Chapter 2
Alternatives

CHAPTER 2
ALTERNATIVES

2.1 INTRODUCTION

This chapter details Alternatives A through E for the Utah Sub-region LUPA/EIS. The BLM and Forest Service developed the action alternatives by considering issues and concerns raised during the public scoping period, planning criteria, and guidance applicable to management of resources and resource uses relevant to managing GRSG habitat. These alternatives offer a range of possible management approaches for responding to USFWS identified threats and issues and concerns identified through public scoping, and to maintain or increase GRSG abundance and distribution in the planning area.

While all alternatives with the exception of the no action alternative are designed to meet the purpose and need of the project, which is to identify and incorporate conservation measures in LUPs to conserve, enhance, and restore GRSG habitat by reducing, eliminating, or minimizing threats to that habitat in the Utah Sub-region planning area, each alternative contains a unique set of objectives and management actions.

In addition to meeting the purpose and need, all alternative being considered within this planning process with the exception of the no action alternative are consistent the conservation measures and objectives outlined in the COT Report and follow the basic principles of (1) avoiding the impact of an activity; (2) minimizing impacts by limiting the degree of activity; and (3) mitigating for an impact by improving or enhancing GRSG habitat. Each of the alternatives considers different means for accomplishing this strategy. For example, some alternatives place greater emphasis on avoidance of impacts, whereas other alternatives place more emphasis on minimization and mitigation.

Through this planning process, the BLM and Forest Service are also 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 **2.5**, which can be found in **Appendix A**, show the areas where GRSG management/conservation will be emphasized under each alternative. Under Alternatives B, C, and D mapped GRSG habitat would be managed as either PPMAs or PGMAs. As discussed in **Chapter 1**, PPMAs are areas that have the highest conservation value. PGMAs include mapped occupied habitat outside PPMAs. Under Alternative E1, GRSG habitat determined to have the highest conservation value by the State of Utah would be managed as Sage-Grouse Management Areas (SGMAs). GRSG habitat outside of the SGMAs would receive no management protection. 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.

Included in the sections below is a brief description of each alternative being considered within this LUPA/EIS. In addition to this written description, three alternatives tables have been included in this chapter. **Table 2.1**, Description of Alternatives A, B, C1, C2, D, E1, and E2, includes a detailed, complete description of the goals and objectives, management actions, and allowable uses being considered under each alternative. This table, which is organized by resource or resource program, provides the basis for impact analysis. The decisions included in this table will be used to amend existing BLM and Forest Service LUPs.

Based on the complexity of decisions being considered in this LUPA/EIS, two summary tables are also included in this chapter to assist the reader in understanding the differences between the alternatives. **Table 2.2**, Comparison of Alternatives by USFWS Identified Threats, shows the essential decisions being considered under each alternative, and the USFWS threat that each decision is intended to reduce or eliminate. Finally, **Table 2.3**, Summary Comparison of Alternatives, provides a quantitative summary of the alternatives. For a summary of environmental consequences, refer to **Table 2.4**, Comparison of Alleviated Threats to GRSG in the Utah Sub-Region, and **Table 2.5**, Summary of Environmental Consequences.

2.1.1 Alternative A

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.

2.1.2 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 PPMAs (**Map 2.1**, Greater Sage-Grouse Priority/General Management Areas–Alternative B) 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, PPMAs 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 PPMAs would be categorized as PGMAs. In most instances, PGMAs would continue to be managed under current management direction.

2.1.3 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, PPMAs (**Map 2.2**, Greater Sage-Grouse Priority Management Areas–Alternative C) 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 alternatives, Alternative C1 and Alternative C2. Under Alternative C1, all GRSG habitat currently available for livestock grazing would become unavailable. In addition, wild horse appropriate management levels (AMLs) would be reduced by 25 percent. Under Alternative C2, the BLM and Forest Service would reduce permitted animal unit months (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 D**, Methodology for Calculating a Substantial Livestock Grazing Reduction under Alternative C2.

PPMAs 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 PPMAs 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 PPMAs. Therefore, there would be no PGMAs.

2.1.4 Alternative D

Alternative D is the Utah Sub-region's alternative. This alternative was developed by the Utah BLM in cooperation with the Forest Service Intermountain Region, and local USFWS. This alternative includes modifications to the conservation measures identified in the NTT report and is designed to address local ecological site variability. This alternative also emphasizes balancing resources and resource use among competing human interests, land uses, and the conservation of GRSG habitat.

Under Alternative D, PPMAs (**Map 2.3**, Greater Sage-Grouse Priority/General Management Areas–Alternative D) would be open to most land uses, but well-defined 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 would continue to occur in GRSG habitat, so long as that habitat is meeting science-based resource objectives. A unique aspect of Alternative D is that some management decisions would extend outside of mapped occupied sage-grouse habitat. Decisions that extend outside of mapped occupied habitat are intended to protect GRSG from indirect and cumulative impacts.

Under Alternative D, PPMAs 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 PPMAs would be categorized as PGMAs. PGMAs would be open to all land uses, but well-defined stipulations would be applied to most authorizations and actions within 1 mile of occupied GRSG leks.

2.1.5 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 alternatives, Alternative E1 and Alternative 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 E 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 2.6**, State of Utah Sage-Grouse Management Areas). Management activities or restrictions identified in the plan only apply to GRSG habitat located in the SGMAs (**Map 2.4**, Greater Sage-Grouse Habitat within Sage-Grouse Management Areas–Alternative E1).

While not identical to the population areas, the 11 state-identified SGMAs correlate with the population areas that have been 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, fire would count toward the disturbance threshold, but vegetation treatments would not.

Under Alternative E1, occupied habitat outside of the state-identified SGMAs would not receive any management protection.

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 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 School and Institutional Trust Lands Administration (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 Wyoming. 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**, Greater Sage-Grouse Core and Non-Core Areas in Wyoming–Alternative E2). Both core and non-core habitat would be open to most land uses, but well-defined stipulations would be applied to authorizations and actions. 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 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.

2.2 MONITORING FOR THE GREATER SAGE-GROUSE PLANNING STRATEGY

The BLM's planning regulations, specifically 43 CFR 1610.4-9 require that LUPs 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 LUP decisions (implementation monitoring) and collecting data/information necessary to evaluate the effectiveness of LUP decisions (effectiveness monitoring). The Forest Service Planning Regulations at 36 CFR 219.6(b) require that plans describe a monitoring program for the planning area that establishes monitoring questions and associated performance measures. Monitoring questions must link to one or more desired condition, objective, or guideline. For GRSG, these types of monitoring are also described in the criteria found in the Policy for Evaluation of Conservation Efforts (PECE) When Making Listing Decisions (50 CFR Vol. 68, No. 60). One of the PECE criteria 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. In keeping with the WAFWA Sage-grouse Comprehensive Conservation Strategy (Stiver et al. 2006)

and the COT Report (USFWS 2013a), the BLM and Forest Service will monitor implementation and effectiveness of conservation measures in GRSG habitats.

On March 5, 2010 the 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered was posted as a *Federal Register* notice (75 FR *Federal Register* 14014). 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 across the range occurs across jurisdictional boundaries (52 percent BLM, 31 percent private, 8 percent Forest Service, 5 percent state, 4 percent tribal and other federal; 75 *Federal Register* 13910), and because state fish and wildlife agencies have primary responsibility for population level management of wildlife, including population monitoring. Therefore, population efforts will continue to be conducted in partnership with state fish and wildlife agencies. The BLM and Forest Service are currently in the process of finalizing a monitoring framework which will be included in the Proposed LUPA/Final EIS. This framework will describe the process that the BLM and Forest System will use to monitor implementation and effectiveness of LUP decisions. The Monitoring Framework will include: methods, data standards, and intervals of monitoring at broad and mid scales; consistent indicators to measure and metric descriptions for each of the scales (see Habitat Assessment Framework and Assessment, Inventory and Monitoring core indicators); analysis and reporting methods; and the incorporation of monitoring results into adaptive management. The need for fine and site-scale 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. The major components of the Monitoring Framework can be found in **Appendix E**, Greater Sage-Grouse Draft Monitoring Framework, of this Draft EIS.

More specifically, the framework will discuss 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 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, PPMAs, and PGMAs at the broad scale, and attributes of habitat availability, patch size, connectivity, linkage areas, 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 the change in the density of energy development. The framework will also include methodology for analysis and reporting for BLM field, district, and state offices, and Forest Service ranger districts, forests and regions, including geospatial and tabular data for disturbance mapping (e.g., geospatial footprint of new permitted disturbances) and effectiveness of management actions.

The monitoring data will provide the indicator estimates for adaptive management. The BLM and Forest Service will adjust management decisions through an adaptive management process.

2.3 ADAPTIVE MANAGEMENT

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. On February 1, 2008, the DOI published its Adaptive Management Implementation Policy (522 Department Manual 1). The adaptive management strategy presented within this EIS complies with this policy.

In relation to the BLM's National Greater Sage-grouse Planning Strategy, adaptive management will help identify if GRSG conservation measures presented in in this EIS contain the needed level of certainty for effectiveness. If principles of adaptive management are incorporated into the conservation measures in the plan (to ameliorate threats to a species), then there is a greater likelihood that a conservation measure or plan will be effective in reducing threats to that species. The following provides the BLM adaptive management strategy this GRSG planning process. Forest Service regulations regarding Adaptive Management Policy are found in its NEPA regulations (36 CFR 220.5((e)(2)).

2.3.1 Adaptive Management and Monitoring

As discussed in **Section 2.2**, Monitoring for the Greater Sage-Grouse Planning Strategy, this Draft EIS contains a monitoring framework plan (**Appendix E**) which 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 (BLM 2004; Stiver et al. 2006; USFWS 2013a). When available from WAFWA and/or state wildlife agencies, information about population trends will be considered with effectiveness monitoring data (taking into consideration the lag effect response of populations to habitat changes [Garton et al. 2011]). The information collected through the Monitoring Framework Plan outlined in **Appendix E** will be used by the BLM to determine when adaptive management hard and soft triggers (discussed below) are met.

