stipulations: 594,100 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 219,600 acres	Exceptions waivers, and modifications to lease stipulations, COAs, terms and conditions, etc. for GRSG will continue to be considered on a case-by-case basis consistent with approved LUPs and other BLM/Forest Service policy and regulations as they relate to exceptions within GRSG core and non-core areas.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Unleased Federal Fluid Mineral Estate					
Unleased Areas within PHMA: Under current management there are no designated PHMA. Fluid mineral leasing in GRSG mapped occupied habitat will be managed as discussed above. Most LUPs include a management action that prohibits surface disturbing or other disruptive within GRSG breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.25 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.	Unleased Areas within PHMA: Close PHMA areas to fluid mineral leasing. Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within PHMA.	Unleased Areas within PHMA: No new leases or permits will be issued in mapped occupied GRSG habitat. Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within mapped occupied habitat.	Unleased Areas within PHMA: Areas outside PHMA but within 1 mile of an occupied lek, if the lek is located within PHMA, would be open to leasing fluid minerals, subject to NSO stipulations. PHMA within 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as open to oil and gas leasing subject to NSO stipulations (see Appendix K, Stipulations Associated with Land Use Authorizations, of the Draft LUPA/EIS for modifications, waivers, and exceptions). PHMA beyond 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as open to oil and gas leasing subject to CSU stipulations (see list below) and the following timing stipulations: • Winter habitat from Nov 15 – Mar 15 • Brood rearing habitat from Apr 15 – Jul 15 • Breeding and nesting habitat from Feb 15 – Jun 15	Unleased Areas within SGMAs Habitat: SGMAs would be designated as open to oil and gas leasing subject to NSO and CSU stipulations (see list below) and the timing stipulations. Habitat within SGMAs would have no permanent disturbance (NSO stipulation) within 1 mile of an occupied lek, if the lek is located with an SGMA, unless the disturbance is not visible to the GRSG using the lek (see Appendix K of the Draft LUPA/EIS for modifications, waivers, and exceptions). Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats (specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist): • Winter habitat from Nov 15 – Mar 15. • Nesting and brood-rearing	Unleased Areas within Core Areas: Fluid mineral leasing would be allowed in core areas, except in areas that are unavailable for leasing due to the need to protect other sensitive resources (Map 2.52). Work with project proponents to site their projects in locations that minimize impacts on sensitive resources. If the lease is partially or entirely within core areas, subject to topographic and other environmental constraints, require any development within core habitat to be placed in the area least harmful to GRSG based on vegetation, topography, or other habitat features. GRSG leks inside core areas, surface occupancy and surface disturbing activities would be prohibited on or within a six tenths (0.6) mile radius of the perimeter of occupied GRSG leks. Additionally, disruptive

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			Where leasing/development is allowed within PHMA, development could occur if it adhered to the following CSU stipulations: • the development meets noise restrictions; • the development meets tall structure restrictions; • operators must submit a site-specific plan of development for roads, wells, pipelines and other infrastructure prior to any development being authorized; this plan should outline how development on the lease will limit habitat fragmentation; and • the development does not exceed the 5 percent disturbance limit. Areas outside PHMA and within 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as open to oil and gas leasing subject to CSU stipulations. Development in these areas could occur if it adhered to the following CSU stipulations:	areas from Apr 1 – Aug 15. • On leks from Feb 15 – May 15 Where leasing/development is allowed within SGMAs, impacts from development would be limited or ameliorated through the use of the following CSU stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise)	activity is restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied GRSG leks from 6:00 pm to 8:00 am from March 1 – May 15, except for production/maintenance activities for existing permits. Noise levels at the 0.6 mile perimeter of the lek, should not exceed 10 decibels above ambient noise. Surface disturbing and/or disruptive activities are prohibited from March 15– June 30 within core areas, regardless of distance from a lek and the suitability of the habitat. Where credible data support different timeframes for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates. Within winter concentration areas, surface disturbing and/or disruptive activities in GRSG winter concentration areas are prohibited from December 1– March 14 to protect priority

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• the development meets noise restrictions; and • the development meets tall structure restrictions. The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as lease notices to all new leases in PHMA and would be applied during the permitting process as COAs, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; • Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed.	• Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in	populations of GRSG that use these winter concentration habitats (independent of habitat suitability). Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of GRSG that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability). Work with proponents to limit project related noise where it would be expected to reduce functionality of habitats that support core area populations. Evaluate the potential for limitation of new noise sources on a case-by-case basis as appropriate. Forest Service's

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			A minimum lease size of 640 contiguous acres of federal mineral estate would be applied within PHMA. Smaller parcels may be leased only when 640 contiguous acres of federal mineral estate is not available and leasing is necessary to remain in compliance with laws, regulations and policy; for example, to protect the federal mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.	habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	near-term goal is to limit noise sources that would be expected to negatively impact core area GRSG populations and to continue to support the establishment of ambient baseline noise levels for occupied core area leks. As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate limitations will be implemented where necessary to minimize potential for noise impacts on GRSG core population behavioral cycles. A minimum lease size of 640 contiguous acres of federal mineral estate would be applied within core areas. Smaller parcels may be leased only when 640 contiguous acres of federal mineral estate is not available and leasing is necessary to remain in compliance with laws, regulations and policy; for example, to protect the federal

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.
Under current management there are no designated GHMA. Fluid mineral leasing in GRSG mapped occupied habitat will be managed as discussed above.	No similar action.	No GHMA are identified.	<u>Unleased Areas within GHMA:</u> Any areas, whether within mapped occupied GRSG habitat or not, within 1 mile of an occupied lek, if the lek is located within GHMA, would be open to leasing fluid minerals, subject to NSO stipulations. GHMA beyond 1 mile of an occupied lek, if the lek is located within GHMA, would be designated as open to oil and gas leasing subject to CSU stipulations (see list below) and the following timing stipulations: • Winter habitat from Nov 15 – Mar 15 • Brood rearing habitat from Apr 15-Jul 15 • Breeding and nesting habitat from Feb 15-Jun 15 Where leasing/development is allowed within GHMA, development could occur if it adhered to the following CSU stipulations:	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>Unleased Areas within Non-Core Areas:</u> GRSG leks in non-core areas, surface occupancy and Surface occupancy and surface disturbing activities would be prohibited or restricted on or within a one-quarter (0.25) mile radius of the perimeter of occupied GRSG leks. In nesting/early brood-rearing habitat in non-core areas, surface disturbing and/or disruptive activities are limited from March 15–June 30 to protect GRSG nesting and early brood rearing habitats within 2 miles of the lek perimeter of any occupied lek located outside core areas. Where credible data support different timeframes for this restriction, dates may be expanded by 14 days prior or subsequent to the above dates.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• the development meets noise restrictions; and • the development meets tall structure restrictions. GHMA within and beyond the 1.0 mile NSO area would require collaboration with the State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors). The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as lease notices to all new leases in GHMA and would be applied as COAs during the permitting process, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat;		

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed. The stipulations within GHMA (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.		
Leased Federal Fluid Mineral Estate					
No similar action.	In PHMA, apply the following conservation measures through RMP implementation decisions (e.g., approval of an APD, Sundry Notice, Master Development Plans, Surface Use Plan of Operations {Forest Service}, etc.) 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	Apply the following conservation measures as COAs at the project and well permitting stages, and through RMP 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	In PHMA, apply the following conservation measures through implementation decisions (e.g., approval of an APD, Sundry Notice, Master Development Plans, Surface Use Plan of Operations {Forest Service}, etc.) 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	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The GRSG conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect GRSG and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Overall consideration shall be given to minimizing the impact on GRSG through a project design that avoids, minimizes, reduces, rectifies, and/or adequately compensates for direct and indirect impacts on GRSG habitat or use and includes applicable and technical COAs. Selection and application of these measures shall be based on current science and research on the effect on important breeding, nesting, brood-rearing, and wintering areas. For proposed operations in core areas, the

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	CFR 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.	conformance with the approved LUP.	existing rights; and 2. Whether the action is in conformance with the approved LUP.		Surface Use Plan of Operations (see 43CFR 3162.3-1(f)) shall address, at a minimum, the anticipated noise, density and amount of disturbance, mechanical movement (e.g., pump jacks), permanent and temporary facilities, traffic, phases of development over time, offsite mitigation, and expected periods of use associated with the proposed project. Seasonal habitats or project features related to potential GRSG impacts that are not addressed in the Surface Use Plan of Operations based on site-specific or project-specific considerations shall be noted in the project file, along with a rationale for not including them. In this process evaluate, among other things: 1. Whether the conservation measure is "reasonable" (43 CFR 3101.1-2) and consistent with valid existing rights; 2. Whether the action is in conformance with the approved LUP; and the

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					effectiveness of the proposed mitigation measures. In cases where federal oil and gas leases have been issued without adequate stipulations for the protection of GRSG or their habitats being provided in the applicable LUP decision, as revised or amended, consider their inclusion as permit COAs when approving exploration and development activities through completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA.
No similar action. Measures that reduce or eliminate impacts on GRSG are considered on a case-by-case basis during implementation-level planning.	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	Same as Alternative B.	Apply the 5 percent disturbance limitation for development within PHMA. Where GRSG conservation opportunities exist, work in collaboration with operators in PHMA and GHMA to minimize habitat loss, fragmentation, and direct and indirect effect on GRSG and habitat.	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The GRSG conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect GRSG and its habitat. Provisions of this plan would	Many GRSG seasonal habitats within and outside of core areas are encumbered by valid existing rights, such as mineral leases or existing ROW. Fluid mineral leases often will include less stringent lease stipulations than the timing, distance, and density requirements identified for consideration in this policy. Agencies (BLM/Forest Service)

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	per section with no more than 3 percent surface disturbance in that section. • If the entire lease is within the 4 mile lek perimeter, limit permitted disturbances to 1 per section with no more than 3 percent 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.		Issue Written Orders of the Authorized Officer (43 CFR 3161.2) requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize effect on GRSG populations and habitat. In areas where GRSG populations have been substantially diminished, and where few birds remain, include actions in the authorization (e.g., siting/designing infrastructure, hastened habitat restoration) that will minimize habitat loss and promote restoration of habitat when development activities cease. In addition to considering opportunities for onsite mitigation, collaboration with project proponents to develop and consider implementing appropriate off-site mitigation that the BLM/Forest Service, collaborating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects.	not be added to the measures identified each specific project.	will work with proponents holding valid existing leases that include less stringent lease stipulations than the timing, distance, and density restrictions described within this plan to ensure that measurable GRSG conservation objectives such as, but not limited to, consolidation of infrastructure to reduce habitat fragmentation and loss, and effective conservation of seasonal habitats and habitat connectivity to support population management objectives set by the WGFD, are included in all project proposals.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			Where possible, off-site mitigation should occur within the same population area where the impact is incurred. When developing such mitigation, consider compensating for the short-term and long-term direct and indirect loss of GRSG and its habitat. For geophysical exploration activities, include seasonal TLs and RDFs as permit COAs to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas. Ensure authorizations under Onshore Oil and Gas Order No. 7 (Disposal of Produced Water) consider the potential impacts on GRSG from West Nile virus and develop appropriate mitigation measures and apply RDFs (Appendix L, Required Design Features for Preventing West Nile Virus, of the Draft LUPA/EIS).		
Most LUPs include a management action that	Apply a seasonal restriction on exploratory drilling that	Apply a seasonal restriction on exploratory drilling that	Same as Alternative B.	Allow exploratory drilling within SGMAs, subject to the	GRSG nesting/early brood-rearing habitat in core areas:

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
prohibits surface disturbing or other disruptive within GRSG breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.25 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.	prohibits surface-disturbing activities during the nesting and early brood-rearing season in all PHMA during this period.	prohibits surface-disturbing activities during the nesting and brood-rearing season in mapped occupied GRSG habitat during this period. This seasonal restriction shall also apply to related activities that are disruptive to GRSG, including vehicle traffic and other human presence.		same seasonal, NSO and CSU stipulations as would be applied to leases within SGMAs.	• Surface disturbing and/or disruptive activities are prohibited from March 15–June 30 within core areas regardless of distance from a lek and the suitability of the habitat. • Where credible data support different timeframes for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.
No similar action.	Closely examine the applicability of categorical exclusions in PHMA. If extraordinary circumstances review is applicable, determine whether those circumstances exist.	Same as Alternative B.	No similar action.	No similar action.	Within core and non-core areas, BLM/Forest Service should closely examine the applicability of categorical exclusions. If extraordinary circumstances review is applicable, BLM/Forest Service should determine whether those circumstances exist.
No similar action.	Complete Master Development Plans in lieu of APD-by-APD processing for all but wildcat wells.	Same as Alternative B.	Within PHMA, operators must submit a site-specific plan of development for roads, wells, pipelines and other infrastructure prior to any development being authorized. The BLM/Forest	No similar action.	Consider or encourage Master Development Plans for projects involving multiple proposed disturbances within a lease or core area.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			Service will evaluate the plan through the NEPA process.		
No similar action.	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3 percent for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of GRSG (see Objectives). ○ When necessary, conduct additional, effective mitigation in 1) PHMA or – less preferably – 2) GHMA (dependent upon the area-specific ability to increase GRSG populations). ○ 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 MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17).	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3 percent per section for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of GRSG (see Objectives). ○ When necessary, conduct additional, effective mitigation in PHMA. ○ 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 MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17).	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 5 percent for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of GRSG (see Objectives). ○ When necessary, conduct additional, effective mitigation in 1) PHMA or – less preferably – 2) GHMA (dependent upon the area-specific ability to increase GRSG populations). ○ Conduct additional, effective mitigation prioritized first onsite where the impacts occurred, then within the disturbance calculation area, then within the same population area where the impact is realized, and if not possible then conduct mitigation within the same MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17).	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The GRSG conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect GRSG and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Within core areas, when mitigation is required, the agencies in coordination with WGFD and partners would use the following mitigation hierarchy: in-kind and onsite mitigation as first priority or in-kind mitigation offsite mitigation as second priority. When additional offsite mitigation is necessary, conduct it within the same population area where the impact occurs if possible or, if that is not possible, within the same MZ per 2006 WAFWA Strategy as the impact.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action. Current policy allows unitization to occur on a case-by-case basis.	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.	Same as Alternative B.	Encourage 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.	No similar action.	Within core areas, encourage unitization as a means of minimizing adverse impacts on GRSG to reduce fragmentation and surface disturbing and disruptive activities.
Most LUPs include a management action that allows for acquisition of lands that have important resource values including crucial wildlife habitat and land tenure adjustments to improve the manageability of public lands. In order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in the LUPs.	Identify areas where acquisitions (including federal mineral rights) or conservation easements, would benefit GRSG habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Same as Alternative B.
No similar action. Current policy provides for the establishment of reclamation bonds on a case-by-case basis.	For future actions, require a full reclamation bond specific to the site in accordance with 43 CFR 3104.2, 3104.3, 3104.5, and 36 CFR 228.109. Insure bonds are sufficient for costs relative to reclamation (Connelly et al. 2000 and Hagen et al. 2007)	Same as Alternative B.	Same as Alternative B.	No similar action.	Require reclamation bond commensurate with the scope, scale, size of the project within core areas. Partial bonding may be appropriate depending on the above factors.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	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 will perform the work.				
No similar action. Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.	Make applicable RDFs (see Appendix J of the Draft LUPA/EIS) mandatory as COAs within PHMA.	Same as Alternative B.	The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as mandatory COAs during development of a lease, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; • Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed.	No similar action.	Where applicable and technically feasible, apply BMPs as mandatory COAs within core GRSG habitat for Fluid Minerals, Lands and Realty, West Nile, and Noise.
No similar action.	No similar action.	Any oil, gas, geothermal activity will be conducted to maximize	No similar action.	No similar action.	No similar action.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		avoidance of impacts, based on evolving scientific knowledge of impacts.			
Mineral Split-Estate					
Under current management, there are no PHMA. Decision included in current management plans apply to both federal surface and mineral estate.	Where the federal government owns the mineral estate in PHMA, and the surface is in non-federal ownership, apply the conservation measures applied on public lands.	Same as Alternative B.	Same as Alternative B.	Because the surface estate is the key to conservation of habitat, the GRSG habitat has been mapped according to surface ownership. However, implementation of his alternative will have to accommodate the dominant nature of the mineral estate, and react accordingly.	Where the federal government owns the mineral estate, and the surface is non-federal ownership, apply the same GRSG conservation measures as applied on public land, for core and non-core areas respectively, working cooperatively with permittees, lessees and other surface landowners.
No similar action. Under current management, there are no PHMA. Decision included in current management plans apply to both federal surface and mineral estate. Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.	Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PHMA, apply appropriate Fluid Mineral RDFs (see Appendix J of the Draft LUPA/EIS) to surface development.	Same as Alternative B.	Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PHMA, the RDFs identified in Appendix J of the Draft LUPA/EIS would be applied to surface developments, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or	No similar action.	Where the federal government owns the surface, and the mineral estate is in non-federal ownership, apply the same GRSG conservation measures as applied on public land, for core and non-core areas respectively. Working cooperatively with permittees, lessees and other surface landowners.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			BMP is determined to provide equal or better protection for GRSG or its habitat; • Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed.		
Areas of Critical Environmental Concern (ACECs)					
No existing ACECs include GRSG as a relevant and important value.	No similar action.	Designate and manage the following 15 areas (2,233,800) as ACECs (BLM) and GRSG Zoological Areas (Forest Service) to function as sagebrush reserves to conserve GRSG (Map 2.60, Potential ACECs and Zoological Areas–Alternative C): • Three Corners/Browns Park ○ **Total acres – 72,600** ○ BLM acres – 50,100 ○ Forest Service acres – 22,500 • Diamond Mountain ○ **Total acres – 139,500** ○ BLM acres – 110,300 ○ Forest Service acres – 29,200 • Little Mountain/Halfway Hollow ○ **Total acres – 74,900**	No similar action.	No similar action.	No similar action.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		○ BLM acres – 60,700 ○ Forest Service acres – 14,200 • Blue Mountain ○ **Total acres – 18,900** ○ BLM acres – 18,900 ○ Forest Service acres – 0 • Emery ○ **Total acres – 11,500** ○ BLM acres – 0 ○ Forest Service acres – 11,500 • Parker Mountain ○ **Total acres – 350,500** ○ BLM acres – 201,800 ○ Forest Service acres – 148,700 • Southern Mountain Valleys ○ **Total acres – 171,300** ○ BLM acres – 105,300 ○ Forest Service acres – 66,000 • Buckskin Valley ○ **Total acres – 46,000** ○ BLM acres – 34,900 ○ Forest Service acres – 11,100 • Black Mountains ○ **Total acres – 256,800** ○ BLM acres – 256,800 ○ Forest Service acres – 0 • Southern Great Basin			

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		○ **Total acres – 101,000** ○ BLM acres – 101,000 ○ Forest Service acres – 0 • Sheep Creek Mountains ○ **Total acres – 398,100** ○ BLM acres – 316,700 ○ Forest Service acres – 81,400 • Ibapah ○ **Total acres – 47,000** ○ BLM acres – 47,000 ○ Forest Service acres – 0 • Box Elder/Grouse Creek ○ **Total acres – 364,100** ○ BLM acres – 364,100 ○ Forest Service acres – none in planning area • Rich County ○ **Total acres – 171,800** ○ BLM acres – 166,600 ○ Forest Service acres – 5,200 • Strawberry ○ **Total acres – 9,800** ○ BLM acres – 0 ○ Forest Service acres – 9,800			
No similar action.	No similar action.	Manage the relevant and important value (GRSG habitat) for the 15 GRSG ACECs/GRSG Zoological Areas as prescribed in this table above. In addition, implement the following management for these areas:	No similar action.	No similar action.	No similar action.