2.3.2 Adaptive Management Strategy

The BLM and Forest Service will develop an adaptive management strategy to provide certainty that unintended negative impacts on GRSG will be addressed before consequences become severe or irreversible and to provide regulatory certainty to the USFWS that appropriate action will be taken by the BLM and Forest Service. This adaptive management strategy will:

- identify science based soft and hard adaptive management triggers applicable to each population or subpopulation within the planning area,
- address how the multiple scale data from the Monitoring Framework Plan (**Appendix E**) will be used to gauge when adaptive management triggers are met, and
- charter an adaptive management working group to assist with responding to soft adaptive management triggers.

Adaptive Management Triggers

Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting GRSG conservation objectives. The BLM and Forest Service will use a continuum of trigger points (soft and hard triggers), which will enhance BLM and Forest Service's ability to effectively manage GRSG habitat. The soft and hard triggers that will be delineated in the adaptive management plan will (at a minimum):

- be based upon the best available science,
- tied to the populations/demographics,
- take into account the importance of various seasonal habitat types, and
- not be limited to a single time "window".

Soft triggers indicate when the BLM and Forest Service will consider adjustments to resource/resource use management. An adaptive management working group will help identify the causal factors as to what prompted the soft adaptive management

trigger. The group will also provide recommendations to the appropriate BLM authorizing official (decision maker) regarding the applicable management response to address this trigger (e.g. effective mitigation, restoration, reclamation, and in some instances, a LUP amendment or revision). When organizing the adaptive management working group, the BLM and Forest Service will invite participation from BLM, Forest Service, USFWS, local governments, and UDWR.

Hard triggers indicate when the BLM and Forest Service will take immediate action to stop the continued deviation from conservation objectives. These actions could include one or more of the following (which may require subsequent NEPA:

- Temporary closures (in accordance with 43 CFR 8364.1 and as directed under IM No. 2013-035),
- Immediate implementation of interim management policies and procedures through the BLM directives system, and
- Initiation of a new RMP amendment to consider changes to the existing RMP decisions.

2.4 Regional Mitigation Strategy

Mitigation strategies, which take into account the mitigation hierarchy (avoid, minimize, restore, offset), are an important tool for ensuring the BLM and Forest Service meets their GRSG resource objectives while continuing to honor our multiple-use mission. The BLM and Forest Service priority is to mitigate impacts on an acceptable level onsite, to the extent practical, through avoidance (not taking a certain action or parts of an action), minimization (limiting the degree or magnitude of the action and its implementation), rectification (repairing, rehabilitating, or restoring the affected environment), or reduction of impacts over time (preservation and maintenance operations during the life of the action). While mitigating impacts for proposed projects to an acceptable level onsite is typically analyzed and determined through site-specific, implementation-level NEPA documents and their commensurate decision documents, the analysis and mitigation for project level activities would be tiered to the analysis and mitigation proposed throughout each of the action alternatives in this EIS. **Appendix F**, Regional Mitigation Strategy, provides the approach to the regional mitigation strategy.

2.5 Habitat Boundary Adjustments

The mapped occupied habitat used as a baseline for this planning process was not intended to represent a survey-grade boundary and is not expected to be used at a project-level. In accordance with the adaptive management framework and 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-M-6840 .04 E 2). Prior to considering proposed actions within mapped occupied habitat, a field investigation 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 boundaries. If in the review of a proposed action, there are discrepancies 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 important to the GRSG life-cycle, GRSG habitat may exist outside of the mapped occupied habitat areas. Habitat maps may be revised 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 simple plan amendments). Additional qualifications for adjusting GRSG mapped occupied habitat are considered within the range of alternatives. The administrative process through which boundary adjustments will be made would be determined on a case-by-case basis.

2.6 Detailed Comparison of Alternatives

As mentioned in the introduction, **Table 2.1**, Description of Alternatives A, B, C1, C2, D, E1, and E2, contains the goals, objectives, and management actions being

considered for all alternatives in this LUPA/EIS. This table, which is organized by resource or resource program, provides the basis for impact analysis. The decisions/directions included in this table will be used to amend existing BLM and Forest Service LUPs and make decisions regarding the availability of lands for leasing on National Forest System lands. As discussed in **Chapter 1**, within this LUPA/EIS the BLM and Forest Service are considering amending 14 RMPs and 6 LRMPs, respectively. Based on the number of plans being amended as part of this LUPA/EIS, it was not possible to include a list of every decision from every plan that could be amended. Therefore, **Table 2.1** encapsulates existing management decisions across the Utah Sub-region. A complete list of decisions/directions included in individual plans that could be amended can be found in **Appendix G**, Detailed No Action Alternative.

In some instances, current management to protect resources other than GRSG is stricter than what is proposed in the action alternatives. In these cases, the existing management would prevail.

Quick Links to Management Actions for Resource Topics

Table 2.1
Description of 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,	Goal GRSG–1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					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 identified.	Designate PPMAs 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: • MZ II – Wyoming Basins • MZ III – Southern Great Basin • MZ IV – Snake River Plain • MZ VII – Colorado Plateau Protect PPMAs from anthropogenic disturbances that will reduce distribution or abundance of GRSG.	Establish a system of sagebrush reserves to anchor recovery efforts by protecting the highest quality habitats.	Identify and protect PPMAs 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 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.	Identify and prioritize opportunities for habitat enhancement and conservation within core areas based on threats and the ability to manage GRSG habitat.	Objective GRSG–1
Recently completed BLM plans include a management action to implement the most recent *UDWR Strategic Management Plan for Sage-Grouse* (UDWR 2002), the	To maintain or increase current populations of GRSG, manage or restore PPMAs so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet	Restore and maintain sagebrush steppe to its ecological potential in GRSG habitat.	Manage or restore PPMAs so that at least 50 percent of the landscape (mapped occupied habitat within a population area) provides sagebrush cover to meet GRSG needs.	Enhance an average of 25,000 acres of GRSG habitat in SGMAs annually. Increase the total amount of GRSG habitat acreage within	Restore native (or desirable) plants and create landscape patterns which most benefit GRSG. Write specific LUP objectives for vegetation that connects habitats and creates	Objective GRSG–2

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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 include land cover.	GRSG needs.		Within PPMAs 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) – or comparable Forest Service methods, maintain or restore vegetation to provide habitat for 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.	and adjacent to SGMAs by an average of 50,000 acres per year, through management actions targeting Opportunity Areas.	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 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.	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					When developing objectives for residual cover and species diversity, identify the ecological site types within the planning area and refer to the 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.	Objective GRSG–3

Table 2.1
Description of 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 PGMAs.	Quantify and delineate PGMAs for capability to provide connectivity among and between PPMAs.	No similar action because all mapped occupied habitat would be PPMA	Delineate and manage mapped occupied GRSG habitat outside PPMAs as PGMAs.	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.	Objective GRSG–4
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.	Objective GRSG–5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

<table>
<tr><th>Alternative A</th><th>Alternative B</th><th>Alternative C</th><th>Alternative D</th><th>Alternative E1</th><th>Alternative E2</th></tr>
<tr><td colspan="6"><u>Management Actions:</u></td></tr>
<tr>
<td>Acreage of mapped occupied GRSG habitat is as follows:

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

Under current management, there are no designated PPMAs or PGMAs.</td>
<td>Identify PPMAs and PGMAs as follows (Map 2.1):

<table>
<tr><th rowspan="2">Population Area</th><th colspan="2">Acres</th></tr>
<tr><th>PPMA</th><th>PGMA</th></tr>
<tr><td>Uintah</td><td>348,400</td><td>294,200</td></tr>
<tr><td>Carbon</td><td>128,200</td><td>46,600</td></tr>
<tr><td>Emery</td><td>81,500</td><td>6,200</td></tr>
<tr><td>Parker Mountain</td><td>524,800</td><td>7,000</td></tr>
<tr><td>Panguitch</td><td>221,600</td><td>0</td></tr>
<tr><td>Bald Hills</td><td>256,800</td><td>10,700</td></tr>
<tr><td>Hamlin Valley</td><td>101,000</td><td>0</td></tr>
<tr><td>Sheeprocks</td><td>463,100</td><td>52,800</td></tr>
<tr><td>Ibapah</td><td>47,000</td><td>10,100</td></tr>
<tr><td>Box Elder</td><td>364,100</td><td>49,000</td></tr>
<tr><td>Rich</td><td>180,200</td><td>1,200</td></tr>
<tr><td>Lucerne</td><td>0</td><td>2,300</td></tr>
<tr><td>Strawberry</td><td>40,200</td><td>0</td></tr>
<tr><td>WY-Uinta</td><td>1,100</td><td>20,900</td></tr>
<tr><td>WY-Blacks Fork</td><td>23,700</td><td>31,100</td></tr>
<tr><td>Statewide</td><td>2,781,700</td><td>532,100</td></tr>
<tr><td>% Occupied</td><td>84%</td><td>16%</td></tr>
</table></td>
<td>Identify PPMAs and PGMAs as follows (Map 2.2):