Table 2.4
Description of Draft Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		• Manage the GRSG ACECs/ Zoological Areas to minimize anthropogenic disturbances to GRSG, consistent with valid existing rights. • Prioritize withdrawal from mineral location in the ACECs/Zoological Areas. Make any existing claims within the ACECs/Zoological Areas subject to validity patent examinations. • Require Plans of Operations for any Notice level locatable mineral development per 43 CFR 3809 regulations. • Prioritize the removal of unneeded infrastructure (including mining or ROW equipment, roads, range developments and fencing).			

2.11 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

The following alternatives were considered but were not carried forward for detailed analysis because (1) they would not fulfill the requirements of FLPMA, NFMA or other existing laws or regulations, (2) they did not meet the purpose and need, (3) they were already part of an existing plan, policy, or administrative function, or (4) 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 Increased Livestock Grazing

During scoping and the alternatives development process, a number of individuals and cooperating agencies, including the State of Utah, 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 which seemed to indicate that there could be a correlation between declines in GRSG and declines in 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 LUPA/EIS include conservation measures that would meet the purpose and need for the project, which is 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 is currently a lack of peer-reviewed information available to support increased livestock grazing on public lands as a method of enhancing or restoring GRSG habitat.
- Over the past 10-years, actual livestock use within GRSG habitat on BLM-administered lands in the Utah Sub-region is approximately 70 percent of permitted use. Therefore, increases in livestock grazing could occur under existing management. Further, although no alternative specifically considers an increase in livestock grazing, under all alternatives except Alternative C, the BLM and Forest Service would retain flexibility to consider increases in livestock grazing on a case-by-case basis so long as the action to increase conforms to the LUP. Increases would be dependent on permittee interest and rangeland conditions. Increases in livestock grazing may be facilitated in GRSG if there are changes in management, such as changes to existing grazing management systems, which optimize range conditions.
- Under planning direction, for lands available for livestock grazing, the BLM must identify, on an area-wide basis, the amount forage available for livestock. This number is expressed in AUMs. During alternatives development the BLM agreed to evaluate increased grazing under Alternative E, if the State of Utah was able to calculate the number of AUMs above the existing active preference that could be attained in GRSG based on the concept of range optimization (e.g., changes in grazing management systems). Neither the State of Utah nor the BLM were able to identify a method for calculating an increase in AUMs in GRSG habitat at the planning level.

2.11.2 Make GRSG Habitat Available for Oil Shale and Tar Sands Leasing

This planning initiative is not considering management approaches for the development of oil shale and tar sand resources for detailed analysis in this EIS. In April 2011, the BLM initiated a planning effort addressing these resources in Colorado, Utah, and Wyoming, and the *Approved Land Use Plan Amendments/Record of Decision for Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the Bureau of Land Management in Colorado, Utah, and Wyoming and Final Environmental Impact Statement* (OSTS PEIS/ROD) was completed in March 2013. The OSTS ROD closed all mapped occupied GRSG habitat on BLM-administered lands in Utah to oil shale and tar sands leasing and development, with the exception of approximately 2,123 acres, which represents the acreage subject to the pending Asphalt Ridge tar sands lease application.

The Utah GRSG planning process does not present or analyze any alternatives for management of OSTS resources that were not already considered in the recently-completed OSTS planning effort, which included consideration of both opening and closing GRSG habitat to future OSTS leasing. As explained in the OSTS ROD, because of the nascent character of the oil shale and tar sands technologies, a measured approach was taken to oil shale and tar sands leasing and development to

ensure that commercial viability was proven and the environmental consequences of these technologies is known before any commitment is made to broad-scale development which may impact other resource values. Consistent with this approach, the OSTS ROD closed mapped occupied GRSG habitat in Utah.

Further, the BLM and Forest Service will be using this planning process to determine which lands have the highest conservation value as GRSG habitat. A detailed analysis of an alternative or alternatives that would open areas of GRSG habitat to oil shale and tar sands leasing and development is not warranted because such an alternative or alternatives would be inconsistent with the purpose and need for this EIS which is to identify and incorporate appropriate conservation measures in LUPs to conserve, enhance, and/or restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat.

Once the BLM has completed this GRSG planning process and a decision has been made regarding which GRSG habitat is necessary for conservation, oil shale and tar sands land use planning decisions may be changed through a subsequent plan amendment process to consider leasing and development in areas where such uses would be consistent with other resource management decisions or where lands are of limited conservation value for GRSG.

With respect to National Forest System lands, portions of the Ashley National Forest are underlain by bedrock units of the Green River Formation, and are known to contain oil shale beds of varying thickness and quality. However, these potential mineral resources on the Ashley National Forest are not as thick or as rich as other oil shale resources on BLM-administered or State lands, and do not fall within the "Most Geologically Prospective Oil Shale Resource" areas mapped and described as part of the recent Oil Shale Tar Sands Programmatic EIS. Because the oil shale resources within the Ashley National Forest are thinner and of lower grade than similar oil shale deposits in the surrounding area, there is no reasonably foreseeable development of these resources. Prior to considering any leasing in the future, the Forest Service would be required to complete a leasing analysis.

2.11.3 Citizen Proposed Alternatives

During the scoping process the BLM and Forest Service received numerous comments from interested public that included input on potential alternatives. Two comment letters, one from Wild Earth Guardians and a consortium of other organizations and one from Western Watershed Project, essentially included entire citizen proposed alternatives. The BLM chose to combine information submitted by these organizations and other interested public into one alternative, Alternative C.

The BLM and Forest Service considered analyzing these two alternatives separately. Separate alternatives were considered but eliminated from detailed analysis because they were substantially similar in design and would therefore have substantially similar effects. The most notable differences between the alternatives proposed by Wild Earth Guardians and Western Watershed Project pertain to the management of livestock within GRSG habitat. In recognition of the differences, for this LUPA/EIS, Alternative C was divided into two sub-alternatives: C1 and C2. Consideration of these two sub-alternatives allows the BLM and Forest to consider a no grazing alternative, as suggested by Western Watershed Project, as well as a reduction in grazing as suggested by Wild Earth Guardians.

In addition to combining these alternatives, not all management actions proposed by interested public (including Wild Earth Guardians and Western Watershed Project) were brought forward for detailed analysis under Alternative C. Many of the management actions proposed by interested public were identified as implementation-level decisions rather than planning-level decisions. Therefore, consideration of these management practices could be evaluated on a case-by-case basis. Other management actions proposed by interested public were eliminated from detailed analysis because they were ineffective (did not respond to the purpose and need) or speculative (did not resolve any issue or threat).

2.11.4 Adoption of the State of Utah's Sage-Grouse Management Areas as Priority Habitat for all Alternatives

In a letter received by the BLM on February 26, 2013, the State of Utah requested that the BLM and Forest Service use the areas identified as SGMAs in the State of

Utah Sage-Grouse Conservation Plan for all alternatives being considered in the land use planning process. This alternative was considered but eliminated from detailed analysis because the BLM, Forest Service, USFWS, and State of Utah have not reached agreement on which lands have the highest conservation value, or which lands are necessary to maintain or increase GRSG populations. NEPA section 102(e) requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."

2.11.5 Use of Other Habitat Maps

During the scoping and alternative development process, as well as in comments on the Draft LUPA/EIS, several counties participating in this LUPA/EIS as cooperating agencies requested that the BLM use different GRSG habitat maps that they developed as the baseline for analysis rather than the March 27, 2012 UDWR occupied GRSG map or the State's SGMAs. An alternative based on county-provided habitat maps was considered but eliminated from detailed analysis for the reasons discussed below. Additional information on mapped occupied habitat in Utah is included in **Appendix N**.

- At the beginning of this planning process, a decision was made to use UDWR mapped GRSG occupied habitat because it represented the best information available. The UDWR has statutory responsibility to manage and protect Utah's wildlife within the state. The cooperating agency memorandum of understanding between the BLM and the State of Utah recognizes that the State of Utah has jurisdiction by law related to management of GRSG and special expertise related to GRSG habitat. Where GRSG habitat information submitted by the counties is inconsistent with information available from the state, the BLM has chosen to use information produced by the State of Utah based on their knowledge of and responsibility for the management of GRSG. In addition to the State of Utah, the BLM, Forest Service, USFWS, and NRCS are the other entities that have either jurisdiction by law and/or responsibility for the management of public GRSG habitat.
- The UDWR broad GRSG habitat maps are intended to encompass GRSG habitats used throughout the year by known GRSG populations. Peer-reviewed literature notes that GRSG habitat can be identified at one of four scales, from a broad geographic range that defines populations of interest to the quantification of food and cover attributes and foraging behavior at particular sites (see **Appendix N**). Broad habitat maps are necessary at the LUP-scale of planning in order to include a variety of important seasonal habitats and movement corridors that are spread across Utah's geographically diverse and naturally fragmented landscape. GRSG, frequently described as "landscape-scale species", may use multiple areas to meet seasonal habitat needs throughout the year and the resulting patchwork of habitats (e.g. winter, breeding, nesting, early brood-rearing, late brood-rearing, transitional, and movement corridor habitats) can encompass large areas, sometimes ranging between 180,000 and 1.2 million acres. Broad habitat maps increase the likelihood that all seasonal habitats (including transition and movement corridors) are included, especially where there are information gaps on GRSG populations' habitats. Inevitably these GRSG habitat maps include a patchwork of GRSG habitats and non-habitats. Non-habitats, in and of themselves, may not provide direct habitat value for GRSG (e.g. deep canyons, water bodies, anthropogenic disturbances), but may be crossed by GRSG when moving between seasonal habitats.
- The BLM's land use planning handbook recognizes that planning at multiple scales may be necessary. This LUPA/EIS is a broad-scale regional analysis. The purpose of this planning process is to address GRSG conservation in the context of the broader landscape. Based on the scale of this planning process, the BLM and Forest Service have chosen to use existing data that provides consistency across the planning area. Within the range of alternatives, the BLM and Forest Service are considering decisions that allow for modification of maps and even some decisions during plan implementation based on site-specific information (see **Section 2.7.4**, Boundary Adjustments, and **Appendix N**).

2.11.6 County Sage-Grouse Management Plans

During the alternatives development process and through input during the public comment period for the Draft LUPA/EIS, comments were submitted by several counties who are cooperating agencies on this project requesting that the BLM and Forest Service consider an alternative based on the given county's draft or final GRSG management plan. Other counties are still in the process of completing GRSG management plans and requested flexibility be maintained in the BLM/Forest Service plans to be able to incorporate these plans when they are complete. After review of the various draft plans and one final plan, it was determined that these plans be dismissed from detailed analysis for two general reasons: 1) they were substantially similar to the state's plan, which was the basis for Alternative E1, or 2) they were not consistent with the purpose and need of the planning effort.

After the state completed its Conservation Plan for Greater Sage-Grouse in Utah (February 2013), many counties passed ordinances endorsing the state's plan. Some counties have taken this approach as a temporary measure while they develop their own county-specific GRSG plans. Of the one final and several draft county plans that have been provided to the BLM and Forest Service to date, most are substantially similar to the State of Utah's Conservation Plan, which is being considered in this EIS under Alternative E1. Given the similarities of many of these plans with an alternative already being considered, there is no need to add a separate alternative for detailed analysis.

Some counties are in the process of developing county GRSG plans that, based on drafts shared with the BLM/Forest Service, do differ from the state's plan, and therefore from Alternative E1. The actions in these plans were evaluated to determine if they included measures that needed to be analyzed in detail. While these counties have not provided finalized GRSG plans for consideration, review of the draft plans they have provided has led to the determination that the plans are not consistent with the purpose and need of this planning effort:

- Applying a county by county management approach would result in inconsistent management. Part of the purpose and need is to help avoid a listing. The USFWS has repeatedly noted that a listing decision would likely be made range-wide. Further, GRSG are a landscape scale species, and as such it is imperative that a consistent management approach be implemented throughout a landscape, whether PHMA, state SGMAs, or USFWS PAC. Most GRSG populations extend across county or state lines. A county by county approach to manage GRSG does not promote consistency and encourages further fragmentation of a landscape that is already fragmented due to topography and existing developments.
- As described in **Section 2.11.5**, many counties developed their own GRSG maps, often by starting with the UDWR maps and removing private lands and areas not currently sagebrush. The result is maps that differ greatly from those contained in the Draft LUPA/EIS, the state's plan, or the COT report. Some counties further fragment habitat protections by re-categorizing the reduced areas as priority, general or opportunity areas based on current vegetation conditions. By so doing, the resulting areas identified for protection do not include all the seasonal life stages and transition zones for the GRSG populations. They also could encourage development in areas that could easily become habitat with treatment or where development could indirectly impact adjacent area of habitat. Further, omitting private lands overlooks the point that is emerging from research from throughout the west that private lands often provide important GRSG habitats due to the presence of deeper soils and more moisture. Such an approach at mapping is not consistent with maintaining and improving GRSG populations and habitat.
- A key component of some of the county GRSG plans was reliance on a "no net loss" strategy regarding GRSG habitat, with a focus on habitat restoration and limited restrictions on disturbing or disruptive activities. Research across the GRSG range has shown that birds are sensitive to disturbance and repeated disruptive activities, as described in **Chapter 4**. Without avoidance of sensitive areas, the Draft LUPA/EIS analyses reported that GRSG populations are not successful in the long-term. In analyzing the action alternatives, the research and analysis presented clearly demonstrates

a relationship between some anthropogenic features and impacts on GRSG habitats and populations. As such, reliance on a "no net loss" approach in the absence of clear protection of sensitive areas would not maintain or improve GRSG habitat or populations.

- As part of implementing the "no net loss" approach, some counties incorporated into their plans criteria developed by the NRCS to evaluate GRSG habitat quality and provide for improved GRSG habitat. The BLM and Forest Service coordinated with the NRCS to learn about the approach. The NRCS criteria are part of a planning tool to assist in ranking site-specific proposed GRSG habitat improvement projects. The NRCS informed the BLM and Forest Service that the criteria were not designed to be used as a landscape scale habitat assessment tool.

Compounding the above concerns was objectives in some plans to maintain a population substantially smaller than existing levels. After a review of the county plans, it was determined that the Draft LUPA/EIS either already considered their components within the range of alternatives, or the unique measures not already analyzed were not consistent with the purpose and need (see **Section 1.2**), as described above. Therefore, they were eliminated from detailed analysis.

2.11.7 Conservation Objectives Team Report

As part of their comments on the Administrative Draft EIS, the State of Utah commented that the BLM should consider an alternative which focuses on consistency with the COT report. An alternative based on the COT report was not analyzed in detail because all conservation measures and objectives identified in the COT report are considered within the range of alternatives.

2.11.8 BLM Policies and Regulations

In addition recommending consideration of an alternative based on the COT report, the State of Utah suggested that the BLM should consider an alternative based on BLM Manual 6840, Special Status Species Management, and rangeland health regulations, found at 43 CFR 4180.2. The BLM did not consider this alternative in detail because under all alternatives the BLM is required to comply with existing laws, rules regulations and policy (see **Section 1.7.1**, Planning Criteria). In addition, as discussed in the USFWS listing decision, existing regulatory mechanisms, which includes compliance with these existing regulations and policies has not been sufficient to prevent GRSG habitat loss or population declines. As such, an alternative based on compliance with BLM Manual 6840 and rangeland health regulations would substantially similar in design to the No Action Alternative.

2.11.9 USFWS-Listing Alternative

Inadequacy of regulatory mechanisms was identified as one of the listing factors for GRSG in the USFWS finding on the petition to list GRSG. The USFWS identified the principal regulatory mechanism for the BLM and Forest Service as conservation measures in LUPs. In response to the USFWS findings, as well as the BLM and Forest Service's requirement to manage sensitive species, the BLM and Forest Service are preparing plan amendments with associated EISs to incorporate conservation measures in LUPs for GRSG. Because the purpose of the LUP amendments is to identify and incorporate appropriate conservation measures in LUPs to conserve, enhance and/or restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat, the alternatives in this EIS, therefore, focus on those conservation measures that can be incorporated into the LUPs. Although the potential listing of GRSG would also include conservation measures identified by the USFWS, those conservation measures are not known at this time. Therefore, an alternative that includes USFWS-listing with associated conservation measures for GRSG is not being analyzed in detail.