<table>
<tr><th rowspan="2">Population Area</th><th colspan="2">Acres</th></tr>
<tr><th>PPMA</th><th>PGMA</th></tr>
<tr><td>Uintah</td><td>642,600</td><td>0</td></tr>
<tr><td>Carbon</td><td>174,800</td><td>0</td></tr>
<tr><td>Emery</td><td>87,700</td><td>0</td></tr>
<tr><td>Parker Mountain</td><td>531,800</td><td>0</td></tr>
<tr><td>Panguitch</td><td>221,600</td><td>0</td></tr>
<tr><td>Bald Hills</td><td>267,500</td><td>0</td></tr>
<tr><td>Hamlin Valley</td><td>101,000</td><td>0</td></tr>
<tr><td>Sheeprocks</td><td>515,900</td><td>0</td></tr>
<tr><td>Ibapah</td><td>57,100</td><td>0</td></tr>
<tr><td>Box Elder</td><td>413,100</td><td>0</td></tr>
<tr><td>Rich</td><td>181,400</td><td>0</td></tr>
<tr><td>Lucerne</td><td>2,300</td><td>0</td></tr>
<tr><td>Strawberry</td><td>40,200</td><td>0</td></tr>
<tr><td>WY-Uinta</td><td>22,000</td><td>0</td></tr>
<tr><td>WY-Blacks Fork</td><td>54,800</td><td>0</td></tr>
<tr><td>Statewide</td><td>3,313,800</td><td>0</td></tr>
<tr><td>% Occupied</td><td>100%</td><td>0%</td></tr>
</table></td>
<td>Identify PPMAs and PGMAs as follows (Map 2.3):

<table>
<tr><th rowspan="2">Population Area</th><th colspan="2">Acres</th></tr>
<tr><th>PPMA</th><th>PGMA</th></tr>
<tr><td>Uintah</td><td>348,400</td><td>294,200</td></tr>
<tr><td>Carbon</td><td>136,200</td><td>38,600</td></tr>
<tr><td>Emery</td><td>81,500</td><td>6,200</td></tr>
<tr><td>Parker Mountain</td><td>524,800</td><td>7,000</td></tr>
<tr><td>Panguitch</td><td>198,100</td><td>23,500</td></tr>
<tr><td>Bald Hills</td><td>256,800</td><td>10,700</td></tr>
<tr><td>Hamlin Valley</td><td>101,000</td><td>0</td></tr>
<tr><td>Sheeprocks</td><td>409,200</td><td>106,700</td></tr>
<tr><td>Ibapah</td><td>47,000</td><td>10,100</td></tr>
<tr><td>Box Elder</td><td>412,100</td><td>1,000</td></tr>
<tr><td>Rich</td><td>180,200</td><td>1,200</td></tr>
<tr><td>Lucerne</td><td>0</td><td>2,300</td></tr>
<tr><td>Strawberry</td><td>40,200</td><td>0</td></tr>
<tr><td>WY-Uinta</td><td>1,100</td><td>20,900</td></tr>
<tr><td>WY-Blacks Fork</td><td>23,700</td><td>31,100</td></tr>
<tr><td>Statewide</td><td>2,760,300</td><td>553,500</td></tr>
<tr><td>% Occupied</td><td>83%</td><td>17%</td></tr>
</table></td>
<td>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):

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

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 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</td>
<td>MA-GRSG-1</td>
</tr>
</table>

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				combined acres of PPMA and PGMA 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 PPMAs and PGMAs 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 PPMAs or PGMAs 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-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	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 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	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 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	MA-GRSG-2

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 to areas adjacent to PPMAs can be reduced or eliminated (e.g., sound, tall structures). Proposed projects within population areas will consider impacts to GRSG and potential mitigation measures when preparing site-specific planning and environmental compliance documents. <u>Additional Sage-Grouse Habitat</u> Outside of mapped occupied	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 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.	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 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 a PPMA, 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 may be considered include those identified in Appendices H, I, J, K, or L. On Forest Service administered 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			

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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. Other than the abovementioned decision, and basic planning allocations, management actions specific to GRSG are not present in most LUPs.	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 PPMAs: • 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 migration/ movement corridors. • Reduce conifer encroachment within PPMAs. • 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 PPMAs where objectives are not being met.	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; 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.	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 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 conditions of approval (COAs) within core GRSG habitat for Fluid Minerals, travel management,	MA-GRSG-3

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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 GRSG and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	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 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					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 PPMAs so that discrete anthropogenic disturbances cover less than 3 percent of the total GRSG habitat regardless of ownership. 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 PPMAs 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 PPMA to prioritize and reclaim/restore anthropogenic disturbances	Limit discrete surface disturbance in PGMAs to one instance per section of GRSG habitat regardless of ownership, with no more than 3 percent surface disturbance (or, where stipulated, implement the 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, 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.	Protect PPMAs from fragmentation by anthropogenic disturbances that will reduce distribution or abundance of GRSG by managing PPMAs so that discrete anthropogenic disturbances cover less than 5 percent of the area within the PPMA 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	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 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	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 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.	MA-GRSG-4

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	so that 3 percent or less of the total PPMA area is disturbed within 10 years.	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 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 PPMAs with discrete surface disturbances to be considered successful, GRSG must be documented to have used the area.	contained within the PPMA 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 lands should generally be excluded. • Areas in PPMAs 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 PPMA), 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	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 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.		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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, 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	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 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.		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			percent if total disturbances in the identified disturbance calculation area equals or is less than 5 percent. 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 PPMAs 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		<u>Restoration/Reclamation of Surface Disturbances:</u> Reclamation of surface disturbances in GRSG habitats will be in accordance with the	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			been successfully reclaimed (short-term) and restored (long-term). The objective of long-term restoration/reclamation in PPMAs 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 PPMAs, 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 blend in with adjacent		Wyoming Reclamation Policy and Forest Service Reclamation policy.	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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., drought). Plants must be resilient as evidenced by well-developed root systems and flowers; shrubs must be well			

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 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			

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 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	No similar action.	No similar action.	Do not allow discrete anthropogenic disturbances or activities disruptive to GRSG (including scheduled maintenance activities) within PPMAs in seasonal GRSG habitats during the corresponding seasonal use periods (Map 3.2-3, Current and Historic Greater Sage-Grouse Habitat): • In breeding and nesting habitat from Feb 15 – Jun 15 • In brood rearing habitat from	Within SGMAs in seasonal GRSG habitats during the corresponding seasonal use periods, avoid activities (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.	<u>Leks – core habitat</u> • Permanent 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. • 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.	MA-GRSG-5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.			Apr 15 – Jul 15 • In winter habitat from Nov 15 – Mar15 In addition, the following use requirements would be applied to discretionary activities within PPMAs, 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 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	• 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 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	• Noise levels at the 0.6 mile perimeter of the lek, should not exceed 10 decibels above ambient noise from 6 pm to 8 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 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 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	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 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>	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). <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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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/ 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 when GRSG use a given area, and the proposed activity will not take place beyond the season being excepted.	• 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 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	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. As new research is completed, new specific limitations would be coordinated with the WGFD and partners.	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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. • 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		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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. <u>Other Habitats</u> • 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		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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 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 PPMAs and PGMAs 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.	MA-GRSG-6
Under current management plans, there are no designated PGMAs.	Conserve, enhance or restore PGMAs and connectivity to promote movement and genetic diversity, with emphasis on those habitats occupied by GRSG.	No similar action.	Conserve PGMAs to maintain existing habitat and maintain connectivity between populations, or if necessary, to provide for opportunities to improve PPMAs.	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	MA-GRSG-7

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			Do not allow discrete anthropogenic disturbances or activities disruptive to GRSG (including scheduled maintenance activities) within PGMAs in seasonal GRSG habitats during the corresponding seasonal use periods (Map 3.2-3, Current and Historic Greater Sage-Grouse Habitat): • 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 PGMAs, 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		GRSG leks. <u>Nesting/Early Brood-Rearing Habitat – non-core habitat</u> • 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. <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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 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		be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability).	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			area, as determined by the BLM/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 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 PGMAs may be waived by the Authorized Officer if off-site mitigation is successfully completed in PPMAs, following discussion with BLM/Forest Service and the State of Utah. Even in situations where use restrictions are waived in PGMAs, to avoid direct disturbance and/or mortality of birds, disturbances would not be approved during the sensitive seasons.			
No opportunity areas identified in current	Assess PGMAs to determine potential to replace lost PPMA	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/	MA-GRSG-8

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
management plans. 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 PPMAs. • These habitats should be given some priority over other PGMAs that provide marginal or substandard GRSG habitat. • Restore historical habitat functionality to support GRSG populations guided by objectives to maintain or enhance connectivity. • Enhance PGMAs 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, boundaries of the SGMA, or the land types within, should be adjusted accordingly.	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.	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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/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 operations during the life of the action, or • compensating for the impact by replacing or providing	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 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	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.	MA-GRSG-9

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			substitute resources or environments. Money for research or monitoring within PPMA 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 PPMAs will occur within the same population area of the impact. For off-site mitigation associated with mitigation of actions within PGMAs, project proponents will work closely with the BLM and the State of Utah to identify PPMAs 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 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	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, 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:		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 (if a given project impacts 1 percent of wintering habitat versus 30 percent of the wintering habitat). Mitigation that trades impacts to areas that are meeting habitat objectives with creation of areas that do not meet habitat objectives, even in high	<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 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		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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.	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 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.		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				• 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 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.		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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 PPMAs 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 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	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 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	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 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*	MA-VEG-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 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.	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 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.	*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 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.	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			• The need for post-treatment control of non-native annual grass and other invasive species.			
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. 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.	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 within PPMAs the highest restoration priority.	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 PPMAs. 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 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	No similar action.	Identify areas for vegetation restoration and/or identify restoration criteria that include State GRSG conservation plans and appropriate local information.	MA-VEG-2

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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.			
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 PPMAs 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.	MA-VEG-3
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	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	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	MA-VEG-4

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
restoration activities.	GRSG.				may be used as long as they meet GRSG habitat objectives), and design restoration management to obtain long term persistence.	
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 PPMAs 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.	MA-VEG-5
Most LUPs do not include a similar action.	Consider potential changes in climate when proposing restoration seedings when	Same as Alternative B.	Allow for seed collection and use in restoration/reclamation activities. Prioritize use of seed	No similar action.	No similar action.	MA-VEG-6

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
A few plans include management actions that encourage use of native species from local sources when possible.	using native plants. Consider collection from the warmer component of the species current range when selecting native species.		from areas as close as possible to where the seed will be used to 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.	MA-VEG-7
The practices found in Appendix H, Required Design Features for Fire and Fuels,	Follow the required design features (RDFs) for fire and fuels (BLM IM 2013-128; see	Same as Alternative B.	Follow the applicable and technically feasible RDFs and policies for fire and fuels	Aggressively remove cheatgrass and other invasive species, and rehabilitate areas	Give priority for implementing specific GRSG habitat restoration projects in annual	MA-VEG-8

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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.	Appendix H, Required Design Features for Fire and Fuels)		outlined in Appendix H, Required Design Features for Fire and Fuels.	to provide additional habitat for GRSG where possible.	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 purposely restore or enhance GRSG habitat.	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 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.	Make reestablishment of sagebrush cover and desirable understory plants the highest priority for restoration efforts	MA-VEG-9
No similar action.	In fire prone areas where sagebrush seed is required for GRSG habitat restoration, consider establishing seed harvest areas that are managed	Same as Alternative B.	No similar action.	No similar action.	Same as Alternative B.	MA-VEG-10

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	for seed production and are a priority for protection from outside disturbances.					
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.	MA-VEG-11
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 PPMAs to those inside it. Use of native plant seeds for Emergency Stabilization and Rehabilitation or Burn Area Emergency Rehabilitation seedings is required based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet GRSG habitat conservation objectives (Pyke 2011). Re-establishment of	Same as Alternative B.	Prioritize the use of native seeds for restoration in PPMA 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 objective for rehabilitation efforts.	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),	MA-VEG-12

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	appropriate sagebrush species/subspecies and important understory plants, relative to site potential, shall be the highest priority 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.	MA-VEG-13
No similar action.	Consider potential changes in climate (Miller at al. 2011) when proposing post-fire seedings using native plants. Consider seed collections from the warmer component within a species' current range for selection of native seed. (Kramer and Havens 2009).	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.	MA-VEG-14
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.	MA-VEG-15

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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.	MA-VEG-16
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.	MA-VEG-17
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).	No similar action.	Develop and implement methods for prioritizing and restoring sagebrush steppe invaded by nonnative plants.	Same as Alternative C.	Aggressively respond to new infestations to keeping invasive 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.	MA-VEG-18
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.	MA-VEG-19

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
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 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.	MA-VEG-20
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.	<u>Alt C1:</u> Same as Alternative B.	<u>Alt C2:</u> Associated with the reduction in livestock grazing, reduce wild horse AMLs by 25	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.	MA-WHB-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
		percent for management areas that overlap mapped occupied GRSG habitat to reduce grazing pressure on vegetation.				
Prioritize wild horse/burro gathers based on monitoring data.	Prioritize wild horse/burro gathers in PPMAs, unless removals are necessary in other areas to prevent catastrophic environmental issues, including herd health impacts.	Same as Alternative B.	Same as Alternative B.	Same as Alternative A.	This section is not applicable to Alternative E2.	MA-WHB-2
Prepare or amend herd management plans on an as needed basis	Within PPMAs, develop or amend herd management plans to incorporate GRSG habitat objectives and management considerations for all BLM herd management areas (HMAs).	Same as Alternative B.	No similar action.	Same as Alternative A.	This section is not applicable to Alternative E2.	MA-WHB-3
Periodically evaluate and make adjustments to AMLs based on monitoring data.	For all HMAs within PPMAs, 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.	MA-WHB-4
No similar action.	Coordinate with other resources (e.g., range, wildlife, and riparian) to conduct land health assessments to determine existing structure/condition/	Same as Alternative B.	Same as Alternative B.	No similar action.	This section is not applicable to Alternative E2.	MA-WHB-5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	composition of vegetation within all BLM HMAs.					
No similar action.	When conducting NEPA analysis for wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PPMAs, address the direct and indirect effects to GRSG populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified above in PPMAs.	Same as Alternative B.	When considering wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PPMAs, use the criteria identified for domestic livestock in PPMAs.	No similar action.	This section is not applicable to Alternative E2.	MA-WHB-6
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	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	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.	MA-FIRE–1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			into account other GRSG priorities identified in this plan. Appendix M, Draft Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, describes a minimal framework example and 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	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 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 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			appropriate USFWS and state agency personnel.			
Fuels Management The practices found in Appendix H 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 "required design features", the measures identified in Appendix H.	Fuels Management Same as Alternative B.	Fuels Management Follow the applicable and technically feasible RDFs for fuels management in Appendix H.	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.	MA-FIRE–2
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 PPMAs, 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 PPMAs 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 restrictions for implementing fuels management treatments according to the	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. • Apply appropriate seasonal restrictions for implementing fuels management	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, a fuels management strategy which considers an up-to-date fuels profile, LUP direction, current and potential habitat fragmentation, sagebrush and	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. The WAFWA has prepared information that explains	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 be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the	MA-FIRE–3

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	type of seasonal habitats present in a PPMA. • 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 vegetation post-treatment. • Rest treated areas from grazing for two full growing seasons unless vegetation recovery dictates otherwise.	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). • Livestock grazing should be excluded from burned areas until woody and herbaceous plants achieve GRSG habitat objectives.	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 treatments are acceptable. • Allow the use of prescribed fire within PPMAs if other treatment opportunities have been explored, where site specific variables allow (will	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 appropriate regulatory agency in coordination with the UDWR. Sagebrush	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 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	• 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 projects in PPMAs to strategically and effectively reduce wildfire threats in the greatest area. This may require fuels treatments implemented in a more	• 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).	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, 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	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.	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 - 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	linear versus block design.		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).		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 implement grazing management that will accomplish this objective (Davies et al. 2011 and Launchbaugh et al. 2007). Consult with ecologists to minimize impacts to native perennial grasses.	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 management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts to native perennial grasses.	Consider the use of prescriptive grazing to specifically reduce fire size and intensity on all types of landownership, where 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	No similar action.	MA-FIRE–4

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				utilized to obtain the desired results.		
Preparedness The practices found in Appendix H 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 "required design features", the measures identified in Appendix H.	Preparedness Same as Alternative B.	Preparedness Follow the applicable and technically feasible RDFs for fire and fuels management in Appendix H. 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.	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. • 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	Preparedness Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for Vegetation Management and Fire and Fuels Management.	MA-FIRE–5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				rehabilitation, such as federal raptor stipulations, cultural assessments, and the like.		
Fire Management – (Suppression) The practices found in Appendix H 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 "required design features", the measures identified in Appendix H.	Fire Management – (Suppression) Same as Alternative B.	Fire Management – (Suppression) Follow the applicable and technically feasible RDFs for fuels management in Appendix H.	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.	MA-FIRE–6
Under current management there is no designated PPMA or PGMA. Prioritize fire suppression to protect human life and high value resources.	In PPMA, prioritize suppression, immediately after life and property, to conserve the habitat. In PGMA, prioritize suppression where wildfires threaten PPMA.	Same as Alternative B for PPMA. There is no PGMA 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 areas suitable for GRSG. Within GRSG habitat, PPMA are the highest priority for conservation and protection during fire operations and fuels management decision making. The PPMA will be viewed as more valuable than PGMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth in PGMA polygons	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 species. No specific management actions are provided for this habitat.	In core areas, prioritize suppression, immediately after firefighter and public safety to conserve the habitat. Non-core areas would be assigned a priority commensurate with its importance in the local fire plan.	MA-FIRE–7

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			as well. These priority areas will be further refined following completion of the GRSG Landscape Wildfire & Invasive Species Habitat Assessments described in Appendix M. Limit placement of fire infrastructure (e.g., fire camps, helipads, etc.) in areas of solid sagebrush. In PGMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PPMA.			
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	No similar action.	No similar action.	MA-FIRE–8

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
				sagebrush).			
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 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.	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.	<u>Alt C1:</u> Make mapped occupied GRSG habitat unavailable to livestock grazing for the life of the plan. This would result in a reduction of up to 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;	<u>Alt C2:</u> Within allotments that overlap mapped occupied GRSG habitat, reduce permitted AUMs by 131,808 permitted AUMs on BLM lands and 106,149 permitted AUMs 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	Continue to make GRSG PPMAs and PGMAs 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, 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.	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 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.	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 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	MA-GRA-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
		closing just the portions of allotments within GRSG habitats, if possible, could reduce this number).	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 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.			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. 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
						will also collaborate with appropriate Federal agencies on appropriate site based actions to achieve GRSG conservation objectives within the framework. Monitoring data 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 PPMAs, 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.	MA-GRA-2
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 PPMAs, 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 PPMAs, 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 PPMAs 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	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.	MA-GRA-3

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
				same management as the public lands.			
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 PPMAs. 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 PPMAs. 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. Within core areas, incorporate GRSG habitat objectives and	MA-GRA-4

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
				assessments to evaluate the achievement or non-achievement of rangeland health standards.		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 PPMAs, 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 recommendations from Connelly et al. 2000 and Hagen et al. 2007.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Within PPMAs 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. Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific	No similar action.	Implement direction from Executive Order 2013-03, as described in MA GRA-4.	MA-GRA-5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
				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 PPMAs 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 through discussions with UDWR biologists. Nesting/Early Brood-Rearing • Maintain and enhance the existing sagebrush/plant	Implement direction from Executive Order 2013-03, as described in MA GRA-4.	MA-GRA-6

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
					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. <u>Late Brood-Rearing</u> • Avoid continuous (season-long) grazing of wet meadows and riparian habitats, especially under drought conditions when temperatures are high. <u>Winter</u> • Carefully manage levels of browsing or activities in sagebrush areas that constitute GRSG habitat that would reduce GRSG access 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		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
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.	MA-GRA-7
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: 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	In PPMAs, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve GRSG seasonal habitat objectives. 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	Alt C1: No similar action.	Alt C2: In mapped occupied GRSG habitat, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve GRSG habitat objectives. Implement management actions (grazing	In PPMAs, 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 renewal process or other appropriate implementation action. In PGMAs, consider GRSG habitat objectives when making livestock grazing decisions. As necessary to meet land health standards and objectives for PPMAs, implement	Address incompatible grazing strategies through established rangeland management practices consistent with the maintenance or enhancement of habitat. Carefully manage the "time," "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.	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 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	MA-GRA-8