2.12 Summary Comparison of Environmental Consequences

Table 2.5 presents a comparison summary of impacts from the management actions proposed for the alternatives. Impacts on all resources, including GRSG are presented in this table. **Chapter 4** provides a more detailed impact analysis including science, methodology, and assumptions.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
Special Status Species – Greater Sage-Grouse						
New ROWs could cause additional fragmentation to GRSG habitat, habitat loss, and functional loss of the habitat, especially in areas adjacent to above-ground and site-type ROWs.	PHMA would be managed as ROW exclusion. Therefore, GRSG habitat fragmentation, direct and indirect habitat loss, habitat degradation, and habitat disturbance from new ROWs in PHMA would be eliminated. New ROWs could be located in existing designated corridors within the footprint of existing disturbance. Concentrating disturbance into already disturbed area would prevent further habitat fragmentation and habitat loss. GHMA would be managed as ROW avoidance. ROWs would only be allowed when there are no other alternatives. Fragmentation and degradation could occur in GHMA when new ROWs are constructed.	All GRSG habitat would be managed as ROW exclusion; therefore, no further habitat fragmentation, indirect or direct loss, or habitat degradation would occur.	Restrictions on new ROWs would reduce GRSG habitat fragmentation and direct and indirect habitat loss. In PHMA, the impacts on the lek and nesting and brood-rearing habitats would decrease by excluding above-ground linear ROWs within 4 miles of a lek. New above-ground ROWs would be limited to existing above-ground corridors. The impacts would be concentrated in one area. GHMA would be managed as ROW avoidance. ROWs would only be allowed when there are no other alternatives and under specific circumstances. Fragmentation and degradation could occur in GHMA when new ROWs are constructed.	Implementation of ROW stipulations would protect leks by reducing impacts on leks and seasonal habitats during important periods of time. Where feasible, electrical transmission lines would be sited together in a corridor or in areas where there are already existing linear disturbances to lessen the direct disturbance of GRSG habitat in SGMAs.	The core GRSG habitat would be managed as ROW exclusion or new ROWs can be collocated with existing disturbance. Concentrating disturbance into already disturbed area would prevent further GRSG habitat fragmentation and habitat loss.	PHMA would be managed as ROW avoidance. Where avoidance is not possible, additional stipulations would apply. Large pipelines and transmission lines would only be located in existing corridors. These measures would protect all lekking and most nesting, early brooding habitat; minimize and mitigate loss and division of other seasonal habitat; and minimize disruption and displacement of GRSG. GHMA would be open to new ROWs. Conservation measures would be applied as COAs. Lek buffers would protect lekking and some nesting, early brooding habitat. Fragmentation and degradation of habitat could occur where new ROWs are constructed.
Some GRSG habitat is open to cross-country motorized	In PHMA, habitat loss and fragmentation would be	Impacts from roads are the same as Alternative B,	All GRSG habitat would be protected from loss and	Nesting and winter habitat	All federal lands in the Utah Sub-	Impacts would be similar to alternatives B and D. In

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
travel. Cross-country travel and new route creation can result in habitat fragmentation, degradation, and loss.	reduced by limiting travel to existing or designated routes. The habitat disturbance limitation of 3 percent would apply for new roads associated with valid existing rights. Not allowing upgrades of existing roads would also limit disturbance and degradation within GRSG habitat. Routes would be evaluated for seasonal closure to reduce functional loss of habitat and habitat degradation from routes in important habitats. GHMA would be designated as per the travel management plan in the current planning document.	except decisions would be applied to all occupied GRSG habitat. Also no new routes would be allowed within 4 miles of a lek which would reduce impacts on nesting and early brood-rearing habitat.	fragmentation caused by route proliferation by limiting travel to existing or designated routes. The habitat disturbance limitation of 5 percent would apply for new roads associated with valid existing rights. Upgrades of existing roads would protect GRSG habitat while considering the needs of the larger transportation network. Travel systems would be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on GRSG.	would be managed as limited to existing routes. This would limit fragmentation and habitat loss in important seasonal habitats, though it would leave over 350,000 acres open to cross-country use which could result in some habitat fragmentation, degradation and loss in approximately 10 percent of GRSG habitat.	region planning area located in State of Wyoming are National Forest System lands. The Forest Service addresses impacts on GRSG from roads through implementation-level travel management plans.	PHMA, habitat loss and fragmentation would be reduced by limiting travel to existing or designated routes. The 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would apply to new roads associated with valid existing rights. Routes would be evaluated for seasonal closure to reduce loss and degradation of habitat. The overall travel network would be managed to minimize impacts on GRSG. Stipulations would apply to new road ROWs. This includes a 3.1 mile lek buffer that would protect most lekking, nesting, and early brooding habitat. The lek buffer is 0.6 miles in PHMA and 0.25 miles in GHMA on National Forest System lands in the

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
						Wyoming portion of the planning area.
Impacts on GRSG from existing fences would continue.	The direct loss of GRSG would be reduced by removing, modifying or marking fences in high risk areas within PHMA.	Under Alternative C1, the lack of livestock grazing and presence of ACECs with management to remove unneeded infrastructure would decrease the number of fences in GRSG habitat. Under Alternative C2, impacts would be the similar to those described under Alternative B, but would be applied in areas where fences pose both high and moderate risks, so there would likely be less of impacts on GRSG. In addition, there would be no new construction of range improvements including fences, therefore, less impacts from infrastructure development would occur.	Impacts from fences are the same as described for Alternative B.	New fences would generally not be located on or adjacent to leks where bird collisions would be expected to occur. Impacts from existing fences would be reduced by applying NRCS fence collision risk tool.	Impacts on GRSG within core habitat would be reduced if the fence is found to be problematic for GRSG.	Impacts would be similar to Alternative B and D. New fences would not be allowed within 1.2 miles of leks reducing bird collisions. The lek buffer is 0.6 miles in PHMA and 0.25 miles in GHMA on National Forest System lands in the Wyoming portion of the planning area.
Various fluid mineral stipulations apply, with protective buffers around leks ranging from 0.25-mile to 3.1 miles. In general, recently completed plans	PHMA would be closed to new fluid mineral leasing, eliminating habitat loss, degradation, and fragmentation.	Impacts from fluid minerals are same as Alternative B, except a larger geographical area would be closed to leasing. The total amount of estimated disturbance would	With the application of a 4-mile NSO around leks in PHMA and limitations on disturbance and seasonal stipulations in the remainder of PHMA, impacts from new	SGMAs would include NSO within 1 mile of a lek and CSU/TL stipulations beyond that may	With an NSO within 0.6-mile of a lek and a CSU/TL in nesting and early brood-rearing habitat, impacts on	Impacts would be similar to Alternative B. PHMA would be NSO to new fluid mineral leasing, eliminating habitat loss, degradation, and fragmentation except

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activities or disruptive activities during certain dates in seasonal habitats. Surface disturbance estimated for this alternative (based on the RFD) is 16,285 acres. Continued impacts on GRSG are anticipated such as habitat loss, fragmentation, disturbance to the birds and habitat degradation due to the variability and uncertainty of the application of restrictions.	Development of existing leases in PHMA would still cause fragmentation, direct and indirect habitat loss, disruption of GRSG, and degradation of habitat. The majority of the development would occur on existing leases. The amount of estimated disturbance would be 8,912 acres. RDFs would reduce the effects of development. Disturbance would be clustered on the landscape and would be limited to 3 percent per section on average. This would reduce habitat loss and fragmentation.	be 7,386 acres.	leases on GRSG nesting and early brood-rearing habitat would be reduced or eliminated. Impacts from development of existing leases would be similar to that described for Alternative B. The amount of estimated disturbance would be 9,302 acres.	reduce the impact on leks and seasonal habitats. The impacts on important habitat may be reduced to some degree under this alternative complete avoidance of impacts, but direct impacts from development may still occur if avoidance were not possible. In these cases, minimization and mitigation would reduce impacts and could result in additional habitat. Surface disturbance is the same as Alternative A. Existing leases are not affected by this alternative.	the lek and seasonal habitat (such as direct habitat loss, fragmentation, and disruption to GRSG) would continue. Estimated surface disturbance is the same as Alternative A.	on National Forest System lands in the Wyoming portion of the planning area where PHMA would open to new fluid mineral leasing with major/moderate constraints. Development of existing leases in PHMA would still cause fragmentation, direct and indirect habitat loss, disruption of GRSG, and degradation of habitat. To the extent practical, conservation measures would be applied as COAs. The amount of estimated disturbance would be 9,218 acres.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
				Because the 5 percent disturbance limitation does not include existing disturbances, disturbance could occur at levels that have been shown to negatively affect long-term maintenance of population.		
Continued impacts from solid mineral mining on GRSG are anticipated such as habitat loss, fragmentation, disturbance to the GRSG, and habitat degradation due to the variability of restrictions. There is no surface disturbance limitation recommendation included in this alternative.	PHMA would be determined unsuitable for surface coal mining, recommended withdrawal from locatable mineral entry, closed to mineral material disposal, and closed to nonenergy mineral leasing. Therefore, impacts from new minerals development in PHMA would be eliminated. Development of existing leases would result in habitat loss and fragmentation. Application of surface	Impacts from solid minerals are the same as Alternative B except decisions would be applied to a larger geographical area (all occupied habitat).	GRSG habitat would not be unsuitable for surface coal mining, and would be open to locatable mineral entry. PHMA would be closed to commercial mineral material disposal but open to noncommercial, free use beyond 1 mile of leks. PHMA would be open to underground mining of nonenergy leasable minerals but closed to surface mining. Stipulations placed on the type, amount, timing, and location of mining would	GRSG habitat would not be unsuitable for surface coal mining, and would be open to locatable mineral entry, mineral material disposal, and nonenergy leasable minerals development. Stipulations would be applied to new leases. Seasonal stipulations would	Within core habitat, there is a 0.6-mile lek NSO stipulation that would protect the lek to a certain degree, and there is a 0.25-mile lek NSO stipulation outside of core habitat. There are also restrictions on seasonal habitats outside of the lek buffers that would provide some	PHMA would be closed to mineral materials sales and nonenergy leasable minerals except on National Forest System lands in the Wyoming portion of the planning area. SFA would be withdrawn from locatable mineral entry, the remainder of PHMA would remain open. Coal suitability determinations would be made on a case-by-case basis. Conservation measures would apply to all

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
	disturbance thresholds and RDFs would reduce impacts on GRSG.		reduce the likelihood for habitat fragmentation and loss in important seasonal habitats. In general, no disturbance would be allowed within 1 mile of a lek, which would protect some nesting and early-brood rearing habitat. Development of existing leases would result in habitat loss and fragmentation. Application of surface disturbance thresholds and RDFs would reduce impacts on GRSG.	protect GRSG during important seasons. The implementation of other temporal and spatial restrictions may lessen some of the impacts of mining. Since the 5 percent disturbance limitation does not include existing disturbances, disturbance could occur at levels that have been shown to negatively affect long-term maintenance of GRSG populations.	protection. In general, mining activities could continue and could cause habitat loss, degradation, and fragmentation.	new mineral development activities. Closures would eliminate impacts from new mineral development in PHMA. In GHMA conservations measures would protect most lekking, nesting, early brooding habitat; minimize and mitigate loss and division of other seasonal habitat; and minimize disruption and displacement of GRSG. Development of existing leases would result in habitat loss and fragmentation. Application of conservation measures, to the extent practical, would reduce impacts on GRSG.
Most GRSG habitat is open to wind development. In areas with high development potential, continued impacts on	Wind development would be excluded in PHMA under this alternative. Therefore, impacts such as habitat loss, degradation, and disturbance	Impacts from wind development are the same as Alternative B; however, under this alternative, all GRSG habitat would be	Impacts from wind development would be similar to Alternative B because all PHMA would be excluded from wind	GRSG habitat within SGMAs would be an avoidance area from wind	Wind development is excluded in core habitat. Therefore impacts such as habitat loss,	On National Forest System lands in the Wyoming portion of the planning area, impacts from wind development would be less

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
GRSG, such as habitat loss and fragmentation, are anticipated.	to GRSG would be eliminated. There are no restrictions for GHMA under this alternative; however, there is also not high wind energy potential in GHMA.	excluded from wind development; thus more habitat protected.	development; however, there would be additional protection because the area outside of PHMA but within 4 miles of a lek in PHMA would be managed as an avoidance area in order to reduce the indirect impacts from development. Direct habitat loss would be lessened in GHMA with the restriction to wind development within 1 mile of a lek.	development. Protections would be afforded to the lek itself and within a 1-mile viewshed of the lek. Time-of-day stipulations and seasonal stipulations would assist in limiting some of the impacts on GRSG, such as habitat loss and disturbance to GSRG during important times of the year.	degradation, and disturbance to GRSG would be eliminated.	than Alternative A because wind energy development would be avoided in PHMA. In addition, the lek buffer of 0.6 miles in PHMA on National Forest System lands in the Wyoming portion of the planning area would further restrict such development. In the reminder of the planning area, impacts from wind development would be similar to Alternative B and D; however, there would be additional protection because no wind development would be allowed within 5 miles of occupied leks in PHMA. In GHMA, impacts would be less than under Alternatives B or D because additional conservation measures would be applied as COAs. These measures include a 3.1 mile lek buffer on energy developments. The lek buffer is 0.25 miles in GHMA on National Forest

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
						System lands in the Wyoming portion of the planning area.
Varied fuels treatment options would continue.	Impacts such as habitat degradation and habitat loss from fuels treatments would be reduced because there would be no treatments in winter habitat, no prescribed fire in areas with less than 12 inches precipitation, and all projects would use native seeds. Habitat loss would decrease because of the restrictions on fuels management treatments and disruption of GRSG would decrease with the treatments occurring outside of important seasons. Wildfire suppression efforts would be prioritized very high in GRSG habitat. Following best practices will also limit impacts from firefighting activities. Requiring native seed and designing fuels treatments for long-term success would reduce the long-term impact	Impacts are similar to Alternative B, except all occupied GRSG habitat is PHMA. In addition, relies more on passive restoration efforts to indirectly reduce the risk of wildfires. Restores anthropogenic disturbance such as nonnative seeding, fences, and areas affected by livestock grazing.	Habitat loss would be reduced from the implementation of a system of fuel breaks. Fuel treatments would reduce impacts since they would need to be designed with the emphasis to maintain, protect, and expand sagebrush. Prescribed fire would not be allowed unless it is shown that noxious weeds will not be spread. Winter habitat loss would be limited by restricting when treatments could occur in these areas. Wildfire suppression planning would lessen the risk for habitat loss from wildfire. The emphasis on use of native seed or desirable plants would lessen the long-term habitat loss to GSRG habitat.	Prescribed fire would only be allowed if other treatments options have been explored, where site specific variables allow, and in areas where risk of conversion to exotic annual dominance is low and/or could be mitigate. Prescribed fire in area of low elevation Wyoming big sagebrush would be avoided. Changes in prescribed fire management would reduce the risk of fire escape or wild fire in GRSG habitat.	Habitat loss would be reduced when prescribed fire actions are limited and GRSG habitat is prioritized for suppression.	Management actions considered and impacts would be similar to Alternative D. The primary difference is that the Proposed Plans include quantifiable treatment objectives designed to meet vegetation objectives (70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover). Treatment of annual grasses and conifers as aimed under the Proposed Plans would further reduce the amount of fire.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
	of the short-term habitat loss and not have a negative long-term population impact.			Implementation of a statewide fire agency agreement could decrease habitat loss be increasing response time to wildfires. Loss of winter habitat would be limited to approximately 20 percent. Therefore, 80 percent of the winter habitat would not be impacted by treatments, and GRSG would be able to access that habitat in the winter.		
Emergency Stabilization and Rehabilitation plans can help ameliorate the threat of invasive annuals and strategic wild and fire suppression can provide long-term protection to intact native vegetation, thereby preventing the	Impacts on GRSG habitats would be minimized by controlling, suppressing, and eradicating noxious and invasive weeds. Since this alternative would limit anthropogenic disturbance to 3 percent, this would likely limit the invasive annuals	Impacts from invasive weeds are the same as Alternative B, except this alternative would also prioritize restoring sagebrush steppe invaded by nonnative plants, further reducing habitat degradation and loss from invasive species. In addition,	Impacts from invasive weeds are similar to Alternative B, except the disturbance limitation would be 5 percent instead of 3 percent. Disturbance thresholds would limit the invasive annuals introduced.	Agencies would be required to aggressively respond to new infestations to keeping invasive species from spreading, identify, and treat new	Giving priority for implementing specific GRSG habitat restoration projects in annual grasslands would help degraded habitat be reclaimed to	Impacts would be similar to those described under Alternatives B and D. Similar to Alternative B, disturbance would be limited to 3 percent (5 percent on National Forest System lands in the Wyoming portion of the

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
spread and conversion to invasive annuals. Invasive annuals would continue to be introduced and spread as a result of ongoing vehicle traffic in and out of the planning area, recreational activities, wildlife, improper livestock grazing, fire, and surface-disturbing activities (energy and infrastructure).	introduced. Native seed would be required for restoration efforts and the use of BMPs for fire and fuels treatments. Use of native species could reduce habitat degradation and loss from invasive species. On the other hand, native species may be unable to out-compete annual cheatgrass.	passive restoration would result in decreasing the rate and scale of minimizing invasive species compared to other action alternatives. Local native plant ecotype seeds and seedlings would be used to restore treated habitats. It could take longer for these habitats to recover and could be a loss of habitat for a certain amount of time.		infestations before they become larger problems, and contain known infestations of weeds in or near sagebrush habitats.	support sustainable GRSG over the long-term.	planning area). Limiting the amount of development would limit opportunities for introduction and spread of invasive species. Similar to Alternative D, native seeds would primarily be used for restoration; however, desirable nonnative species could be used where the probability of success for native species is low.
Varying degrees of existing habitat objectives are identified for maintenance, improvement, and restoration of sagebrush communities. The objectives provide for improvements to wildlife habitat or to increase available forage for wildlife, livestock, and wild horses, which would also have varying benefits and impacts on GRSG. There is no set standard for treatment in GRSG habitat.	Prioritizing sagebrush restoration in seasonal habitats would reduce degradation, habitat loss, and fragmentation for GRSG.	Passive sagebrush restoration is preferred for restoring these areas over active restoration methods.	Prioritizing sagebrush restoration in seasonal habitats plus reducing conifer encroachment in PHMA would improve and expand GRSG habitat in these areas.	Aggressively removing encroaching conifers and other plant species would expand GRSG habitat where possible, which in many instances would benefit GSRG and would decrease habitat degradation and habitat loss.	Following the guidelines in WGFD *Protocols for Treating Sagebrush to Benefit Sage-Grouse* would benefit GRSG.	The Proposed Plans, similar to Alternative E, include quantifiable treatment objectives. These objectives are designed to ensure that 70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover. Except on National Forest System lands in the Wyoming portion of the planning area, within 0.6 miles of a lek include an objective of reducing conifer, where technically