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
	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)		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 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	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 6. Class of livestock (e.g., yearlings vs. cow-calf pairs) 7. Duration of grazing use and rest periods	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 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	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 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
			livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats).		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.	appropriate actions to address non-achievement and non-conformance.	
Livestock grazing program/policy direction allows the BLM/Forest Service to make changes to livestock grazing in response to drought conditions. Changes may include adjusting livestock numbers based on available forage or shortening the season of use.	During drought periods, prioritize evaluating effects of the drought in PPMAs relative to their needs for food and cover. Since there is a lag in vegetation recovery following drought, ensure that post-drought management allows for vegetation recovery that meets GRSG needs in PPMAs.	Alt C1: No similar action.	Alt C2: During drought periods, prioritize evaluating effects of drought in GRSG habitat areas relative to their biological needs, as well as drought effects on ungrazed reference areas. Since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al.	During drought periods, prioritize evaluating effects of the drought in PPMAs relative to their 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 the Resource Management During Drought Handbook (BLM Handbook 1730-1). Implement post-drought management to allow for vegetation recovery that meets GRSG needs in PPMAs.	No similar action.	In addition to Alternative A, if periods of drought occur, where appropriate, the Authorized Officer will evaluate the season of use and stocking rate and adjust through coordination with grazing permittee/lessee and annual billings processes.	MA-GRA-9

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
			2010), ensure 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 PPMAs.	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.	MA-GRA-10
Manage, maintain, protect, and restore riparian and wetland areas to the proper functioning condition (or Forest Service equivalent method).	Within PPMAs and PGMAs, 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 to minimize elevated mortality during the late brood	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 relative to site potential (e.g., reference state)	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.	MA-GRA-11

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
	rearing period.		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.	MA-GRA-12
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	Within PPMAs, reduce hot season grazing on riparian and meadow complexes to promote recovery or maintenance of appropriate vegetation and water quality. Utilize fencing/herding techniques or seasonal use or livestock distribution changes	Alt C1: No similar action.	Alt C2: No similar action.	Within PPMAs, 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	Continue livestock grazing strategies that have proven effective in maintaining and enhancing GRSG habitat, unless compelling and credible cause-and-effect evidence indicates a disturbance exists. Address incompatible grazing	Same as Alternative A. If the causal factor of not meeting a standard is due to livestock grazing then follow Executive Order 2013-03.	MA-GRA-13

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
individual Forest Service LRMPs. Rangeland health standards require that riparian areas be managed for proper functioning condition.	to reduce pressure on riparian or wet meadow vegetation used by GRSG in the hot season (summer).			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).	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.		
Consider authorization of new water developments on a case-by-case basis taking into consideration impacts to other resources and resource values.	Authorize new water development for diversion from spring or seep source only when GRSG habitat within PPMAs would benefit from the development. This includes developing new water sources for livestock as part of an allotment management plan/ conservation plan to improve GRSG habitat.	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 PPMAs 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 wet meadow vegetation and hydrology.	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 and/or improves GRSG and its habitat within core areas. Analyze through a reasonable range of alternatives any direct, indirect, and cumulative effects of grazing on GRSG and its habitats through the NEPA process.	MA-GRA-14

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
Consider modifications to existing water developments on a case-by-case basis taking into consideration impacts to other resources.	Analyze springs, seeps and associated pipelines to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within PPMAs. Make modifications where necessary, considering impacts to 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 PPMAs 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 to 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.	MA-GRA-15
Allow treatments that provide benefits for multiple resources. Additional forage will be appropriate to livestock, wild horses and burros (where applicable), and wildlife.	In PPMAs, only allow treatments that conserve, enhance or restore GRSG habitat (this includes treatments that benefit livestock as part of an allotment management plan/ conservation plan to improve GRSG habitat).	Alt C1: No similar action.	Alt C2: Ensure that vegetation creates landscape patterns which most benefit GRSG. Only allow treatments that are demonstrated to benefit GRSG and retain sagebrush height	In PPMAs, ensure that vegetation and rangeland treatments conserve, enhance or restore GRSG habitat (this includes treatments that benefit livestock).	No similar action.	For vegetation treatments in sagebrush within core areas, refer to WGFD *Protocols for Treating Sagebrush to Benefit Sage-Grouse* (WGFD 2011a, 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	MA-GRA-16

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
			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).			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 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.	Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PPMAs to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If these seedings are part of an allotment	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and	Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PPMAs 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	No similar action.	No similar action.	MA-GRA-17

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
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.	management plan/conservation plan or if they provide value in conserving or enhancing the rest of the PPMA, 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.		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 these seedings for GRSG habitat during the land health assessments.	habitats, then no restoration would be necessary. Assess the compatibility of 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 PPMAs, 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:	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	In PPMAs, 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	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	MA-GRA-18

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
	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.		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, 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	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.		progress towards meeting rangeland health standards or ESDs (or Forest Service equivalent).	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
			establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction. Consider the comparative cost 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 to other resources.	In PPMAs, 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 PPMAs, 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.	MA-GRA-19
No similar action.	To reduce outright GRSG strikes and mortality, remove, modify or mark fences in high risk areas within PPMAs 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	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	In core and non-core, continue to evaluate and modify when necessary, existing range improvements (e.g., fences, watering facilities) associated with grazing management	MA-GRA-20

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
			GRSG strikes within GRSG habitat based on proximity to lek, lek size, and topography.		Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes").	operations for impacts on GRSG and its habitat.	
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.	In PPMAs, monitor for, and treat invasive species associated with existing range improvements.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	In PPMAs, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range improvements.	Aggressively respond to new infestations to keeping invasive 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.	Design all range projects in a manner that minimizes potential for invasive species establishment. Monitor for, and treat invasive species associated with existing range improvements	MA-GRA-21
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 PPMAs when the current permittee is willing to retire grazing on all or part of an allotment. Analyze the adverse impacts of no livestock use on wildfire and invasive species threats in evaluating retirement proposals.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Within PPMAs, 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	MA-GRA-22

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
						livestock grazing, based on soil, vegetation and other resources. Temporary use may be allowed in allotments where 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.	MA-GRA-23
No similar action.	No similar action.	Alt C1: No similar action.	Alt C2: Any vegetation treatment plan must include	No similar action.	No similar action.	No similar action.	MA-GRA-24

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2	
			pretreatment data on wildlife 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.	MA-GRA-25

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
RECREATION						
Consider BLM special recreation permits (SRPs) and Forest Service recreation special use permits (SUPs) on a case-by-case basis. Consider measures that will minimize impacts to important resources or resource values.	Only allow BLM SRPs and Forest Service recreation SUPs in PPMAs that have neutral or beneficial effects to PPMAs.	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 PPMAs that have neutral or beneficial effects to PPMAs. Evaluate existing SRPs/and Forest Service recreation SUPs for adverse effects to 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 (construction, vehicle noise, etc.) in the following	In addition to Alternative A, allow Forest Service recreation SUPs in core areas unless negative impacts to GRSG cannot be adequately mitigated.	MA-REC-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				seasons and habitats: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o In winter habitat from Nov 15 – Mar 15. o 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		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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 non-motorized recreation within 4 miles of occupied GRSG leks.	No similar action.	No similar action.	No similar action.	MA-REC-2
COMPREHENSIVE TRAVEL AND TRANSPORTATION MANAGEMENT						
Manage OHV use in GRSG habitat as follows (Map 2.44, 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 • No decision mapped: 15,100 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories.	Manage OHV use in GRSG habitat as follows (Map 2.45, 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 • No decision mapped: 1,400 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories.	Manage OHV use in GRSG habitat as follows (Map 2.46, 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 • 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	Manage OHV use in GRSG habitat as follows (Map 2.47, 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 • 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	Manage OHV use in GRSG habitat as follows (Map 2.48, 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 • No decision mapped: 9,800 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories.	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. As such, all acres of the planning area within Wyoming are included in the Alternative E1 bullet that addresses the Forest Service.	MA-TTM-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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.)	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.)	Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	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.)		
Under current management, there are no PPMAs. OHV use will be managed as identified in the area-designations above.	In PPMAs, 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.	PPMAs and PGMAs 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. PPMAs 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 efforts where impacts to GRSG from route presence or use may exist.	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, existing route designations would be reviewed and adjusted where impacts to GRSG from route presence or use may exist.	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.	MA-TTM-2
Under current management there are no designated PPMAs.	In PPMAs, 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	During implementation-level travel planning, threats to GRSG and their habitat would be considered when evaluating	No similar action.	No similar action.	MA-TTM-3

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
No similar action. Under current policy, the need for permanent or seasonal road closures is evaluated during travel management planning.		implementation-level travel planning, consider additional route closures.	route designations and/or closures.			
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 PPMAs 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.	MA-TTM-4
Under current management there are no designated PPMAs. Consider route and trail modifications (new or existing) on a case-by-case basis using the designation criteria.	In PPMAs, 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 to 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 to 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	No similar action.	Construct roads to minimum design standards needed for production activities within core areas.	MA-TTM-5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 PPMAs would be placed on having a neutral or positive effect on GRSG habitat.			
No similar action. Allow upgrades to existing roads on a case-by-case basis subject to site-specific environmental review.	In PPMAs, 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 GRSG habitat.	In PPMAs, 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 GRSG habitat.	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 necessary for motorist safety, or eliminates the need to construct a new road.	MA-TTM-6
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 PPMAs, 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 PPMAs. If that disturbance exceeds 3 percent for that area, then	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	In PPMAs, 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 PPMAs. Apply additional effective mitigation necessary to offset the resulting loss of GRSG habitat. Plan for	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.	MA-TTM-7