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
						feasible, to less than 5 percent canopy cover. These measures would improve and expand GRSG habitat.
Impacts on GRSG vary on each allotment since there is no set direction to specifically consider GRSG in grazing decisions. There could be localized to generalized landscape scale degradation to GRSG habitat from grazing. Structural range improvements are considered on a case-by-case basis while maintaining rangeland health which could lead to GRSG habitat degradation with the introduction of invasive species in some areas. Wild horses would be managed within AMLs, which could still affect site-specific areas of GSRG habitat.	Rangeland would be managed for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve GRSG seasonal habitat guideline contained in Connelly et al. 2000 and Hagen et al. 2007. GRSG habitat would move towards the structural components needed for GRSG life cycle needs. Structural range improvements must conserve, maintain, enhance or restore GRSG habitat through improved grazing management system. Water development would need to be neutral or beneficial to GRSG. Wild horses would be managed similar to	Alternative C1 would make BLM-administered and National Forest System lands unavailable to livestock grazing, which could improve ground cover, leaving more grass and forbs. However, there would be associated changes in wildfire potential and invasive species risks. Alternative C2 requires a substantial reduction in livestock grazing. Some allotments would have a decrease in AUMs and some would be closed if deemed necessary upon review. The potential for short-term habitat impacts would be lessened by changing the season of grazing to outside of the growing season. Structural range	Desired cover percentages and heights for sagebrush, grasses and forbs in seasonal habitats will be managed to achieve habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007) or local scientific literature and conditions, if applicable. GRSG habitat would move towards the structural components needed for all GRSG life cycle needs.	Livestock grazing would continue using BMPs that could help decrease any potential degradation to GRSG nesting success and population recruitment. Repeated, annual heavy use during critical growing seasons and avoidance of season-long grazing on wet meadows and riparian areas would be avoided. This would decrease the impact on GSRG nesting and	Following the practices outlined in *Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat* would reduce habitat degradation. Existing impacts from wild horses would continue.	Impacts would be similar to alternatives B and D, except the Proposed Plans include more detailed vegetation management objectives or grazing guidelines by seasonal habitat that take into consideration local ecology. The inclusion of more specific objectives creates additional parameters that could increase the amount of certainty when considering on the ground actions.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
	Alternative A.	improvements would be avoided to evade introduction of invasive species that would degrade GSRG habitat. No new water developments would be authorized and existing water developments that are harmful to GRSG could be dismantled. A reduction of wild horse AMLs by 25 percent would also benefit the GRSG by leaving more residual vegetation for cover.		brood-rearing habitat. The use of special grazing systems and utilization level monitoring in nesting and brood-rearing habitat would also reduce the likelihood of degradation of GRSG habitat. Water developments would enhance or maintain GRSG mesic habitat. Range improvement structures would avoid the lek. Habitat degradation would be limited by aggressively responding to new infestations to keep invasive species from		

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
				spreading if they were to occur with structural range improvements. Wild horses would be managed the same as Alternative A.		
Cross-country motorized travel could result in a loss of GRSG habitat. Recreation, including motorized, could cause GRSG displacement, habitat degradation, and effective habitat loss (e.g., vegetation trampling and soil erosion, and introduction or spread of invasive species and noxious weeds).	There would be no cross-country travel in PHMA. This would eliminate route proliferation and new direct disturbance of GRSG habitat. Recreation, including motorized, could cause GRSG displacement, habitat degradation, and effective habitat loss. Recreational permits would only be issued in PHMA that have neutral or beneficial effects; therefore, long-term degradation, disruption or loss of GRSG habitat is unlikely to occur.	Impacts from recreation would be similar to those described under Alternative B except in PHMA camping and other nonmotorized recreation would be prohibited during certain seasons within 4 miles of a lek. In addition, there would be no new route construction within 4 miles of a lek. These decisions would reduce disturbance to nesting and brood-rearing GRSG and their habitat.	All GRSG habitat would be protected from loss and fragmentation by limiting travel to existing or designated routes. Impacts from recreational permits would be the same as those described for Alternative B. Impacts from other types of recreation, including recreation at developed recreation sites and dispersed recreation would be the same as those described under Alternative A.	Impacts on nesting and winter habitats would be decreased because routes would be limited in these areas. Route proliferation could continue in the other GRSG habitats that are open to cross-country travel. Permitted recreation activities would have some restrictions that would likely reduce direct disturbance to	The Forest Service would address impacts on GRSG from roads through future implementation-level travel management plans. SUAs would be allowed so long as impacts on GRSG can be mitigated. Dispersed and developed recreation would result in similar impacts as described for Alternative A.	Impacts from recreation would be similar to Alternative B and D. On National Forest System lands in the Wyoming portion of the planning area SRPs that could disrupt GRSG would be not allowed in all PHMA and within 2 miles of occupied leks in GHMA. In the remainder of the planning area, disruptive SRPs would not be allowed within 0.25 miles of occupied leks. This would reduce GRSG from potential noise disruptions when GRSG are on the lek.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
				GSRG and their habitat but would not change the overall amount of habitat degradation or habitat loss in the area. Disperse recreation and developed recreation sites would have impacts similar to Alternative A.		
Most LUPs include a management action that allows for acquisition of lands that have important resource values including GRSG. Land tenure adjustments could result in consistent management across the landscape. Some lands with GRSG habitat are identified for disposal. Typically these lands are located near the existing urbanized area where there are mixed land ownership patterns, which	PHMA would be retained in public ownership unless habitat in areas of mixed ownership could be consolidated with areas of PHMA with more contiguous federal ownership patterns so the public land management agencies could manage on a landscape scale. Because GRSG is a landscape species, large contiguous tracts of land with management focusing on protection of GRSG habitat would benefit both the	Land tenure adjustments similar to Alternative B, However, there would be no option to consolidate ownership into areas where consistent management could benefit GRSG.	Impacts from land tenure adjustments the same as Alternative B, except there could be some instances where GRSG habitat could be disposed of to benefit other federally listed species.	No decisions related to land tenure adjustments, so impacts would be the same as what is already in the existing LUPs (Alternative A).	Impacts from land tenure adjustments is the same as described under Alternative B.	Impacts from land tenure adjustments would be the same as under Alternative D.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
makes it difficult to manage for specific purposes including GRSG protection.	species and its habitat.					
Air Quality						
Alternative A would result in a continuation of current impacts on air quality and would provide fewer protections than any of the action alternatives.	Alternative B would result in restrictions on activities that emit air pollutants as compared with the continuation of existing management under Alternative A. Indirect adverse impacts would result from restrictions on power line development in Uinta Basin and restrictions on mineral material development that resulted in longer haul distances.	Alternative C places the greatest level of restrictions on actions that would emit air pollutants compared with the other alternatives, and consequently could be expected to have the smallest impact on air quality. Alternative C could be expected to result in the largest change in air quality as compared to current conditions. Indirect adverse impacts would be similar to Alternative B.	Similar to Alternative B, Alternative D would result in restrictions on activities that emit air pollutants as compared with the continuation of existing management under Alternative A. Indirect adverse impacts would be similar to Alternative B.	Alternative E would have the fewest restrictions of the action alternatives and consequently could be expected to result in the smallest change in air quality as compared to current conditions.		The Proposed Plans would result in restrictions on activities that emit air pollutants as compared with continuation of existing management under Alternative A. Indirect adverse impacts would be similar to Alternative B.
Climate Change						
Alternative A would result in a continuation of current impacts on climate change and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on activities that emit GHGs as compared with the continuation of existing management under Alternative A.	Alternative C places the greatest level of restrictions on actions that would generate GHGs out of all the alternatives, and consequently could be expected to contribute the least to climate change.	Similar to Alternative B, Alternative D would result in greater restrictions on activities that emit GHGs as compared with the continuation of existing management under Alternative A.	Alternative E would result in fewer restrictions on activities that emit GHGs. Alternative E would have a great potential to reduce the carbon storing capacity of pinyon-juniper in the planning area, as this alternative would emphasize removal of encroaching pinyon-juniper to a greater extent than the other alternatives that seek to limit encroachment.		The Proposed Plans greatly restricts GHG generating actions, but to a slightly lesser extent than Alternatives B or Alternative C. The Proposed Plans would have the greatest potential to reduce carbon-storage capacity, as management

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
					would emphasize removal of encroaching pinyon-juniper to a greater extent than the other alternatives that seek to limit encroachment. Consequently, this alternative could be expected to result in the smallest improvements in carbon storage as compared to current conditions.
Soil Resources					
Alternative A would result in a continuation of current impacts on soil resources and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on compaction and erosion activities as compared with continuation of existing management under Alternative A.	Alternative C would result in the greatest restrictions on soil-disturbing activities, including livestock grazing, road construction, coal and fluid mineral leasing and development, and ROW development. This would result in the greatest protections of any alternative for soil conditions in the planning area. On the contrary, Alternative C emphasizes passive restoration over active restoration. This could increase potential for	Similar to Alternative B, Alternative D would result in greater restrictions to surface disturbing activities that may result in impacts on soil resources.	Alternative E would result in the fewest restrictions of the action alternatives and protections for soil resources would be less stringent and widespread.	Similar to Alternative B, the Proposed Plans would result in greater restrictions to surface disturbing activities that may result in impacts on soil resources.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
		soil loss or degradation in areas where there is limited vegetative ground cover.			
Water Resources					
Alternative A would result in a continuation of current impacts on water resources and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on human activities as compared with the continuation of existing management, including such measures as reductions in acres available for livestock grazing, designation of ROW exclusion areas, and closure to mineral leasing and development. Implementation of this alternative would potentially result in overall improvements in water quality across the planning area. Since water consuming activities would be restricted, the action alternatives are all also likely to result in increased storage of water in the landscape. Restrictions would improve the likelihood of more waters meeting fully supporting beneficial uses and increase or maintain the level of stream miles meeting state	Alternative C would result in the greatest restrictions on surface-disturbing activities, including livestock grazing, road construction, coal and fluid mineral leasing and development, and ROW development. This would result in the greatest protections of any alternative for water conditions in the planning area.	Impacts would be similar to those under Alternative B.	Alternative E would result in the fewest restrictions of the action alternatives and protections for water resources would be less stringent and widespread.	Similar to Alternative B, the Proposed Plans would result in greater restrictions to surface disturbing activities that may result in impacts on water resources.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	and federal water quality standards and designated beneficial uses. This alternative is likely to protect, if not improve and restore, water sources for GRSG, and are also likely to decrease the presence of mosquito breeding habitat.				
Vegetation (Including Noxious Weeds; Riparian Areas and Wetlands)					
In general, Alternative A provides only general direction to preserve and improve vegetation communities (as opposed to a strategic landscape-level approach). This could result in a number of impacts on vegetation, including vegetation removal, fragmentation of vegetation communities, loss of habitat for pollinators, and conversion of areas to an earlier seral stage, which could change vegetation community succession and reduce the extent of native plant communities. The remaining vegetation could	The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems and would designate PHMA and GHMA within which management would be applied. Direct protection of sagebrush habitat to support GRSG would limit or modify uses in this habitat type, improving the acreage and condition of desired vegetation communities. Use restrictions would reduce damage to native vegetation communities and individual native plant species in areas that are important for regional vegetation diversity	The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems and would designate PHMA within which management would be applied. Management and associated impacts would be largely similar to that described for Alternative B, though with more stringent guidance and restrictive management.	The BLM and Forest Service would manage lands to conserve, enhance and restore sagebrush ecosystems and would designate PHMA and GHMA within which management would be applied. Management and impacts would be similar to Alternative B, though Alternative D would incorporate more flexibility and adaptive management to account for sub-regional conditions.	The BLM and Forest Service would manage lands to protect, maintain, improve, and enhance sagebrush ecosystems and would designate GRSG habitat in SGMAs/core areas within which management would be applied. Management and impacts would be similar to Alternative D, though Alternative E would require less stringent use restrictions and would designate the least amount of GRSG habitat in SGMAs/core areas when compared to the other alternatives. As a result, although the types of impacts would be similar, there would be fewer improvements in vegetation conditions as compared to Alternative D.	The BLM and Forest Service would manage lands to conserve, enhance and restore sagebrush ecosystems and would designate SFA, PHMA, and GHMA within which management would be applied. Management and impacts would be similar to Alternative B, though the Proposed Plans would incorporate more flexibility and adaptive management to account for sub-regional conditions. Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
have reduced vigor or productivity due to mechanical damage, soil compaction, and dust. Soil compaction would inhibit natural revegetation in areas without active reclamation efforts and would reduce plant vigor, making plants more susceptible to disease, drought, or insect attack.	and quality. Likewise, use restrictions would minimize loss of connectivity and would be more likely to retain existing age class distribution within these specific areas. Use restrictions could also minimize the spread of invasive species by limiting human activities that cause soil disturbance or seed introductions.				adjacent non-GRSG habitat, thereby protecting vegetation in GRSG habitat, but impacting adjacent vegetation due to development outside of GRSG habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies. In the short-term, vegetation treatment and habitat restoration efforts may result in early seral conditions; however, long-term benefits to vegetation condition would result.
Other Special Status Species					
Alternative A would result in a continuation of current impacts on other special status species and would provide fewer protections than any of the action alternatives.	Alternatives B and C and the Proposed Plans would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap. Fluid mineral leasing closures	In general, actions proposed under Alternative C would provide the greatest protections for other special status species which occupy GRSG habitat. Alternatives B and C would provide the greatest quantity of habitat	A 5 percent disturbance cap would be imposed in PHMA, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to special status species habitat than under Alternatives B or C or the Proposed Plans.	A 5 percent disturbance cap would be imposed in GRSG habitat in SGMAs/core areas, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to special status species habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 483,500 acres could push fluid mineral	Impacts from the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would be similar to those described for Alternative B. Applying NSO stipulations

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	on 3.3 million acres of unleased fluid mineral areas could make it uneconomical to develop the small remaining pockets of non-GRSG habitat or adjacent private land in checkerboard ownership areas. Special status species in these areas would be unlikely to be affected from habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development. In other areas, fluid mineral development could be pushed onto adjacent lands potentially causing more impacts on special status species via habitat loss and fragmentation.	protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap in PHMA. Under Alternative C, however, disturbance would be collocated where possible. Concentrating smaller areas of impacts into larger, less diffuse clusters would increase the quality of protected habitat by reducing the potential for habitat fragmentation. Prohibiting any new future fluid mineral leases or permits in GRSG habitat (over 3.8 million acres) would provide the most habitat protection of any alternative from fluid mineral leasing and development. However, these closures could make it economical to develop the small remaining pockets of non-GRSG habitat or adjacent private land in checkerboard ownership areas. Special status species in these areas would be	Applying NSO stipulations on 1.8 million acres could push fluid mineral development on to adjacent non-GRSG habitat, thereby protecting other special status species in GRSG habitat, but harming those that could be impacted by development outside of GRSG habitat. Small areas of GHMA overlap with Utah prairie dog complexes within the Bald Hills and Panguitch population areas, and fewer habitat protections would be provided in these GHMA, making this species' habitat more susceptible to loss and/or fragmentation. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing GRSG habitat. In the short-term, vegetation	development on to adjacent non-GRSG habitat, thereby protecting other special status species in GRSG habitat, but harming those that could be impacted by development outside of GRSG habitat.	on 3.2 million acres could push fluid mineral development on to adjacent non-GRSG habitat, thereby protecting other special status species in GRSG habitat, but harming those that could be impacted by development outside of GRSG habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing GRSG habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within GRSG habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for sensitive fish and riparian species that occur within GRSG habitat.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
		affected by resultant habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development.	treatment and removal efforts of species near riparian areas within GRSG habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for sensitive fish and riparian species that occur within GRSG habitat. These policies may increase habitat in the short-term for those special status species that rely on early seral sagebrush habitat, such as Utah prairie dog.		These actions may increase habitat in the short-term for those special status species that rely on early seral sagebrush habitat, such as Utah prairie dog.
Fish and Wildlife					
Alternative A would result in a continuation of current impacts on fish and wildlife and would provide fewer protections than any of the action alternatives.	Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap. Fluid mineral leasing closures on 3.3 million acres of unleased fluid mineral areas could make it uneconomical to develop the small remaining pockets of non-	In general, actions proposed under Alternative C would provide the greatest protections for other fish and wildlife which occupy GRSG habitat. Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap in PHMA.	A 5 percent disturbance cap would be imposed in PHMA, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 1.8 million acres could push fluid mineral development on to adjacent non-GRSG habitat, thereby	A 5 percent disturbance cap would be imposed in GRSG habitat in SGMAs/core areas, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 483,500 acres could push fluid mineral development on to adjacent non-GRSG habitat, thereby protecting other wildlife species in GRSG habitat, but harming those that could be impacted by	Impacts from the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would be similar to those described for Alternative B. Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-GRSG habitat,

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	GRSG habitat or adjacent private land in checkerboard ownership areas. Fish and wildlife species in these areas would be unlikely to be affected from habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development. In other areas, fluid mineral development could be pushed onto adjacent lands potentially causing more impacts on fish and wildlife via habitat loss and fragmentation.	Under Alternative C, however, disturbance would be collocated where possible. Concentrating smaller areas of impacts into larger, less diffuse clusters would increase the quality of protected habitat by reducing the potential for habitat fragmentation. Prohibiting any new future fluid mineral leases or permits in GRSG habitat (over 3.8 million acres) would provide the most habitat protection of any alternative from fluid mineral leasing and development. However, these closures could make it economical to develop the small remaining pockets of non-GRSG habitat or adjacent private land in checkerboard ownership areas. Fish and wildlife in these areas would be affected by resultant habitat loss, habitat degradation, or direct disturbance associated with fluid mineral	protecting fish and wildlife species in GRSG habitat, but harming those that could be impacted by development outside of GRSG habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing GRSG habitat. In the short-term, vegetation treatment and removal of nondesirable species near riparian areas within GRSG habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for fish and riparian species that occur within GRSG habitat. Although these efforts would increase the availability of habitat for those fish and wildlife species that use GRSG habitat, those species which	development outside of GRSG habitat.	thereby protecting other wildlife species in GRSG habitat, but harming those that could be impacted by development outside of GRSG habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing GRSG habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within GRSG habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for migratory birds, fish, and wildlife species that use riparian habitats within the range of GRSG. Habitat restoration and vegetation management under Alternative D and

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
		development. Some big game populations that occur within the areas closed to grazing under Alternatives C1 and C2 may trend upwards due to the increased availability of forage. However, wildlife species in the population areas where livestock grazing is eliminated would not be able to access range water improvements. This may reduce the viability or of species that depend on water developments. There would be less of an impact on browsing species (e.g., mule deer) as a result of changes to livestock grazing practices. Big game habitat, including crucial winter and fawning/calving habitat, that occur within PHMA would receive the most protection under Alternative C, allowing populations to potentially increase. While land use restrictions	occur in pinyon-juniper habitat would have reduced available habitat over the long-term. The proposed habitat restoration and vegetation management policies would develop habitat conservation objectives that would increase habitat quality for fish and wildlife as well as GRSG.		the Proposed Plans may result in increased beneficial impacts on big game and other wildlife species that inhabit GRSG habitat through improvements in winter and fawning/calving habitat.

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
		being considered under alternative C would benefit wildlife, some management actions being considered could negatively impact wildlife. For example, under Alternative C, a focus would be placed on passive restoration. This could limit the ability of the BLM and Forest Service to improve wildlife habitat for other species.			
Wild Horses and Burros					
All adjustments to HMAs, herd management plans and priorities of gathers would continue to be based on monitoring data. As a result, impacts on wild horses would continue to depend on the site-specific conditions as reported in monitoring data.	Alternative B would potentially result in indirect, long-term changes to wild horse and burro management should objectives for GRSG habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve GRSG habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions	Direct impacts would occur in wild horse and burro management under Alternative C2 and indirect, long-term changes to wild horse and burro management could occur in both C1 and C2 should objectives for GRSG habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve GRSG habitat would also improve wild horse rangeland conditions (for example,	Alternative D would potentially result in indirect, long-term changes to wild horse and burro management should objectives for GRSG habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve GRSG habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions	Many management actions would include site specific and seasonal variations based on the type of GRSG habitat (i.e. breeding, winter, distance to leks, etc.) where they are proposed. As a result, the level to which surface disturbing activities would be reduced in each HMAs would depend on the GRSG habitat category for each HMA. There are no wild horse and burros on National Forest System lands in Wyoming that are included in the Utah planning area.	The Proposed Plans would potentially result in indirect, long-term changes to wild horse and burro management should objectives for GRSG habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve GRSG habitat would also improve wild horse rangeland conditions in the long-term. For example, conifer removal and noxious weed control

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	for wild horse and burros).	conifer removal and noxious weed control would improve forage conditions for wild horse and burros). Alternative C1 would be most protective of wild horses and burros because it proposed the most restrictions on resources uses. Under Alternative C2, AMLs would be directly reduced by 25 percent for HMAs within PHMA. This would result in a reduction of AMLs for the Chokecherry, Onaqui Mountain, Range Creek, Sulphur, and Tilly Creek HMAs. As a result, costs of wild horse and burro management would increase, due to a need for additional horse gathers for removal and/or fertility treatment.	for wild horse and burros). There would be further reduction of disturbance of wild horse and burros from management actions limiting other resource uses in opportunity habitat.		as identified in the VDDT approach or the prioritization for treatment/restoration projects as identified in the FIAT assessment approach would improve forage conditions for wild horse and burros. There would be further reduction of disturbance and harassment of wild horse and burros in the five HMAs that fall within occupied GRSG habitat where disturbance is restricted. Restricting land uses in PHMA could push development to areas outside of occupied GRSG habitat, however, thus increasing disturbance and harassment of wild horses and burros in HMAs outside of PHMA. Placing a cap on anthropogenic disturbance within PHMA under the Proposed Plans would place an additional

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
					restriction on development in HMAs, which would limit forage degradation and reduce harassment of WHB. Implementing the GRSG mitigation strategy and monitoring framework responses under the Proposed Plans would ensure that this increased level of protection of GRSG habitat and indirectly forage and water resources for WHB would be maintained.
Cultural Resources					
The BLM and Forest Service would continue to follow 36 CFR 800, Section 106 and BLM-Utah's statewide programmatic agreement when addressing federal undertakings; therefore, adverse effects on cultural resources would be appropriately mitigated. Alternative A would result in a continuation of current	All action alternatives would provide some degree of indirect protection to cultural resources. Actions that provide protections for GRSG or its habitat by limiting access into areas or excluding surface disturbing activities would indirectly protect cultural resources by preventing actions that cause disturbance or destruction of cultural resources and their	By providing the greatest restrictions on surface disturbing activities, Alternative C would indirectly protect cultural resources more than any other alternative but also inhibit Native American cultural uses in some areas.	Similar to Alternative B, Alternative D would provide indirect protection to cultural resources by limiting access into areas or excluding surface disturbing activities that could otherwise cause disturbance or destruction of cultural resources and their settings.	Alternative E would have the fewest restrictions on access and surface disturbing activities out of all the action alternatives and consequently could be expected to provide the least indirect protection to cultural resources out of the action alternatives. However, this could result in fewer restrictions on Native American cultural uses than under the other action alternatives.	Similar to Alternative B, the Proposed Plans would provide indirect protection to cultural resources by limiting access into areas or excluding surface disturbing activities that could otherwise cause disturbance or destruction of cultural resources and their settings.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
impacts on cultural resources and would provide fewer additional protections than any of the action alternatives. Actions that involve surface disturbing activities, such as the vegetation management and habitat restoration treatments, ROW development and construction, fire/fuels treatments, minerals development (including fluid, locatable, and saleable minerals) would have potential direct and indirect impacts on cultural resources, including damaging, destroying, and/or displacing artifacts and features, and construction of modern features out of character with a historic setting.	settings. Measures to protect GRSG include protective designations and stipulations and restrictions on surface and vehicle use that would protect cultural resources from effects due to surface disturbance, erosion, effects on setting and access leading to vandalism, inadvertent damage, and unauthorized collection of cultural resources. However, these protective measures could inhibit Native American cultural uses in some areas. Alternative B would provide more indirect protection to cultural resources than under Alternative A through management actions such as those listed above.				
Visual Resources					
There would continue to be 102,500 acres of ROW exclusion and 177,700 acres of designated utility	The BLM and Forest Service would manage 2,784,200 acres of occupied habitat as ROW exclusion and would	Alternative C would result in the fewest alterations to visual resources when compared to Alternative A.	The BLM and Forest Service would manage ROW development based on the type of development. Refer	Impacts on visual resources would be similar to Alternative A, but would include additional management actions to avoid or minimize new human	Compared to Alternative A, the Proposed Plans would minimize future surface disturbing activities

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
corridors. As a result, new utility corridor development, particularly electrical transmission lines, would impact visual quality through the placement of large vertical transmission line structures and associated ground disturbance. Fluid mineral development and surface mining would also impact visual quality through surface modifications and mining equipment.	retain 130,200 acres of designated corridors. The remaining 529,600 acres of occupied habitat would be ROW avoidance areas. Additionally, 3,341,300 acres of occupied habitat would be closed to fluid mineral development and 3,328,760 acres unsuitable for surface mining. Management actions that would reduce new human modifications within GRSG habitat, would result in little to no impact on visual resources.	All designated utility corridors in PHMA would be undesignated and all areas within PHMA (3,313,800 acres) would be ROW exclusion. BLM would manage 87 percent (3,821,580 acres) of PHMA as closed to fluid minerals and 4,008,580 acres (including 694,780 acres of mineral split estate) as unsuitable for surface mining. Prohibitions on new human modifications in PHMA would result in no impact on visual resources.	to **Table 2.3** for a comparison of agency management of ROW development by type. In particular, above-ground linear infrastructure would be excluded on 1,422,300 acres and avoided on 1,368,900 acres of occupied habitat. No areas in occupied habitat would be open to fluid mineral leasing; however, 3,383,080 acres would be available for fluid mineral leasing with either CSU/TL (1,829,980 acres) or NSO (1,853,100 acres) stipulations. Since Alternative D would result in greater restrictions on new human modifications to the landscape in comparison to Alternative A, BLM management under Alternative D would reduce impacts on visual resources.	modifications. Agency management would maintain 177,700 acres of designated corridors and manage 27,600 acres as ROW exclusion. However, the BLM and Forest Service would manage 2,654,000 acres in occupied habitat as ROW avoidance. Impacts from mineral development would be similar to Alternative A, with the exception that CSU/TL for fluid mineral leasing would apply to 2,842,180 acres of occupied habitat. Since Alternative E would result in only slightly greater restrictions on new human modifications to the landscape in comparison to Alternative A, there would be the potential for impacts on visual resources.	(e.g., ROW and mineral development) if at all possible within PHMA and GHMA. Specific restrictions would be managed based on the type of development. Refer to **Table 2.3**, for a comparison of management of ROW development by type. Above-ground linear infrastructure would be excluded on 28,100 acres and avoided on 2,764,800 acres of PHMA and GHMA, with an additional 165,500 acres of avoidance adjacent to PHMA while 3.2 million would be open to fluid mineral leasing subject to NSO stipulations. Sagebrush habitat objectives to restore and maintain desirable landscapes to support GRSG populations would result in greater restrictions on new human modifications to the landscape thereby reducing impacts on visual resources.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
Wildland Fire Management					
Due to the flexibility in management of prescribed and wildland fires and lack of specific areas prioritized for protection, fire suppression costs are likely to be the lowest in Alternative A. As described in detail below, restriction on resource uses in the area would be limited, resulting in a higher chance for human-caused ignition in GRSG habitat as compared to action alternatives. Management actions for energy and minerals and ROWs would generally be the least restrictive of any alternative, therefore resulting in the highest risk of human-caused ignition from development. There would continue to be a total of 329,521 permitted AUMs on BLM-administered lands and 265,373 AUMs permitted	Long-term frequency and intensity of wildland fire, as measured by fire regime condition class (FRCC), could be similar to historic conditions because post fuel and restoration management would be designed to ensure long-term persistence of seeded or pre-burn native plants. GRSG management in PHMA would focus on fire suppression and limitations on fuels treatments, resulting in higher level of protection from wildland fire, but reduced wildland fire and fuels management options. Managing PHMA so that discrete anthropogenic disturbances cover less than 3 percent of the total PHMA regardless of ownership would decrease the chance of human-caused ignition in PHMA. Land use restrictions would result in less human activity, which would in turn	Impacts from fire management would be similar to those described under Alternative B. However, restricting fuels treatments on all PHMA and prioritizing protection of occupied GRSG habitat would increase the cost of suppression. In addition, there would be increased risk to firefighter safety due to the larger firefighting organization that would be required to provide the increased level of protection. Impacts from GRSG management would be similar in nature to those described in Alternative B, but increased restrictions on surface-disturbing activities would further reduce opportunities for human-caused ignitions in GRSG habitat. Managing PHMA so that discrete anthropogenic	Additional fuels treatments and other habitat treatments would be permitted with an emphasis on maintaining, protecting, and expanding sagebrush ecosystems in PHMA and opportunity habitat. This would result in a long-term reduction in the risk of high intensity fire in these areas Impacts from GRSG management would be similar in nature to those described in Alternative B, but an added emphasis on region-specific habitat needs, as well as variations in requirements for specific GRSG habitat types, would result in more site-specific fire management options. When compared to Alternative A, the risk of human-caused ignitions in this area would be reduced due to the 5 percent disturbance cap in PHMA. Land use restrictions would	Impacts from wildland fire management would be similar in nature to those described in Alternative B, but the emphasis on fire suppression in GRSG habitat under Alternative E would require use of additional suppression resources, as described under Alternative B, and as such it is anticipated that suppression costs would be increased as compared to alternative A. Impacts from GRSG management would be similar to those described under Alternative B, except that this alternative would allow for greater use of fuels treatments, providing more flexibility for wildfire management. Impacts from mineral development would be similar to those described in Alternative B. GRSG seasonal habitat requirements would be considered when managing sagebrush rangelands for livestock grazing, resulting in more site specific variation in management and related variation in fuel levels and size, extent and occurrence of fire. Active vegetation treatments would be	Management actions in the Proposed Plans and related impacts would be similar to those described in Alternative B and D but with the addition of more specific objectives for GRSG habitat type and refined protocols for developing site specific management. These actions would result in a reduction in FRCC shift in GRSG habitat and a trend towards more historic frequency and intensity of wildfire. GRSG management would be similar to those described under Alternative B and D with the addition of specific indicators and desired conditions for GRSG habitat type and treatment objectives in PHMA, resulting in the reduction of annual invasive grasses and a trend towards FRCC desired historic conditions.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
on National Forest System lands. Livestock grazing would continue to result in the reduction in fuels and the associated risk of wildland fire. Potential for vehicle-caused ignition would continue in the 797,000 acres of BLM-administered lands open to cross-country motorized travel, with reduced risk in the 437,400 acres of BLM-administered lands limited to existing routes and 1,217,700 acres limited to designated routes. Proposed allocations for motorized travel on National Forest Lands within the planning area would be the same across all alternatives, resulting in the same potential for vehicle-caused ignitions under each alternative.	reduce opportunity for human-cause ignitions. In addition, managing or restoring PHMA so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet GRSG needs would promote a shift towards historic FRCC in sagebrush ecosystems. Should development in other parts of the decision areas increase as a result of restrictions in PHMA, there is potential for a greater chance of human-caused ignition and shift away from historic FRCC in these areas. Restrictions on mineral development in PHMA (e.g., closure to nonenergy mineral leases, finding PHMA unsuitable to surface coal development, recommended for mineral withdrawal, and closure to mineral material sales and new fluid mineral leases) would reduce opportunities for human-caused ignitions.	disturbances cover less than 3 percent of the total PHMA regardless of ownership would decrease the chance of human-caused ignition in PHMA. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-cause ignitions. Under Alternative C1, no livestock grazing would be permitted within occupied GRSG habitat. As a result, fine fuels would increase throughout occupied habitat and size, intensity, and occurrence of fire would increase. Under Alternative C2, impacts would be similar to those described for Alternative C1, but fire risk would be reduced in scale due to the allowance of limited grazing. Impacts from motorized travel would be similar to those described in Alternative B, but the risk of vehicle-caused ignition in	result in less human activity, which would in turn reduce opportunity for human-cause ignitions. In addition, limitations on disturbance in specific habitat areas during specific time frames would reduce the chance of human-caused ignition in these areas, particularly when timing limitations apply during fire season. Impacts from mineral development would be similar to those described in Alternative B. Focusing livestock grazing management on allotments with the best opportunities for conserving, enhancing, or restoring habitat for GRSG would result in an improvement in habitat and a return to historic FRCC in the long term. Prioritizing travel management planning in the Sheeprocks, Bald Hills, Box Elder, Rich, Ibapah, and	allowed under certain circumstances to improve sagebrush habitat. Where treatments occurred, fuels levels would be reduced and risk of high intensity fire decreased and size and extent of fire likely decreased. In particular, aggressive removal of cheat grass would reduce the risk of high intensity fire. Limiting motorized travel to existing or designated routes within GRSG habitat in SGMAs/core areas with nesting and winter habitat would reduce the risk of vehicle-caused ignitions in these areas.	Impacts from mineral and energy development and ROW development would be similar to Alternative D. Anthropogenic disturbance cap, mitigation for net conservation gain, and conservation measures implemented such as RDFs and lek buffers would further minimize human-caused ignition. Management actions and related impacts from vegetation and fire management would be similar to Alternatives B and D, but with added emphasis on sub-regional specific habitat needs. Inclusion of the Fire and Invasives Assessment Tool (**Appendix K**) would allow for more accurate assessment of site specific conditions and more effective prioritization of fire management resources, reducing the size and intensity of wildland fires, and trend towards desired

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	Limiting the types of range improvements allowed in PHMA would decrease opportunities for human-caused ignitions during construction or maintenance. Limiting motorized travel in PHMA to existing roads and trails until travel management planning is complete, as well as limiting road upgrades or new roads in this area, would reduce the risk of human-caused ignition in PHMA on BLM-administered lands.	this alternative would be further decreased due to the closure of all occupied habitat to cross-county motorized travel.	Hamlin Valley areas would reduce the risk of human-caused ignition in these areas.		FRCC conditions for GRSG habitat in the long term. Added measures for fuels treatment effectiveness and post fire rehabilitation activities and monitoring, such as requirements for burn plans, would increase both fuels management planning and post fire rehabilitation costs, but would increase effectiveness of treatments. Total acres available for grazing and permitted AUMs would be the same as described for Alternative D. However, there could be impacts (reductions in AUMs) on an allotment scale as permit renewal and related management changes were implemented. The level and intensity of impacts would vary on a site-specific basis. Review and processing of grazing permits/leases in SFA and PHMA would help to improve and protect