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	make additional, effective mitigation necessary to offset the resulting loss of GRSG habitat.	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 PPMAs. If that disturbance exceeds 3 percent for that area, then make additional, mitigation necessary to offset the resulting loss of GRSG habitat.	new routes in consideration of the larger transportation network objectives and needs while providing for protection of GRSG habitat.		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 implementation-level travel management process or on a case-by-case basis.	In PPMAs, conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in Wilderness Study Areas and within lands with wilderness characteristics that have been selected for protection.	Same as Alternative B.	In PPMAs, conduct restoration of roads, primitive roads and trails not designated for motorized or non-motorized travel in travel management plans.	No similar action.	Within core areas, allow natural deterioration of roads or conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in Wilderness Study Areas and within lands with wilderness characteristics that have been selected to be managed to retain those characteristics for protection.	MA-TTM-8
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 PPMAs, 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.	MA-TTM-9
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.	MA-TTM-10

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
LANDS AND REALTY						
Manage BLM ROWs and Forest Service special use authorizations (SUAs) in GRSG habitat as follows (Map 2.7, 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 2.7): • Open: 2,344,400 acres • Avoided: 50,800 acres • Excluded: 74,900 acres	Manage BLM ROWs and Forest Service SUAs in GRSG habitat as follows (Map 2.8, ROW Avoidance and Exclusion Areas–Alternative B): • Open: 529,600 acres • Avoided: 0 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 2.9, 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 2.10, 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 <u>Underground/Surface Linear ROWs/SUAs</u> (Map 2.11, 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 2.12, 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 BLM ROWs and Forest Service SUAs in GRSG habitat as follows (Map 2.13, 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 2.13, ROW Avoidance and Exclusion Areas–Alternative E): • Open: 2,292,000 acres • Avoided: 103,200 acres • Excluded: 74,900 acres		MA-LAR-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			Manage ROWs outside of GRSG habitat but in population areas as follows: <u>Above-Ground Linear ROWs/SUAs</u> (Map 2.10, Avoidance and Exclusion Areas for Above Ground Linear ROWs–Alternative D) • Open – 1,925,900 acres • Avoided – 462,500 acres • Excluded – 81,700 acres <u>Underground/Surface Linear ROWs/SUAs</u> (Map 2.11, Avoidance and Exclusion Areas for Surface and Underground ROWs–Alternative D) • Open – 2,337,000 acres • Avoided – 58,200 acres • Excluded – 74,900 acres <u>Above-Ground Site-Type ROWs/SUAs (non-wind or solar)</u> (Map 2.12, Avoidance and Exclusion Areas for Above Ground Site Types–Alternative D) • Open – 2,337,100 acres • Avoided – 51,700 acres • Excluded – 81,300 acres			

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
No similar action.	All ROWs/SUAs in PPMAs Make PPMAs exclusion areas for new ROWs/SUAs.	All ROWs/SUAs in PPMAs 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): PPMAs within 4 miles of an occupied lek, if the lek is located within a PPMA, would be designated as an exclusion area for new above-ground linear ROWs/SUAs, unless there is a designated corridor present. PPMAs beyond 4 miles of an occupied lek, if the lek is located within a PPMA, would be designated as an avoidance area for new above-ground linear ROWs/SUAs. Development within the avoidance areas could 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 to GRSG and their habitats (see mitigation	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 to 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, 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	All SUAs in Core Habitat GRSG core areas would be managed as an exclusion area for new SUAs.	MA-LAR-2

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			decision in the GRSG section); and • the development does not exceed the 5 percent disturbance limit. Areas outside PPMAs but within 1 mile of an occupied lek, if the lek is located within a PPMA would be designated as an exclusion area for new above-ground linear ROWs/SUAs. Areas outside PPMAs and between 1 and 4 miles of an occupied lek, if the lek is located within a PPMA, would require 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.	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: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o 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 locating development in habitat of the least importance, take advantage of topographic to screen		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			<u>Above-Ground Site-Type ROWs/SUAs (not wind/solar) (e.g., communication towers, cell towers):</u> Areas outside PPMAs but within 1 mile of an occupied lek that is located within a PPMA would be designated as an exclusion area for new above-ground site-type ROWs/SUAs (excluding wind or solar). PPMAs beyond 1 mile of an occupied lek, if the lek is located within a PPMA, 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 to GRSG and their habitats (see mitigation decision in the GRSG section); and • the development does not	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 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 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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 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> PPMAs 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			

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts to GRSG and their habitats (see mitigation decision in the GRSG section); 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 co-located 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, co-locate new ROWs within existing	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	The BLM may grant new FLPMA Title 5 ROWs for existing roads within PPMAs 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 Special Status Species section. Where new ROWs/SUAs associated with valid existing rights are required within a PPMA, co-locate new ROWs as close as technically possible to	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.	MA-LAR-3

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	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, and add the surface disturbance to the total disturbance in the PPMA. If that disturbance exceeds 3 percent for that area, then make additional effective mitigation necessary to offset the resulting loss of GRSG.	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 PPMA. 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.	existing ROWs or where it best minimizes GRSG impacts. Use existing roads, or realignments as described above, to access valid existing rights within PPMAs 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 PPMA. 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 2.14, Designated ROW Corridors–Alternative A (177,700 acres)	Designate ROW corridors as identified on Map 2.15, 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 2.16, Designated ROW Corridors–Alternative C. New ROWs are excluded from GRSG mapped occupied habitat.	Designate ROW corridors as identified on Map 2.17, 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	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.	MA-LAR-4

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			• Designate 31,700 acres as new designated ROW corridor (where new corridors would be designated, there are existing lines or disturbance already in place) 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 PPMAs 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 PPMAs.		New transmission projects would be allowed within 1/2 mile on either side of existing 115 kilovolt or larger transmission 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 PPMAs.	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	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.	MA-LAR-5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			PPMA to mitigate impacts of existing powerlines, taking into account the potential impacts of the mitigation (relocation, burying, etc.) with the existing impacts of the line.		Any new or replaced powerline or powerpole will be fitted with anti-perching devices.	
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.	MA-LAR-6
No similar action.	All ROWs/SUAs: Make PGMAs "avoidance areas" for new ROWs/SUAs.	No similar action.	All ROWs/SUAs: PGMAs within 1 mile of an occupied lek, if the lek is located within a PGMA, would be designated as an avoidance area for new ROWs (Maps 2.10, Avoidance and Exclusion Areas for Above Ground Linear ROWs–Alternative D, Map 2.11, Avoidance and Exclusion Areas for Surface and Underground ROWs–Alternative D, and Map 2.12, Avoidance and Exclusion Areas for Above Ground Site Types–Alternative D). Development within the avoidance areas could occur if: • the development (during construction and after) meets noise restrictions; • the structures remaining after development meet tall	GRSG habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	All SUAs: 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.	MA-LAR-7

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			structure restrictions; • mitigation is implemented to offset impacts to GRSG and their habitats (see mitigation decision in the GRSG section); and • the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter). PGMAs 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 PPMAs.			
Most LUPs include a management action that encourages placement of new ROWs in designated utility corridors and/or co-location of new ROWs adjacent to existing ROWs.	Where new ROWs/SUAs are necessary in PGMAs, 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.	MA-LAR-8
Land Tenure (BLM land only): Make approximately 24,400	Land Tenure (BLM land only): Retain public ownership of	Land Tenure (BLM land only): Same as Alternative B, without	Land Tenure (BLM land only): Retain public ownership of	Land Tenure (BLM land only): No similar action.	Same as Alternative B, except no specific acreages would	MA-LAR-9

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
acres of land within in GRSG habitat available for FLPMA Section 203 sale (Map 2.18, Land Tenure Adjustments–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.	PPMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for additional or more contiguous federal ownership patterns within PPMA. Under PPMAs 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 PGMAs would still be available for disposal through FLMPA Section 203 sale (Map 2.19, Land Tenure Adjustments–Alternative B).	exceptions for disposal to consolidate ownership that would be beneficial to GRSG. No BLM or National Forest System lands within mapped occupied habitat would be available for land tenure adjustments (Map 2.20, Land Tenure Adjustments–Alternative C).	PPMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for additional or more contiguous federal ownership patterns within PPMA, so long as potential land tenure adjustments benefit GRSG, and do not negatively impact other federally listed threatened or endangered species. Under PPMAs with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. For BLM lands, approximately 5,540 acres of PGMAs would still be available for disposal through FLMPA Section 203 sale (Map 2.21, Land Tenure Adjustments–Alternative D).		apply.	
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 PPMAs, 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.	MA-LAR-10
Withdrawal: Recommend approximately	Withdrawal: Recommend federal lands and	Withdrawal: Recommend federal lands and	Withdrawal: Do not recommend additional	Withdrawal: Same as Alternative D.	Withdrawal: Recommend withdrawal from	MA-LAR-11