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
					habitat quality in SFA and PHMA, likely reducing the spread of invasive grasses and related fire risk. Limiting OHV travel in PHMA and GHMA to existing roads and trails, as well as temporary closures, would reduce the risk of human-caused ignition.
Wilderness Characteristics					
Where surface-disturbing activities are not precluded, lands with wilderness characteristics would continue to be at risk of diminished wilderness characteristics if future activities are permitted in those areas.	Alternative B would apply similar management to PHMA as under Alternative C, and impacts would be the same in these areas. However, because fewer acres would be managed as PHMA under Alternative B, there is less potential for wilderness characteristics to be maintained on all 86,100 acres. Where lands with wilderness characteristics overlap GHMA, restrictions on surface-disturbing activities could be applied to permits at the project phase to protect GRSG and its habitat;	Overall, management under Alternative C would have the greatest potential to maintain lands with characteristics. PHMA (i.e., all occupied habitat) would be recommended for withdrawal from locatable mineral entry. These types of activities and associated development can reduce the size of lands with wilderness characteristics and can impair the apparent naturalness of the area and the feeling of solitude. Precluding these types of activities would help protect wilderness characteristics	The majority of lands with wilderness characteristics fall within PHMA. In general, most types of surface-disturbing activities would be allowed with stipulations, design features, or BMPs. Although stipulations, design features, and BMPs could mitigate some impacts on wilderness characteristics, any long-term disturbance would likely result in the loss of the wilderness characteristics.	No surface-disturbing activities would be outright precluded, so risks to lands with wilderness characteristics would be greater than under Alternatives B, C, and D. During project-level permitting, considerations to protect GRSG and its habitat could provide incidental protection to lands with wilderness characteristics by minimizing habitat disturbance and possibly avoiding certain areas altogether, depending upon the project. Where lands with wilderness characteristics overlap GRSG habitat outside of SGMAs/noncore areas, impacts would be similar to those described for Alternative A because there would be no specific management in place to protect GRSG and its habitat.	The majority of lands with wilderness characteristics would be closed to such surface-disturbing activities as nonenergy mineral leasing and mineral material disposal. They would also be either closed to fluid mineral leasing or open subject to NSO stipulations and exclusion areas for wind energy development and avoidance areas for other types of ROWs. Where surface-disturbing activities are allowed, RDFs could mitigate some impacts on wilderness characteristics. Because

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	however, lands with wilderness characteristics could be at risk if surface-disturbing activities are not precluded.	on 86,100 acres of lands with wilderness characteristics. New disturbances would only result from vegetation or fuels treatments or wildland fire.		As such, management would be at least as protective of lands with wilderness characteristics as Alternative A.	disturbance under the Proposed Plans would be mitigated in the long term, there would be no long-term impacts on wilderness characteristics. Compared with the action alternatives, impacts from the Proposed Plans would be similar to Alternative B, though fewer activities would be outright precluded under the Proposed Plans than under Alternative B.
Livestock Grazing/Range Management					
In general, Alternative A would be the least restrictive on alternative resource uses, including livestock grazing. Permittees would continue to have a range of management options to support grazing operations. Special provisions for GRSG protection would continue to be limited. The nature and intensity of impacts on grazing	Acres available for grazing and permitted AUMs would not be directly changed by management actions. PHMA would be managed so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet GRSG needs. Where cover requirements do not meet forage objectives for livestock grazing, this would result in the need to modify grazing practices with	Under Alternative C1, grazing would be eliminated from all allotments completely or partially within occupied habitat. Under Alternative C2, grazing would be reduced within allotments intersecting occupied habitat. Making areas unavailable for grazing and restrictions would impact permittees' current seasonal rotations	Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres available for grazing. However, many grazing management actions would be determined at the BLM District or Forest Service unit level in order to emphasize management appropriate for local vegetation communities and	Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres available for grazing. However, Alternative E would allow for greater flexibility in management options, limiting impacts on range management. Changes could be required to grazing timing and intensity to meet GRSG habitat requirements, with the potential for some increased time and costs to permittees as compared to Alternative A. However, however, due to the	Impacts would be similar to those described under Alternatives B and D. No direct changes would occur to permitted AUMs or acres available to grazing. GRSG habitat objectives would be incorporated into grazing allotments through allotment management plans or permit renewals, or Forest Service NEPA processes, with consideration for local

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
management would depend on site specific restrictions in place under current LUPs, but is likely to be lower than other alternatives. Approximately 27,600 acres within GRSG habitat are classified as ROW exclusion areas for new ROW development. Outside of occupied habitat in population areas, there is an additional 74,900 acres of ROW exclusion areas. Indirect impacts on livestock from development would be reduced where areas available for livestock grazing overlap these areas. Some additional limitations on disturbance from development could occur in ROW avoidance areas. Alternative A is the least restrictive on energy and mineral development of all alternatives. As a result, indirect impacts including spread of noxious weeds	increased costs for permittees. Consideration of GRSG habitat objectives and management would be would be required in grazing management in PHMA and incorporated into all grazing allotments through allotment management plans or permit renewals or Forest Service NEPA processes. As a result, impacts (e.g., changes in livestock management, such as deferring or shortening grazing periods, adding range improvements, excluding grazing from riparian areas, establishing riparian pastures, and increasing livestock herding) would occur over time at a site specific level as measures are incorporated into individual allotments. Land Health assessment and permit renewals would be prioritized in PHMA, therefore there is potential for further degradation of lands outside of PHMA that	or other management strategies that utilize both federal and private lands. The elimination of permitted grazing in PHMA under Alternative C1 may result in permittees going out of business, with impacts on both individual permittees as well as local communities as a whole. Additional details of the economic impacts are discussed in the Social and Economic Impacts (Including Environmental Justice) section of Chapter 4. Under Alternative C2, site specific closure of allotments would be determined when an allotment is analyzed as described in Alternative B. Impacts of closing allotments would be similar to those described in Alternative B. In areas where grazing is permitted, management would be similar to that described in Alternative B with the addition of other protective measures for	GRSG habitats rather than at the planning unit scale. As a result, impacts on range management would vary across the decision area. A moderate decline in permitted grazing would be anticipated over time as grazing permits are modified to incorporate GRSG objectives at renewal or allotment analysis. Collaboration with the state should decrease conflicts in standards and provide a location appropriate framework, assisting permittees ability to adopt these standards and reducing impacts. PHMA and opportunity habitat would be prioritized for restoration and vegetation treatments. In most cases, treatment (e.g., conifer removal, etc.) would improve forage conditions in the long term. A 5 percent disturbance cap in PHMA would result in decreased	increased flexibility in management actions under this alternative, permittees would have more options to address GRSG habitat requirements and impacts on range management would be limited. A 5 percent disturbance cap in GRSG habitat in SGMAs/core areas would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements. Compared to Alternative A, additional year-round or seasonal limitations on mineral development would result in fewer disturbances there these limitations apply. Limiting motorized travel to existing or designated routes within GRSG habitat in SGMAs/core areas with nesting and winter habitat would reduce disturbance of livestock from cross-country travel in these areas. However, the ability to access livestock or structural range improvements may be reduced.	objectives. A moderate decline in permitted grazing is anticipated over time as permits are modified to meet objectives. Adjustments to grazing management or authorized grazing use level would be tailored to achieve Land Health Standards and specific management thresholds based on GRSG Habitat Objectives. Modifications to grazing systems could be required to meet seasonal habitat objectives, increasing costs to lessees and permittees. Impacts would occur on an allotment scale as permit renewal and related management changes were implemented. The level and intensity of impacts would vary on a site specific basis. Monitoring of site conditions and the adaptive management strategy may result in adjustments to livestock grazing to achieve objectives outside of the

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
and disturbance of livestock would be the greatest under this alternative. Conflicts between livestock grazing and OHV use are most likely to continue to occur in the 797,000 acres of BLM-administered lands open to cross-county travel on BLM-administered lands and to a lesser extent on the 437,400 acres of BLM-administered lands limited to existing routes.	are not meeting land health standards or desired conditions. A 3 percent disturbance cap in PHMA would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements. Classifying PHMA as ROW exclusion would eliminate conflicts from future ROW development. PHMA would be recommended for withdrawal from mineral entry for locatable minerals, closed to mineral materials removal, and closed to new leasing for fluid minerals. For currently leased parcels, NSO stipulations would be applied in PHMA. As a result, indirect disturbance of livestock from mineral	GRSG habitat (such as prohibition of grazing during the growing season, prohibition on new water developments and avoidance of structural range improvements). Beneficial or adverse impacts on range management from other resource uses (e.g., ROW or fluid mineral development) would be diminished in scale and intensity because of the elimination (Alternative C1) or curtailment (Alternative C2) of grazing in all allotments intersecting occupied habitat.	indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements. Compared to Alternative A, additional restrictions and stipulations on energy and mineral development would be applied for seasonal habitat requirements as well as areas adjacent to leks in PHMA, GHMA, and opportunity habitat. As a result, disturbance to livestock grazing could be reduced in these areas. Motorized travel in PHMA would be limited to existing routes at minimum and road restoration would be prioritized. As a result, long-term disturbance to livestock is likely to be reduced, particularly in PHMA and in those population areas prioritized		permit renewal cycle. Voluntary relinquishments of grazing privileges would be permitted and may result in some reduction of overall available AUMs with potential economic impacts. PHMA would be prioritized for restoration and vegetation treatments and specific vegetation objectives would be established for GRSG seasonal habitat. Impacts could occur should treatments for GRSG not match with vegetation objectives for livestock grazing; however, in most cases, treatments (e.g., conifer removal) would improve forage conditions in the long term. Conservation measures including a 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning

Table 2.5
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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	development would be minimized in PHMA.		for travel management planning.		area) in PHMA, limitations on development in buffers around leks and RFDs would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. Prohibitions on new structural improvements could limit the ability of permittees to effectively distribute livestock resulting in increases in time and costs to permittees and potentially the ability to full use of permitted AUMs. Although these constraints could increase the amount of time permittees spend to manage livestock, it should allow sufficient flexibility that permittees could continue to utilize structural range improvements to effectively distribute livestock. Compared to Alternative A, additional restrictions and stipulations on energy

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
					and mineral development would be applied reducing indirect disturbance of livestock and livestock forage. Restrictions on cross-county travel and limitation of PHMA and GHMA to existing routes would reduce disturbance to livestock. Temporary closures would further reduce disturbance livestock but have the potential to impact ability of permittees to access allotments and livestock.
Recreation					
The BLM and Forest Service would continue to manage recreation uses as identified in existing planning documents. The BLM and Forest Service would continue to review and approve recreation permits on a case-by-case basis, which would continue to meet current demand.	The BLM and Forest Service would only approve recreation permits in PHMA that have a neutral or beneficial effect on PHMA. As a result, some types of permitted activities (e.g., OHV races) that could negatively affect GRSG habitat may be impacted under Alternative B. This would result in a reduction in	Alternative C contains the most restrictions on recreational activities. For example, Alternative C would seasonally prohibit camping and other nonmotorized recreation within 4 miles of active leks. This would result in temporary reductions in recreational opportunities and decrease the area	Impacts would be the same as Alternative B, with the exception that the BLM and Forest Service would also evaluate existing recreation permits and modify or cancel those that are determined to have adverse effects on GRSG habitat. In addition to restrictions on future activities and events, Alternative D would result	Permanent, seasonal, and time-of-day limitations on activities within 1 mile of occupied leks would be implemented if the activity disrupts GRSG nesting and brood-rearing. This would result in temporary (or permanent) loss of recreational opportunities, particularly for activities that generate noise or result in surface disturbance.	Impacts would be similar to those under Alternative D, except that there would be additional restrictions on recreation facilities in PHMA, possibly leading to a partial inability to fulfill long-term recreation opportunities in those areas.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	the number and type of permits issued in the decision area and would result in fewer opportunities to engage in the types of events and activities affected.	available for recreational opportunities such as camping, mountain biking, and hiking. Alternative C also contains the greatest restrictions on coal leasing, ROWs, fluid mineral leasing, and livestock grazing. These restrictions generally reduce the potential for conflict with recreational activities and settings.	in a loss of opportunities to continue engaging in current activities and events if they are found to have adverse effects on GRSG habitat. Alternative D proposes several restrictions on surface-disturbing activities related to coal leasing, ROWs, fluid mineral leasing, and livestock grazing. These restrictions would affect recreation as described under Alternative C, although across a smaller portion of the decision area.		
Comprehensive Travel and Transportation Management					
Areas currently designated as open to cross-country OHV use would continue to be managed as such. There would be no new restrictions related to GRSG habitat management and no change in current levels of access under Alternative A.	The BLM and Forest Service would limit motorized travel to existing roads and trails in PHMA. This would reduce cross-country access in those portions of PHMA that were previously managed as open for cross-country travel. Applications for the upgrading or realignment of existing routes would be required to meet certain design, location, and	Alternative C would result in the greatest reduction in access when compared to Alternative A. For example, Alternative C would prohibit motorized cross-country travel in all GRSG habitat areas. Additionally, in PHMA, new road construction within 4 miles of active leks would be prohibited. These actions would result in site-specific	Areas in PHMA that currently do not have designated routes would be designated in a Travel Management Plan. This would reduce cross-country access in those areas that were previously managed as open for cross-country travel.	Areas of GRSG habitat in SGMAs/core areas with nesting and winter habitat that do not have designated routes in a Travel Management Plan would be designated as limited to existing routes. This would reduce cross-country access in those areas, but would occur across a smaller area than under Alternatives B or D.	Impacts would be similar to those under Alternative D, except that allocating 525 acres open to cross-country OHV use (one area each in the Parker Mountain and Uintah Population Areas) would preserve this type of access in the long-term. There would be slight (approximately one percent) differences in the

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	mitigation criteria intended to protect GRSG habitat. These requirements may preclude the construction of some new routes, but would be unlikely to reduce access across the decision area.	losses of opportunity for motorized travel and future route construction and improved access.			number of acres allocated as limited to existing routes, limited to designated routes, and closed to OHV use, and, as a result, the impacts from these allocations would be similar to those under Alternative D.
Lands and Realty					
ROW avoidance and exclusion restrictions would not prevent the BLM or Forest Service from accommodating future demand for ROW development within the planning area. Since less than 1 percent of GRSG habitat would be managed as ROW exclusion, the BLM and Forest Service lands and realty programs would be able to accommodate new ROW development associated with mineral activity. Therefore, little to no impacts on lands and realty from mineral	Managing PHMA as ROW exclusion would prevent the BLM and Forest Service from accommodating new ROW development in those areas. With a continuing demand for new ROWs in the planning area, including major inter- and intra-state electrical transmission and gas pipeline ROW developments would be diverted to adjacent nonfederal lands or prevented altogether. Development on adjacent lands could result in direct and indirect impacts on GRSG populations and habitat (e.g. vehicle traffic on roads crossing BLM-	Neither the BLM nor Forest Service would authorize new ROW development in occupied habitat. Therefore, Alternative C would further reduce opportunities for renewable energy, communication facilities, gas pipelines, fiber optic cables, electrical transmission lines, and similar ROW development from occurring in the planning area. There is a continuing demand for these ROWs in the planning area to meet energy and communication needs outside the planning area; Alternative C would prevent the BLM and Forest Service lands and realty program	Lands and Realty management under Alternative D would impact the BLM and Forest Service lands and realty programs by reducing the BLM and Forest Service's ability to authorize above-ground linear ROWs, such as electrical transmission lines, on 51 percent of PHMA. On the remaining 49 percent of PHMA, additional stipulations for the development of electrical transmission lines could result in denial of projects that cannot meet ROW grant requirements for the protection of GRSG habitat. Alternative D could also	Stipulations associated with ROW avoidance areas under Alternative E would limit the BLM and Forest Service's ability to accommodate the demand for new infrastructure development in GRSG habitat. With demand for new ROWs in the planning area, including major inter- and intra-state electrical transmission and gas pipeline ROW developments, expected to continue and increase over time, new ROW development would be diverted to adjacent nonfederal lands or would not occur at all. If new ROW development could not be feasibly developed, the result would be reduced energy and communication opportunities to meet growing demand. While the amount of land available for mineral development would be the same	Under the Proposed Plans, the BLM and Forest Service would manage for ROW development based on the type of ROW (e.g., major or minor; linear or site) and location within the planning area. New major ROWs, leases, and permits (except for roads) would only be allowed in PHMA where the proposal could demonstrate a net conservation gain to GRSG habitat and application of RDFs and other GRSG conservation strategies (e.g., tall structure limitations and buffering from leks) intended to reduce impacts on GRSG

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
development would occur under Alternative A. Existing transportation routes would continue to provide motorized access to ROW infrastructure and communication sites for construction and maintenance with no additional impacts on lands and realty from travel and transportation management.	administered and National Forest System lands), especially if the development is within close proximity to GRSG habitat on BLM-administered or National Forest System lands. Within exclusion areas, BLM and Forest Service would only consider new ROW authorizations where the proposed infrastructure, including construction and staging during construction, could be collocated entirely within the footprint of an existing ROW. BLM and Forest Service would require collocation in GHMA where possible. Impacts on the lands and realty program under Alternative B would include the need to locate proposed facilities outside exclusion areas or within existing ROWs, which limits the BLM's ability to accommodate the demand for new infrastructure development, including any	from meeting those needs. Impacts from mineral development would be the same as Alternative B. with the exception that all PHMA (4,008,580 acres) would be recommended for withdrawal from locatable mineral entry, meaning there would be a larger area with less demand for ROW infrastructure. BLM management would prohibit new road construction within 4 miles of active leks. Because of the density of active lek sites, new road construction would be limited throughout many areas in PHMA. Limitations on new road construction would limit the BLM's and Forest Service's ability to authorize new road ROW applications in PHMA.	result in an increase in the number of underground ROW applications received as ROW applicants seek opportunities to place ROW infrastructure in areas otherwise excluded for above-ground infrastructure. Impacts from mineral development would be similar to Alternative B, with the exceptions that underground coal mining would be allowed in GRSG habitat with stipulations specifically related to surface disturbance; new mineral development in PHMA would place a demand on the lands and realty program through the need for new or modified ROW authorizations. Impacts from travel management would be the same as those described above under Alternative B.	as under Alternative A, stipulations could reduce the number and distribution of ROW applications associated with new mineral development projects. Impacts from travel management would be the same as those described above under Alternative B.	habitat. The Proposed Plans could increase the number of ROWs proposed to be underground; however, RDFs and siting specifications could promote more collocated development, especially in existing corridors. Impacts from mineral development and travel management would be the same as Alternative D. Impacts from a 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) could result in direct and indirect long-term impacts where BSUs or project areas exceed the cap and ROWs become excluded.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	wind energy development. Prohibitions on new mineral development would decrease the number of ROW applications received by the BLM and Forest Service for roads, distribution lines, and related infrastructure necessary to support mineral activity. This impact would be especially notable east of Wasatch front where coal development potential is high. Limitations on new road construction and the incorporation of supplemental mitigation requirements could make certain areas impractical for new ROW development.				
Renewable Energy					
Under Alternative A, zero acres of lands with "Good" or better wind potential would be managed as ROW exclusion or avoidance areas. As a result, applications in	Under Alternative B, 12,600 acres considered to have "Good" or better wind potential would be managed as ROW exclusion areas and, as a result, 7 percent reduction in the amount of developable windy lands	Under Alternative C, 35,500 acres considered to have "Good" or better wind potential would be managed as ROW exclusion areas and would not be open for ROW applications and, as a result, 19 percent reduction	Impacts on wind energy from ROW exclusion management would be the same as under Alternative B. CSU and TL stipulations would be applied to all 9,720 acres of lands with high	Under Alternative E, 12,600 acres considered to have "Good" or better wind potential would be managed as ROW avoidance areas and, as a result, 7 percent of the developable windy lands across the State of Utah would be subject to restrictions on development.	Impacts on wind energy from ROW exclusion management (avoidance management on National Forest System lands in the Wyoming portion of the planning area) would be similar to Alternative D;