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
498,700 acres of federal lands and non-federal lands with federal mineral interests within GRSG habitat for mineral withdrawal (Map 2.22, Locatable Mineral Withdrawals–Alternative A).	non-federal lands with federal mineral interests within PPMAs for mineral withdrawal (3,650,900 acres of new Recommended withdrawals) (Map 2.23, Locatable Mineral Withdrawals–Alternative B).	non-federal lands with federal mineral interests within mapped occupied GRSG habitat for mineral withdrawal (4,008,580 acres) (Map 2.24, Locatable Mineral Withdrawals–Alternative C).	federal lands or non-federal lands with federal mineral interests within PPMAs or PGMAs for locatable mineral withdrawal.		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.	
No similar action.	In PPMAs, 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.	MA-LAR-12
<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 2.7, ROW Avoidance and Exclusion Areas–Alternative A): • Open: 3,219,000 acres • Avoided: 67,200 acres • Excluded: 27,600 acres	<u>Wind Energy Development</u> Make PPMAs exclusion areas for new leases or ROWs/SUAs permits (2,781,700 acres) (Map 2.8, ROW Avoidance and Exclusion Areas–Alternative B).	<u>Wind Energy Development</u> Do not site wind energy development in mapped occupied GRSG habitat (3,313,800 acres) (Map 2.9, ROW Avoidance and Exclusion Areas–Alternative C).	<u>Wind Energy Development</u> PPMAs would be designated as exclusion areas for wind energy development (2,760,300 acres) (Map 2.25, Avoidance and Exclusion Areas for Wind Energy–Alternative D). Manage wind energy development in GRSG habitat as follows (Map 2.25, Avoidance and Exclusion Areas for Wind Energy–Alternative D): • Open – 522,500 acres • Avoided – 9,400 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 2.13, ROW Avoidance and Exclusion Areas–Alternative E): • Open: 632,200 acres • Avoided: 2,654,000 acres • Excluded: 27,600 acres	<u>Wind Energy Development</u> Acreages associated with the WY-Uinta and WY-Blacks Folk 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 unless it can be sufficiently demonstrated that the development activity would not result in declines of core	MA-LAR-13

Table 2.1
Description of 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 2.7, ROW Avoidance and Exclusion Areas–Alternative A): • Open: 2,344,400 acres • Avoided: 50,800 acres • Excluded: 74,900 acres			• Excluded – 2,781,900 acres Manage wind energy development outside of GRSG habitat but in population areas as follows (Map 2.25, Avoidance and Exclusion Areas for Wind Energy–Alternative D): • Open – 1,925,200 acres • Avoided – 462,500 acres • Excluded – 82,400 acres Areas outside PPMAs but within 1.0 mile of an occupied lek, if the lek is located within a PPMA, would also be excluded from wind energy development. Areas outside PPMAs but within 4 miles of an occupied lek located within a PPMA (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 development within 1.0 mile of an occupied lek located in	Manage wind energy development outside of GRSG habitat but in population areas as follows (Map 2.13, ROW Avoidance and Exclusion Areas–Alternative E): • 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 active (e.g., no activity from 2-hours before sunrise to 2-	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.	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			PGMA, whether mapped occupied GRSG habitat or not. The exclusion could be waived outside of PGMA 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 PPMAs. Development within PGMAs 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 PPMAs.	hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o In winter habitat from Nov 15 – Mar 15. o 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		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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.		
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.	MA-LAR-14
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	No similar action.	MA–MIN-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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.		
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 PPMAs to obtain exploratory information for areas outside of and adjacent to PPMAs. Allow geophysical operations only by helicopter-portable drilling methods and in accordance with seasonal timing restrictions and/or other restrictions that may apply.	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 breeding, nesting, brood rearing and winter habitats during their season of use by GRSG.	Allow geophysical exploration within SGMAs to obtain exploratory information. Geophysical exploration would be subject to the same seasonal (TL), no surface occupancy (NSO), and controlled surface use (CSU) stipulations as would be applied to leases within SGMAs.	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 existing LUP decisions.	MA–MIN-2
Nonenergy Leasable Minerals						
Under current management there are no designated PPMAs.	Close federal lands and non-federal lands with federal mineral interests within PPMAs	Close federal lands and non-federal lands with federal mineral interests within	Proposed Leases Associated with Surface Mining: Manage nonenergy leasable	Manage nonenergy leasable minerals on federal lands and non-federal lands with federal	Acreages associated with the WY-Uinta and WY-Blacks Folk population areas are included	MA–MIN-3

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within GRSG habitat as follows (Map 2.26, 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.	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 2.27, Non-Energy Solid Leasable Minerals–Alternative B): • Open to Leasing Consideration – 667,280 acres • Closed to Leasing – 3,341,300 acres	mapped occupied GRSG habitat to nonenergy leasable mineral leasing (4,008,580 acres) (Map 2.28, Non-Energy Solid Leasable Minerals–Alternative C). This includes not permitting any new leases to expand an existing mine.	minerals on federal lands and non-federal lands with federal mineral interests within GRSG habitat as follows (Map 2.29, 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 PPMAs 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 outside PPMAs and within 4 miles of an occupied lek located within a PPMA 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	mineral interests within GRSG habitat as follows (Map 2.30, 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 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	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 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 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			development meet tall structure restrictions. PGMAs within 1 mile of an occupied lek, if the lek is located within a PGMA, would have no surface disturbance stipulations associated with leasing of surface nonenergy leasable minerals. <u>Leases Associated with Underground Mining:</u> Consider leasing PPMAs 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: • Appurtenant facilities would not be placed within PPMAs, where technically feasible. • If placement of facilities outside of PPMAs is not technically feasible while still protecting GRSG habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria: o No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located	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: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o 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		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			within 1 mile of an occupied lek that is located within a PPMA. o the long-term development meets noise restrictions, including from supporting traffic along roads; o restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by GRSG; o 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; o the surface disturbance from the development does not exceed the 5 percent disturbance limit; and o 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.	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 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	No similar action.	No similar action.	Consider leasing PGMAs for	GRSG habitat outside SGMAs	No similar action.	MA–MIN-4

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
there are no designated PGMAs. 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.			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 PGMAs during activity level planning, which may include applying the criteria identified for PPMAs. The above stipulations may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PPMAs.	would not be managed for the conservation of the species. No specific management actions are provided for this habitat.		
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 activities associated with nonenergy leasable minerals would be required to comply to the following criteria within PPMAs: • 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	Prospecting 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., timing limitations, Density Disturbance Calculation Tool thresholds).	MA–MIN-5

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			(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.			
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 PPMAs, in addition to the solid minerals RDFs (Appendix I, Best Management Practices for Locatable Minerals and Required Design Features for Other Solid Minerals), follow the same RDFs applied to Fluid Minerals (Appendix J, Required Design Features for Fluid Minerals), when wells are used for solution mining.	Same as Alternative B.	For existing nonenergy leasable mineral leases in PPMAs, apply the applicable solid minerals RDFs (Appendix I, Best Management Practices for Locatable Minerals and Required Design Features for Other Solid Minerals) and Fluid Minerals RDFs (Appendix J, Required Design Features for Fluid Minerals) 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;	No similar action.	Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for nonenergy solid leasables.	MA–MIN-6

Table 2.1
Description of 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.			
Coal						
Leases Associated with Surface Mining: Under current management there are no designated PPMAs. Find approximately 22,900 acres of mapped occupied GRSG habitat unsuitable for surface mining of coal under the criteria set forth in 43 CFR 3461.5 (Map 2.31, 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	Leases Associated with Surface Mining: In PPMAs, find unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 (3,328,760 acres) (Map 2.32, 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 2.33, 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 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 PPMAs, 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;	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 successful criteria of habitat suitability and GRSG occupancy could be required as identified during the leasing process to protect GRSG habitat. Impacts to 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	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 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.	MA–MIN-7

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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 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.			• 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 restriction times; however, removal of material from existing stockpiles would be allowed.	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: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o In winter habitat from Nov 15 – Mar 15. o Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in		

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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 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	Leases Associated with	Leases Associated with	Leases Associated with	Leases Associated with	Leases Associated with	MA–MIN-8

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
Underground Mining: Under current management there are no designated PPMAs. 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 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.	Underground Mining: Grant no new mining leases unless all surface disturbances (appurtenant facilities) are placed outside of the PPMAs.	Underground Mining: Same as Alternative B.	Underground Mining: Consider leasing PPMAs 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 PPMAs, where technically feasible. • If placement of facilities outside of PPMAs is not technically feasible while still protecting GRSG habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria: o No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located within 1 mile of an occupied lek that is located within a PPMA. o the long-term development meets noise restrictions, including from supporting traffic along roads; o restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by GRSG; o the construction of the	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 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)	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 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 to 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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; o Surface disturbance from the development does not exceed the 5 percent disturbance limit; and o 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.	• Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o In winter habitat from Nov 15 – Mar 15. o 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	leasable mining action at the permitting stage.	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				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. • 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 PGMAs. 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-	No similar action.	No similar action.	Consider leasing PGMAs 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	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.	MA–MIN-9

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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 43 CFR 3461.			local options/needs). Determine which measures are needed to protect PGMAs during activity level planning, which may include applying the criteria identified for PPMAs. The above restrictions may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PPMAs.			
Under current management there are no designated PPMAs. 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 PPMAs 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.	MA–MIN-10

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
No similar action.	For coal mining operations on existing leases: *Underground mining:* in PPMAs, place any new appurtenant facilities outside of PPMAs. Where new appurtenant facilities associated with the existing lease cannot be located outside the PPMA, co-locate new facilities within existing disturbed areas. If this is not possible, then build any new appurtenant facilities to the absolute minimum standard necessary.	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 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	MA–MIN-11

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					permitting stage.	
All LUPs include management actions based on specific program direction. These management actions require the BLM to consider measures that would reduce or eliminate impact of human activities during activity level planning.	For coal mining operations on existing leases: In PGMAs, 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).	Same as Alternative B.	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.	No similar action.	MA–MIN-12
Locatable Minerals						
Under current management there are no designated PPMAs. Approximately 498,700 acres of mapped occupied GRSG habitat are recommended for withdrawal from mineral entry (Map 2.22, Locatable Mineral Withdrawals–Alternative A).	In PPMAs, 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 2.23, Locatable Mineral Withdrawals–Alternative B). • 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	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 2.24, Locatable Mineral Withdrawals–Alternative C). Everything else, same as Alternative B.	PPMAs and PGMAs 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 PPMAs and PGMAs identified in the Special Status Species section. To the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development	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	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	MA–MIN-13