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
these areas would likely continue to be accepted by the BLM with few restrictions. However, if, GRSG becomes a federally listed species, the Section 7 Consultation process would be likely to result in substantial project constraints. All of the acres of high geothermal potential would continue to be open without restrictions or stipulations. However, there is still very little reasonably foreseeable development within the planning area. The limited resource potential and historic interest in wind and geothermal development reduces the magnitude of short- and long-term direct and indirect impacts on renewable energy.	across the State of Utah would be unavailable for development. Under Alternative B, an additional 22,900 acres considered to have "Good" or better wind potential would be managed as ROW avoidance areas and, as a result, an additional 12 percent of the developable windy lands across the State of Utah would be subject to restrictions on development. Under Alternative B, 136,170 acres would be closed to geothermal leasing, including 8,050 acres of high potential and 118,500 acres of moderate potential lands. Implementation of Alternative B would result in the closure of 83 percent of all high potential geothermal lands to leasing within the decision area that were open under Alternative A. This closure would continue to directly impact the fluid minerals program by	in the amount of developable windy lands across the State of Utah would be unavailable for development. Under Alternative C, 186,700 acres would be closed to geothermal leasing, including 9,700 acres of high potential and 166,800 acres of moderate potential lands. Implementation of Alternative C would result in the closure of 100 percent of all high and moderate potential geothermal lands to leasing within the decision area, likely eliminating geothermal energy development in the decision area. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.	potential for geothermal energy. In addition all 29,600 acres of lands with moderate potential would be subject to NSO stipulations. As a result, geothermal operations would be limited in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private or state minerals that are open to leasing. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.	No additional acres of high or moderate potential would be closed to geothermal leasing as compared to Alternative A. NSO stipulations would be removed from 20 acres of moderate potential lands under Alternative E. There would also be an additional 8,100 acres of high potential lands and an additional 94,000 acres of moderate potential land that would be subject to CSU and TL stipulations, resulting in limitations on geothermal energy development in these areas. Existing leases would remain valid through their term but could not be renewed, resulting in a long-term loss of geothermal energy development opportunities. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.	with the exception that wind energy would be further discouraged in GHMA due to RDFs, lek buffers, and mitigation requirements. Under the Proposed Plans, 120,600 acres of high and moderate geothermal development potential areas acres would be subject to NSO stipulations with waivers, exceptions, and modifications. Fewer acres would be closed compared to Alternative A. NSO stipulations, combined with RDFs, CSU stipulations, and TLs would limit geothermal development opportunities and may force development in areas that are challenging to access or have less economic resources. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private or state minerals that are open to

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	prohibiting the development of geothermal energy on portions of federal mineral estate. Geothermal operations would be limited in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private or state minerals that are open to leasing. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.				leasing. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.
Minerals					
Fluid Minerals					
Under Alternative A, 3,219,000 acres (97 percent) of BLM-	Because all PHMA would be closed to fluid mineral leasing under Alternative B,	Because the entire decision area would be closed to fluid mineral leasing under	All BLM-administered and National Forest System surfaces within PHMA not	All BLM-administered and National Forest System surface within GRSG habitat in SGMAs/core areas not already	For lands managed according to the BLM and Forest Service-Utah

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
administered and National Forest System surface within the decision area would continue to be open to ROW location. However, wherever there was overlap between federal oil and gas leases and the 94,800 acres (3 percent) of 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, the fluid minerals program could be indirectly impacted by the resulting limits on the available means for transporting fluid minerals to processing facilities and markets. Under Alternative A, 31,600 acres with high development potential (5 percent of the federal mineral estate with high development potential) would remain closed to oil	managing areas as ROW exclusion in PHMA would have no impact on fluid minerals. All federal mineral estate within PHMA (3,328,800 acres or 83 percent of the federal mineral estate decision area) would be closed to oil and gas leasing. These closures would include 407,100 acres with high potential (32 percent of the high potential acres in the decision area). Closure of these acres would directly impact the fluid minerals program in the manner described under Alternative A. However, because the acreage closed would increase under Alternative B, the magnitude of these impacts would also increase. Existing leases would remain valid through their term but could not be renewed, resulting in further long-term restrictions on the development of fluid mineral	Alternative C, managing areas as ROW exclusion would have no impact on fluid minerals. All federal mineral estate in the decision area (4,008,600 acres) would be closed to oil and gas leasing. Closure of these acres would directly impact the fluid minerals program in the manner described under Alternative A; however, because Alternative C would close the most acres out of any alternative, the magnitude of these impacts would also increase. Management actions applicable to existing leases under Alternative C would be similar to those under Alternative B, but they would apply to 561,800 acres of existing leases on federal mineral estate (all existing leases in the decision area). In addition to applying the restrictive management under	already managed as ROW exclusion would be managed as ROW avoidance for surface and underground linear ROWs (including pipelines and roads). As a result, 2,754,200 acres (83 percent) of BLM-administered and National Forest System surface in the decision area would be managed as ROW avoidance for these types of ROWs, and 27,600 acres (less than 1 percent) would be managed as ROW exclusion. Oil and gas leases beneath BLM-administered and National Forest System surface in PHMA would be indirectly impacted in the manner described under Alternative A; however because all BLM-administered and National Forest System surface would be managed as either ROW avoidance or ROW exclusion under Alternative D, the magnitude of impacts would increase.	managed as ROW exclusion would be managed as ROW avoidance. As a result, 2,654,000 acres (80 percent) of BLM-administered and National Forest System surface in the decision area would be managed as ROW avoidance, and 27,600 acres (1 percent) would be managed as ROW exclusion. Oil and gas leases beneath BLM-administered and National Forest System surface in GRSG habitat in SGMAs/core areas would be indirectly impacted in the manner described under Alternative A; however, because the acres managed as ROW avoidance would increase compared with Alternative A, the magnitude of these impacts would increase. All federal mineral estate within GRSG habitat in SGMAs/core areas (3,262,500 acres or 81 percent of the decision area) would be subject to CSU stipulations and TLs. Application of these stipulations would limit the siting, design, and operations of oil and gas development projects in the manner described under Alternative A; however, because these stipulations would be applied throughout the decision area under Alternative E, the magnitude of the impacts would increase.	Proposed Plans, all acres in PHMA would be either closed to leasing or open subject to NSO stipulations, therefore no oil and gas activities on future leases within these areas would require new ROWs. Therefore, managing PHMA as ROW avoidance would not impact new leases. Existing leases in PHMA would be impacted as described under Alternative A. However, because more acres would be managed as ROW avoidance under these Proposed Plans, and because additional restrictions would be applied to any ROW development that was allowed in PHMA or GHMA, impacts would increase. For lands managed according to the Forest Service-Wyoming Proposed Plan, timing and distance limitations would

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
and gas leasing. Acres closed in this category would have the greatest impact on the fluid minerals program by prohibiting the development of oil and gas on portions of federal mineral estate with high potential for oil and gas development. In areas closed to leasing (totaling 138,500 acres of federal mineral estate for this alternative), oil and gas operations would be restricted in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of fluid mineral development in the planning area and could result in operators moving to nearby private or state minerals that are open to leasing.	resources. Conservation measures in addition to RDFs would be applied as COAs to existing leases on 540,600 acres of PHMA overlying federal mineral estate, 213,000 acres of which are held by production. Application of these requirements through COAs would impact fluid mineral operations by increasing costs if it resulted in the application of additional requirements and/or use of more expensive technology (such as remote monitoring systems) than would otherwise have been used by operators. To avoid these costs, operators may move to nearby state or private minerals, resulting in lost royalties for the BLM and Forest Service.	Alternative B to more acres, Alternative C would call for COAs implementing seasonal restrictions on vehicle traffic and human presence associated with exploratory drilling. This alternative also would limit new surface disturbance on existing leases to 3 percent per section, with some exceptions. Impacts of these operating and siting restrictions would be the same type as those described under Alternative B, although the magnitude of the impacts would increase.	The BLM and Forest Service would apply a buffer system to manage oil and gas development in and adjacent to occupied habitat. Under this system, leks would be surrounded by buffers of varying sizes in which NSO and/or CSU/TL stipulations would apply. In addition, CSU and/or TL stipulations would apply to all areas within occupied habitat that are outside a lek buffer. The buffer system would result in application of these restrictions to some areas outside but adjacent to occupied habitat. Application of these surface disturbance restrictions, TLs, and other operating standards would limit the siting, design, and operations of oil and gas development projects in the manner described under Alternative A; however, because these restrictions and standards would be applied throughout the decision		be increased to include prohibiting surface occupancy and disruptive activities within 0.6 miles of occupied leks and density limitations of 1 location per 640 acres and a 5 percent disturbance cap would reduce and limit mineral activity compared to Alternative A. All federal mineral estate within PHMA (3,258,300 acres or 80 percent of the federal mineral estate decision area) would be open to oil and gas leasing subject to NSO stipulations. These stipulations would apply to 347,800 acres with high potential (44 percent of the high potential acres in the decision area). Federal fluid minerals in area subject to NSO stipulations could be leased, but the leaseholder/operator would have to use offsite methods such as directional or horizontal drilling to

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
			area under Alternative D, the magnitude of the impacts would increase. These impacts would be mitigated in GHMA where off-site mitigation could allow operators to waive the applicable stipulations.		access mineral resources that have high potential for oil and gas development. The area where directional and horizontal drilling can be effectively used is limited, meaning some minerals may be inaccessible in areas where an NSO stipulation covers a large area or where no leasing is allowed on surrounding lands. Because the acreage subject to NSO stipulations would increase by six times compared with Alternative A, the magnitude of these impacts would also increase under the Proposed Plans. Application of the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) in PHMA could impact both new and existing fluid mineral activities by preventing or restricting new surface

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
					development. In PHMA, the density of energy and mining facilities would be limited to one energy/mining facility per 640 acres. When calculated at the project level, this requirement would push developers to consolidate facilities and, where technically feasible, directionally or horizontally drill from outside of GRSG habitat. Application of lek buffers in GHMA could impact new and existing fluid mineral activities by restricting new surface development. Impacts of applying RDFs would be similar in nature and magnitude to Alternative D.
Nonenergy Leasables					
Under Alternative A, 3,870,080 acres (97 percent) of federal mineral estate in the decision area would remain open to leasing consideration, and	Under Alternative B, 3,341,300 acres or 83 percent of the federal mineral estate decision area (including all federal mineral estate in PHMA) would be	All federal mineral estate in the federal mineral estate decision area (4,008,600 acres) would be closed to prospecting and leasing. This alternative would close the	Like Alternative A, under Alternative D, 138,500 acres (3 percent) of federal mineral estate in the decision area would be closed to nonenergy	Nonenergy leasable mineral allocations under Alternative E would be the same as those under Alternative A and would result in the same impacts. New leases in GRSG habitat in	Impacts of closing PHMA to nonenergy mineral leasing in the BLM and Forest Service-Utah portions of the planning area would be similar to

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
138,500 acres (3 percent) would remain closed to prospecting and leasing. Management actions that close areas to nonenergy leasable mineral prospecting and leasing would directly impact nonenergy leasable minerals by reducing the area available for prospecting and leasing. If the most lucrative resources were closed to prospecting and leasing, developers may have to prospect and extract resources that are not as lucrative, thus decreasing profit. Nonenergy leasable mineral development operations may also move to nearby private or state minerals containing nonenergy leasable mineral resources within GRSG habitat. This change would result in lost royalties for the BLM and Forest Service.	closed to prospecting and leasing. Management under this alternative would close 24 times more federal mineral estate to nonenergy leasable mineral prospecting and leasing than management under Alternative A. Closing areas to nonenergy mineral prospecting and leasing would result in the same type of impacts as those described under Alternative A, but over a larger area. Existing federal nonenergy leasable mineral leases in the 3,328,800 acres of federal mineral estate in PHMA would be subject to RDFs, which would limit surface disturbance, vehicle use, siting, and design of mineral development operations in addition to imposing reclamation requirements. Application of RDFs would increase costs of nonenergy leasable development if it delayed resource development or resulted in the use of more expensive	most acres out of all the alternatives. Closing areas to nonenergy mineral prospecting and leasing would result in the same type of impacts as those described under Alternative A, but over a larger area.	leasable mineral prospecting and leasing. Another 2,905,100 acres (73 percent) of federal mineral estate within PHMA and within 1 mile of leks in GHMA would be closed to leasing for development by surface mining but would be open to leasing for development by underground mining. Closing areas to nonenergy mineral leasing for development by surface mining could increase costs of development by requiring developers to use more expensive or less efficient underground mining methods.	SGMAs/core areas, including leases for commercial prospecting, would be subject to limitations on siting, disturbance (including a 5 percent disturbance cap), tall structures, noise, and timing of development activities. Impacts of these limitations would be the same type as those described for RDFs under Alternative B.	those under Alternative B. Impacts would be mitigated because new leases adjacent to existing operations would be allowed, but these new leases would be subject to a disturbance cap, lek buffers, and RDFs. Impacts of these restrictions would be similar to those under Alternatives B and D. PHMA is not closed to nonenergy leasable minerals on National Forest System lands in the Wyoming portion of the planning area.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
	technology or less efficient development than would otherwise have been used.				
Coal					
There would continue to be 3,982,800 acres, or 99 percent of the decision area acceptable for leasing and suitable for surface mining. Management of 1 percent of the decision area as unacceptable for leasing would continue to preclude development of some coal resources. Continuing to apply disturbance buffers and seasonal TLs on surface disturbing and disruptive activities in portions of GRSG breeding, nesting, and winter habitat would directly impact development of coal resources by limiting the siting, design, timing, and operations of coal development projects. This, in turn, could delay resource development and	Under Alternative B, 3,328,800 acres (83 percent of the decision area), including all federal mineral estate in PHMA, would be managed as unsuitable for surface mining. This closure to surface mining would include 161,400 acres with high coal development potential (87 percent of federal mineral estate with high coal potential in the decision area). Management of areas as unsuitable for surface mining would preclude development of surface coal resources in the Alton area. Where possible depending on coal resources and geology, coal operations may relocate to nearby state, county, and private minerals. However, state, county, and private mineral resources are often fragmented and limited	Under Alternative C, 4,008,600 acres of federal mineral estate (100 percent of the decision area) would be managed as unsuitable for surface mining. This closure to surface mining would include 185,500 acres with high development potential (100 percent of high potential federal mineral estate in the decision area). Management of areas as unsuitable for surface mining would have the same type of impacts as those described under Alternative B, but occurring over a larger area. Underground coal mining would be allowed to occur in all PHMA; however, restrictions on surface disturbing appurtenant facilities could deter new leasing.	Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. Additional areas could be determined to be unsuitable for surface mining after site-specific review in the same manner described under Alternative A. New leases for surface mining in PHMA would be subject to limitations on noise, structure height, and timing of activities, as well as mitigation requirements and a 5-percent disturbance cap. These limitations would increase costs of coal development and could create development delays due to limits on the timing of activities. New and existing leases for	Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. All new surface and underground leases, as well as exploration activities, on the 3,262,500 acres of federal mineral estate in GRSG habitat in SGMAs/core areas (81 percent of the decision area) would be subject to limitations on siting, disturbance, noise, and timing of activities. Mitigation may also be required. These limitations and requirements would have the same type of impacts as those described under Alternative D. Underground coal mining would be allowed to occur in all PHMA. Some restrictions would be placed on development of appurtenant facilities to protect GRSG.	Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. Additional areas could be determined to be unsuitable for surface mining after site-specific review in the same manner described under Alternative A. Measures to protect GRSG and its habitat (disturbance cap, lek buffers, net conservation gain requirements, and restrictions on noise and season) could affect the feasibility of new underground coal leases or the expansion of existing underground operations (e.g., increased costs and

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	 *E2: Wyoming*	Proposed Plans
require operators to use more costly development methods than they otherwise might have used.	in extent. Underground coal mining would be allowed to occur in all PHMA; however, restrictions on surface disturbing appurtenant facilities could deter new leasing.		underground mining in PHMA would be required to avoid surface disturbance or, if such avoidance is not technically feasible, limit predator perching opportunities, noise, and timing of activities such as construction and vehicle noise. Additional mitigation would also be required. These limitations would increase costs of coal development and could create development delays due to limits on the timing of activities. Exploration activities would also be subject to limitations on surface disturbance and timing of activities, which would increase costs and delays. Underground coal mining would be allowed to occur in all PHMA. Some restrictions would be placed on development of appurtenant facilities to protect GRSG.			development delays due to limits on the timing of activities) but would not preclude them. In the Panguitch Population Area where surface mining occurs, the aforementioned measures to protect GRSG and its habitat would affect surface coal production.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
Locatable Minerals					
Under Alternative A, 28,000 acres (8 percent) of federal mineral estate with high potential would remain withdrawn, and an additional 40 acres (less than 1 percent) with high potential would continue to be recommended for withdrawal. Approximately 334,000 acres (92 percent) of federal mineral estate with high potential in the decision area would remain open to locatable mineral entry. Withdrawal or closure of an area to mining development eliminates the ability to access and extract the mineral resources in that area under new claims. This represents an impact on the potential discovery, development, and use of those resources by decreasing the availability of mineral resources. In addition, validity exams must be completed on all existing claims in	Under Alternative B, 287,600 acres (79 percent) of federal mineral estate with high potential in the decision area (including all PHMA) would be recommended for withdrawal, compared with 40 acres under Alternative A. The large increase in areas recommended for withdrawal under this alternative compared with Alternative A would increase the development delays and costs of validity exams on the BLM, Forest Service, or claimant described under Alternative A. Additional BMPs would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever those operations are modified. These BMPs could increase the cost of locatable mineral development.	Under Alternative C, 334,000 acres (92 percent) of federal mineral estate with high potential in the decision area would be recommended for withdrawal, compared with 40 acres under Alternative A. The remainder of the high potential acres in the decision area would already be withdrawn. Impacts from these actions would be the same type as those described under Alternative A, however, total withdrawals (including lands currently withdrawn) under this alternative would increase as compared to Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area. Like Alternative B, additional BMPs would be applied to the extent consistent with the rights of a mining claimant for existing	Like Alternative A, 498,100 acres (12 percent) of federal mineral estate in the decision area would remain withdrawn from location under the Mining Law of 1872, as amended, and an additional 600 acres (less than 1 percent) would be recommended for withdrawal. Impacts from these actions would be the same as those described under Alternative A. Like Alternative B, additional restrictions and BMPs for locatable minerals may apply in PHMA and GHMA. To the extent practicable, surface disturbance could be limited to under the 5 percent disturbance limit, and enhancements of PHMA through on-site and/or off-site mitigation could be requested. These limits and mitigation measures could increase the costs of locatable mineral development compared with	Like Alternative A, 498,100 acres (12 percent) of federal mineral estate would remain withdrawn from location under the Mining Law of 1872, as amended, and an additional 600 acres (less than 1 percent) would continue to be recommended for withdrawal. Impacts from these actions would be the same as those described under Alternative A. Similar to Alternative D, Alternative E would propose additional restrictions for locatable minerals that may apply in GRSG habitat in SGMAs/core areas. These limits and mitigation measures could increase the costs of locatable mineral development compared with Alternative A, but not to the extent that locatable mineral development subject to such limits and mitigation measures would no longer be practicable.	Under the Proposed Plans, 235,000 acres (65 percent) of federal mineral estate with high potential in the decision area would be recommended for withdrawal, compared with 40 acres under Alternative A. Impacts from these actions would be the same type as those described under Alternative A, however, total withdrawals (including lands currently withdrawn) under this alternative would increase as compared to Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area. Like Alternative B, additional surface disturbance limitations would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever these operations are modified.

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
withdrawn areas. The need for these exams adds costs and delays for the BLM, Forest Service, and claimant. This alternative would be the least restrictive to locatable minerals because a larger percentage of the decision area would be open to locatable mineral entry and no additional restrictions would be applied to mining operations.		operations within PHMA whenever these operations are modified. These BMPs could increase the cost of locatable mineral development.	Alternative A, but not to the extent that locatable mineral development subject to such limits and mitigation measures would no longer be practicable.		These RDFs could increase the cost of locatable mineral development.
Saleable Minerals (Mineral Materials)					
Approximately 73,500 acres (2 percent) of federal mineral estate within the decision area would remain closed to mineral material disposal. This would include 21,800 acres (2 percent) of federal mineral estate with mineral material occurrence in the decision area. Closing these areas to mineral material disposal would result in pits relocating nearby to meet	Approximately 3,340,000 acres of federal mineral estate in PHMA (83 percent of the federal mineral estate decision area) would be closed to mineral material disposal. This includes 1,140,000 acres with mineral material occurrence (87 percent of federal mineral estate with mineral material occurrence in the decision area). The types of impacts from these closures would be	Approximately 4,008,600 acres of federal mineral estate (the entire federal mineral estate decision area) would be closed to mineral material disposal. This includes all acres with mineral material occurrence in the decision area. The types of impacts from these closures would be the same as those discussed under Alternative A; however, because 39 times more	The BLM and Forest Service would prohibit mineral material disposal within 1 mile of leks and would close all PHMA to commercial mineral material disposal. Under this alternative, 2,967,500 acres (74 percent) of federal mineral estate within the decision area would be closed to commercial mineral material disposal but open to noncommercial mineral	All federal mineral estate not closed to mineral material disposal under Alternative A would remain open (3,932,200 acres, or 98 percent of the decision area), including 1,325,600 acres with mineral material occurrence. Additional restrictions would apply to the 3,262,500 acres of federal mineral estate within GRSG habitat in SGMAs/core areas (81 percent of the decision area), including maximum cumulative new permanent disturbance from mineral materials development of no more than 5 percent of GRSG	For lands managed according to the BLM and Forest Service-Utah Proposed Plans, all federal mineral estate in PHMA would be closed to mineral material disposal. This includes 1,196,900 acres with mineral material occurrence (89 percent of federal mineral estate with mineral material occurrence in the decision area). The types of impacts

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
demand for road maintenance and other needs. If demand for mineral materials could not be met by pits operated on federal lands, pits would move onto private or state lands. If no mineral materials occurred near closed areas, developers would have to transport them to construction sites from further away, which would alter the location of mineral materials development and increase transportation costs associated with that development.	the same as those discussed under Alternative A; however, because 24 times more acres of federal mineral estate with mineral material occurrence would be closed under Alternative B, the magnitude of these impacts would increase. In PHMA, mineral material pits no longer in use would be restored to meet GRSG habitat conservation objectives. Requiring reclamation of mineral material pits no longer in use could increase costs on developers if additional reclamation beyond that required under Alternative A were necessary to meet the specific objectives related to GRSG habitat and if the BLM and Forest Service required the developers to pay for the reclamation.	acres of federal mineral estate with mineral material occurrence would be closed under Alternative C, the magnitude of these impacts would increase. Any mineral material development within occupied habitat would occur on private or state minerals. Mineral material pits no longer in use in PHMA would be restored in the same fashion as that described under Alternative B; however, because all of the decision area would be designated as PHMA under Alternative C, this management action would apply to more acres.	material disposal. This includes 1,030,900 acres with mineral material occurrence (79 percent of federal mineral estate with mineral material occurrence in the decision area). Noncommercial mineral material development would be allowed in these areas with restrictions on siting, disturbance, noise, structure, height, and timing. These types of restrictions would increase costs of mineral material development if they resulted in the use of more expensive technology or less efficient development methods. Closing acres to commercial mineral material development would prevent large-scale commercial operations while allowing county and community operations, which are generally smaller scale. Additionally, 352,800 acres of federal mineral estate within PHMA (9 percent of	habitat in SGMAs/core areas in each population area. Impacts of these restrictions on mineral material development would be the same type as those described under Alternative D.	from these closures would be the same as those discussed under Alternative A; however, because 55 times more acres of federal mineral estate with mineral material occurrence would be closed under the Proposed Plans, the magnitude of these impacts would increase. Impacts would be somewhat mitigated because new free use permits and expansion of existing pits would be allowed, subject to restrictions. PHMA is not closed to mineral material disposal on National Forest System lands in the Wyoming portion of the planning area. In GHMA, lek buffer distances to protect GRSG and their habitat would restrict development and could possibly push it to less desirable locations or require compensatory

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
			the decision area) would be closed to both commercial and noncommercial mineral material disposal, 103,200 acres of which have mineral material occurrence (8 percent of federal mineral estate with mineral material occurrence in the decision area). Impacts of these closures would be the same type as those described under Alternative A; however, because 3 times more acres of federal mineral estate would be closed to mineral materials disposal under this alternative, the magnitude of those impacts would increase.		mitigation but would not prohibit such activities.
Oil Shale and Tar Sands					
Under Alternative A, no disturbance cap would be applied to anthropogenic disturbance in GRSG habitat. Therefore, oil shale and tar sands development could continue to occur subject to stipulations and other restrictions applied in	Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under Alternative B. There could be indirect impacts resulting from the	Under Alternative C, approximately 2,320 acres of the White River Oil Shale Preference Right Lease Area and all 2,120 acres of the pending federal lease within the Asphalt Ridge Special Tar Sands Area would be subject to a 3 percent cap,	Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under Alternative D. Areas within one mile of an occupied lek surrounding	Impacts under Alternative E would be the same as those under Alternative A.	Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under the Proposed Plans. However, oil shale and tar sands development in

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
the Vernal RMP (for the White River Oil Shale Preference Right Lease Area) and site-specific NEPA analyses. If exclusion or avoidance areas are near the White River Oil Shale Preference Right Lease Area or the pending lease in the Asphalt Ridge Special Tar Sands Area, there could be indirect impacts resulting from the limits on the available means for accessing and transporting oil shale and tar sands to processing facilities and markets. Impacts would be mitigated where new ROWs could be collocated within existing ROWs to satisfy valid existing rights.	limits on access and the available means for transporting oil shale and tar sands to processing facilities and markets. Impacts would be mitigated where new ROWs could be collocated within existing ROWs to satisfy valid existing rights.	which would include fire. The Uintah Population Area, where the White River Oil Shale Preference Right Lease Area is located, is currently just under the 3 percent disturbance cap. New development could push the area over the cap and reduce opportunities for new surface disturbance in this portion of the Preference Right Lease Area until areas are reclaimed to the point where disturbance is below the threshold. Impacts on existing leases would be the same type as those described under Alternative B; however, the magnitude of impacts could be more severe because new ROWs would not be permitted in areas surrounding the pending tar sands lease and in areas surrounding 2,320 acres of the White River Oil Shale Preference Right Lease Area.	the White River Oil Shale Preference Right Lease Area and the pending federal lease within the Asphalt Ridge Special Tar Sands Area would be managed as ROW avoidance. Impacts of this management would be similar to those under Alternative B, but fewer acres would be affected. Overall, impacts would increase compared with Alternative A.		GHMA would be subject to RDFs, lek buffers, and net conservation gain requirements, which could impact oil shale and tar sands development by restricting new surface development. ROW development surrounding the leases would also be subject to these restrictions.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah*	*E2: Wyoming*	Proposed Plans
Special Designations						
Areas of Critical Environmental Concern						
Sagebrush habitat is the only relevant and important value identified for the 15 potential ACECs and Zoological Areas proposed for designation under Alternative C. Refer to the summary of impacts for Special Status Species – Greater Sage-Grouse, and Vegetation (Including Noxious Weeds; Riparian and Wetlands), for detailed analyses of sagebrush management in the decision area, including the areas encompassing these 15 proposed ACECs and Zoological Areas.						
The BLM would continue to manage the seven designated ACECs within GRSG occupied habitat to protect the identified relevant and important values. Current management would continue protecting the values. None of the identified relevant and important values is GRSG.	Nearly all new surface-disturbing activities in ACECs would be precluded. Adopting more restrictive management of surface-disturbing activities would be complementary to the protection of the relevant and important values of the existing ACECs. Therefore, in general, Alternative B could enhance the relevant and important values of the existing ACECs to a greater extent than Alternative A. In all cases, the relevant and important values would be protected from irreparable damage.	Impacts would be similar to those under Alternative B. However, because all occupied GRSG habitat would be managed as PHMA, restrictions would be in place for all existing ACECs.	Surface-disturbing activities in ACECs would be allowed with stipulations, RDFs, or BMPs. However, where current management is more restrictive than what is proposed in this alternative, current management would continue to apply. As a result, this alternative would be at least as restrictive as current management. In all cases, the relevant and important values would be protected from irreparable damage.	Impacts would be the same as described under Alternative D.		Where ACECs overlap restrictions on surface-disturbing activities, impacts would be similar to Alternative B. Where surface-disturbing activities are allowed in ACECs, stipulations or RDFs would apply to mitigate the impacts of the activities. As with Alternative D, where current management is more restrictive than the Proposed Plans, current management would continue to apply. As a result, the Proposed Plans would be at least as restrictive as current management. In all cases, the relevant and important values would be protected from irreparable damage.

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
Wilderness Study Areas					
Due to the requirement that any activity in WSAs meet the nonimpairment standard, implementing management proposed in the various alternatives would not impair wilderness characteristics. Management to protect GRSG could enhance naturalness, or, at a minimum, be complementary to management in WSAs. However, this would not vary greatly between the alternatives.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.
Other Special Designations (National Historic Trails)					
The BLM and Forest Service would continue to manage the California, Old Spanish, and Pony Express National Historic Trails in accordance with direction in approved LUPs; BLM Manual 6250, National Scenic and Historic Trail Administration; BLM Manual 6280, Management of National Scenic and	There would be restrictions on surface-disturbing activities in PHMA and GHMA to protect GRSG. Restrictions would preclude nearly all new surface-disturbing activities. Implementing such restrictions would be complimentary to the protection of national	Impacts would be the same as described under Alternative B.	Surface-disturbing activities would be allowed with stipulations, design features, or BMPs. Because management proposed under this alternative would not apply in instances where current management is more restrictive, managing for GRSG would, at a minimum, provide similar management to Alternative	Impacts would be the same as described under Alternative D.	Where national trails overlap restrictions on surface-disturbing activities, impacts would be similar to Alternative B. Where surface-disturbing activities are allowed in national historic trail corridors, stipulations or RDFs would apply to mitigate the impacts of the activities. As with Alternative D, where

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation; and the existing comprehensive plan for the California and Pony Express National Historic Trails (National Park Service 1999). A comprehensive plan for the Old Spanish National Historic Trail is being developed jointly by the BLM and National Park Service. New policy addressing the management of National Historic Trails was issued by the BLM in 2012. The BLM will manage National Historic Trail resources, qualities, values, and associated settings, and the primary use or uses in accordance with the direction provided in BLM Manual 6280. This policy will be adhered to during any site-specific project NEPA analyses that are	historic trails.		A. Where more stringent restrictions on surface-disturbing activities would apply than under Alternative A, implementing such restrictions would be complimentary to the protection of national historic trails.		current management is more restrictive than the Proposed Plans, current management would continue to apply. Implementing additional restrictions on surface-disturbing activities would be complimentary to the protection of national historic trails.

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
conducted in the decision area.					
Social and Economic Impacts (Including Environmental Justice)					
Current employment and earnings trends in the primary study area would not be affected. Lowest nonmarket values associated with GRSG. Current trends in tax revenues in the primary study area would not be affected. Current trends in population growth and demand for housing and public services would not be affected. Alternative most favorable to business interests. No environmental justice impacts.	Employment in the primary study area would be reduced by an estimated 0.4 percent of the current employment and earnings would be reduced by an estimated 0.6 percent of current earnings when compared to Alternative A. Impacts on nonmarket values associated with GRSG between Alternatives A and C. Tax revenues in the primary study area would be lower than under Alternative A but higher than under Alternative C. Impacts on population growth would be between those of Alternatives A and C No environmental justice impacts.	Employment in the primary study area would be reduced by an estimated 0.7 (C2) to 0.8 (C1) percent of the current employment and earnings would be reduced by an estimated 1.0 (C2) to 1.1 (C1) percent of current earnings when compared to Alternative A. Adverse effect on nonmarket values associated with livestock grazing when compared to Alternatives A, B, D, and E, and the Proposed Plans; positive effect on nonmarket values associated with GRSG. Tax revenues in the primary study area would be lower than under alternatives A, B, D, or E or the Proposed Plans. Potential adverse impact on capacity of some communities to attract and	Employment and earnings in the primary study area would be reduced by an estimated less than 0.1 percent of the current employment and earnings when compared to Alternative A. Nonmarket values associated with GRSG greater than A or E but lower than B or C. Tax revenues would be lower than under Alternative A but higher than under alternative B. Impacts on population growth would be between those of Alternatives A and B. No environmental justice impacts.	Impact on employment and earnings in the primary study area would be the same as under Alternative A. Nonmarket values associated with GRSG greater than A but lower than B, C or D. Impact on tax revenues in the primary study area would be the same as under Alternative A. Impact on population growth in the primary study area would be the same as under Alternative A. No environmental justice impacts.	Impact on employment and earnings would be a reduction of an estimated 0.1 percent of the current employment and earnings when compared to Alternative A. Nonmarket values associated with GRSG greater than A, D or E but lower than B or C. As Alternative D, tax revenues would be lower than under Alternative A but higher than under alternative B. Impacts on population growth would be between those of Alternatives B and D. No environmental justice impacts.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* *E2: Wyoming*	Proposed Plans
		retain population. Alternative most favorable to conservation interests. No environmental justice impacts.			
Tribal Interests					
Under all alternatives, the BLM would continue to manage BLM-administered lands in a manner that accommodates Native American religious traditions, practices, and beliefs as guided by directives contained in BLM Manual 8120, American Indian Religious Freedom Act (42 USC 1996), Native American Graves Protection and Repatriation Act (25 USC 3001), Executive Order 13007 (Indian Sacred Sites), and Executive Order 13084 (Tribal Consultation), and Secretarial Order 3317, DOI Policy on Consultation with Indian Tribes (December 1, 2011). The Forest Service would also continue to manage National Forest System lands as guided by Forest Service Manual 1500 (External Relations) and Forest Service Handbook 1509 (American Indian and Alaska Native Relations). All alternatives allow for the appropriate tribal governments to consult on a case-by-case basis on undertakings on BLM-administered and National Forest System lands that could affect Native American concerns. The BLM and Forest Service would continue to identify, protect, and preserve tribal assets, treaty rights, sacred/religious sites, or special use areas through site- and project-specific modification or mitigation on a case-by-case or project-by-project consultation basis.					

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