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	required prior to any proposed surface disturbing activities, include the following: o 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 PPMA and deed to US Government). o Consider seasonal restrictions if deemed effective.		in PPMAs 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 PPMAs 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.	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: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-	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 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 part of the 15 day completeness review of notices [or modifications	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
				rearing areas from Apr 1 – Aug 15. o In winter habitat from Nov 15 – Mar 15. o 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	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 to 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. <u>Existing Notices and Approved</u>	

Table 2.1
Description of 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.	Plans of Operations under 43 CFR 3809[1]: 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 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	

[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 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					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 may minimize impacts to 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					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 would be applied as appropriate and to the extent allowable by law within PPMAs.	Same as Alternative B.	Apply the BMPs identified in Appendix E (of the NTT report) (included as Appendix I of this 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 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, BMPs would be applied as appropriate and to the extent allowable by law within core GRSG habitat for Locatable Minerals.	MA–MIN-14
Mineral Materials						
Manage mineral materials in GRSG habitat as follows (Map 2.34, Saleable Minerals Materials–Alternative A):	Manage mineral materials in GRSG habitat as follows (Map 2.35, Saleable Minerals Materials–Alternative B):	Manage mineral materials in GRSG habitat as follows (Map 2.36, Saleable Minerals Materials–Alternative C):	Manage mineral materials in GRSG habitat as follows (Map 2.37, Saleable Minerals Materials–Alternative D):	Manage mineral materials in GRSG habitat as follows (Map 2.38, Saleable Minerals Materials–Alternative E):	Acreages for mineral materials under Alternative E2 are reported under E1. The portions of the decision area	MA–MIN-15

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
• 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.	• open to mineral materials development: 668,580 acres • closed to mineral materials development: 3,340,000 acres	• open to mineral materials development: 0 acres • closed to mineral materials development: 4,008,580 acres	• 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	• open to mineral materials development: 3,935,080 acres • closed to mineral materials development: 73,500 acres	specific to Wyoming are included in those acres, though the stipulations, as applicable, are derived from Alternative E2.	
Same as previous decision.	Close PPMAs 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 a PPMA or a PGMA would be closed new to mineral material development. PPMAs beyond 1 mile of an occupied lek that is located within a PPMA would be closed to commercial development of mineral materials. Non-commercial development of mineral materials (e.g., community pits, free-use permits) within PPMAs beyond 1 mile of an occupied lek, if the lek is located within a PPMA, could only occur if the following conditions are met:	SGMAs would be open to mineral materials. Impacts 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.	Core areas would be open to mineral material exploration, sales, and free use permits, except in areas that are closed to leasing or no surface occupancy 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	MA–MIN-16

Table 2.1
Description of 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; • 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 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 PGMAs beyond 1 mile of an occupied lek, if the lek is located within a PGMA, could occur if:	• 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: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o In winter habitat from Nov 15 – Mar 15. o 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	crushing operations would be prohibited in core areas during seasonal restriction times; however, removal of material from existing stockpiles would be allowed.	

Table 2.1
Description of 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; • 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). PPMAs and PGMAs beyond the 1 mile closures would require discussion with the State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors, etc.). The stipulations within PGMAs (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 PPMAs.	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 SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.		
No similar action.	In PPMAs, 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	MA–MIN-17

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					term goal to improve the GRSG habitat.	
Fluid Minerals						
Manage fluid mineral leasing in GRSG habitat as follows (Map 2.39, 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) 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	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.40, 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: 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.	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.41, 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 • 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.	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.42, 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 • 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	Manage fluid mineral leasing in GRSG habitat as follows (Map 2.43, 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: 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	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. 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.	MA–MIN-18

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
• closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 234,500 acres			acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 177,200 acres	• closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 219,600 acres		
Unleased Federal Fluid Mineral Estate						
Unleased Areas within PPMAs: Under current management there are no designated PPMAs. 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 PPMAs: Close PPMAs areas to fluid mineral leasing. Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within PPMAs.	Unleased Areas within PPMAs: 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 PPMAs: Areas outside PPMAs but within 1 mile of an occupied lek, if the lek is located within a PPMA, would be open to leasing fluid minerals, subject to NSO stipulations. PPMAs within 4 miles of an occupied lek, if the lek is located within a PPMA, would be designated as open to oil and gas leasing subject to NSO stipulations (see Appendix K, Stipulations Associated with Land Use Authorizations, for modifications, waivers, and exceptions). PPMAs beyond 4 miles of an occupied lek, if the lek is located within a PPMA, 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	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, Stipulations Associated with Land Use Authorizations, 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	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 2.43, Fluid Minerals Leasing Categories–Alternative E). Work with project proponents to site their projects in locations that minimize impacts to 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	MA–MIN-19

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			• Brood rearing habitat from Apr 15 – Jul 15 • Breeding and nesting habitat from Feb 15 – Jun 15 Where leasing/development is allowed within PPMAs, 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 PPMAs and within 4 miles of an occupied lek, if the lek is located within a PPMA, 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	coordination with the local UDWR biologist): • Winter habitat from Nov 15 – Mar 15. • Nesting and brood-rearing 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	prohibited on or within a six tenths (0.6) mile radius of the perimeter of occupied GRSG leks. Additionally, disruptive activity is restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied GRSG leks from 6 pm to 8 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			stipulations: • the development meets noise restrictions; and • the development meets tall structure restrictions. The RDFs identified in Appendix J, Required Design Features for Fluid Minerals, would be attached as lease notices to all new leases in PPMAs 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. A minimum lease size of 640	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: o On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. o In nesting and brood-rearing areas from Apr 1 – Aug 15. o In winter habitat from Nov 15 – Mar 15. o 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	protect priority 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 near-term goal is to limit noise sources that would be expected to	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			contiguous acres of federal mineral estate would be applied within PPMAs. 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.	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.	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 mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.	
Under current management	No similar action.	No PGMAs are identified.	Unleased Areas within PGMAs:	GRSG habitat outside SGMAs	Unleased Areas within Non-	MA–MIN-20

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
there are no designated PGMAs. Fluid mineral leasing in GRSG mapped occupied habitat will be managed as discussed above.			Any areas, whether within mapped occupied GRSG habitat or not, within 1 mile of an occupied lek, if the lek is located within a PGMA, would be open to leasing fluid minerals, subject to NSO stipulations. PGMAs beyond 1 mile of an occupied lek, if the lek is located within a PGMA, 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 PGMAs, development could occur if it adhered to the following CSU stipulations: • the development meets noise restrictions; and • the development meets tall structure restrictions. PGMAs within and beyond the 1.0 mile NSO area would require collaboration with the	would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>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 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors). The RDFs identified in Appendix J would be attached as lease notices to all new leases in PGMAs 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; • 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 PGMAs (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site			

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PPMAs.			
Leased Federal Fluid Mineral Estate						
No similar action.	In PPMAs, apply the following conservation measures through RMP implementation decisions (e.g., approval of an Application for Permit to Drill (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 existing rights; and 2. Whether the action is in conformance with the approved LUP.	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 conformance with the approved LUP.	In PPMAs, 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 existing rights; and 2. Whether the action is in conformance with the approved LUP.	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 to GRSG through a project design that avoids, minimizes, reduces, rectifies, and/or adequately compensates for direct and indirect impacts to 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 effects to important breeding, nesting, brood-rearing, and wintering areas. For proposed operations in core areas, the 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	MA–MIN-21

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					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: • Whether the conservation measure is "reasonable" (43 CFR 3101.1-2) and consistent with valid existing rights; • Whether the action is in conformance with the approved LUP; and the 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	

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
					documentation of compliance with NEPA.	
No similar action. Measures that reduce or eliminate impacts to GRSG are considered on a case-by-case basis during implementation-level planning.	Do not allow new surface occupancy on federal leases within PPMAs, 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 PPMAs, apply a 4-mile NSO around the lek, and limit permitted disturbances to 1 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.	Same as Alternative B.	Apply the 5 percent disturbance limitation for development within PPMAs. Where GRSG conservation opportunities exist, work in collaboration with operators in PPMAs and PGMAs to minimize habitat loss, fragmentation, and direct and indirect effects to GRSG and habitat. 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 effects to 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	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.	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) 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.	MA–MIN-22

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			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. 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 timing limitations 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 to GRSG from West Nile virus and develop appropriate mitigation measures			

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			and apply RDFs (Appendix L, Required Design Features for Preventing West Nile Virus).			
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.	Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and early brood-rearing season in all PPMAs during this period.	Apply a seasonal restriction on exploratory drilling that 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 as Alternative B.	Allow exploratory drilling within SGMAs, subject to the same seasonal, NSO and CSU stipulations as would be applied to leases within SGMAs.	GRSG nesting/early brood-rearing habitat in core areas: • 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.	MA–MIN-23
No similar action.	Closely examine the applicability of categorical exclusions in PPMAs. 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.	MA–MIN-24
No similar action.	Complete Master Development Plans in lieu of APD-by-APD processing for all but wildcat wells.	Same as Alternative B.	Within PPMAs, operators must submit a site-specific plan of development for roads, wells, pipelines and other infrastructure prior to any	No similar action.	Consider or encourage Master Development Plans for projects involving multiple proposed disturbances within a lease or core area.	MA–MIN-25

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
			development being authorized. The BLM/Forest 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). o When necessary, conduct additional, effective mitigation in 1) PPMAs or – less preferably – 2) PGMAs (dependent upon the area-specific ability to increase GRSG populations). o Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same 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). o When necessary, conduct additional, effective mitigation in PPMAs. o Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same 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). o When necessary, conduct additional, effective mitigation in 1) PPMAs or – less preferably – 2) PGMAs (dependent upon the area-specific ability to increase GRSG populations). o 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.	MA–MIN-26

Table 2.1
Description of 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 to 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 to 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 to GRSG to reduce fragmentation and surface disturbing and disruptive activities.	MA–MIN-27
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.	MA–MIN-28
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, Hagen et al. 2007) that would result in full restoration of the lands to the condition it was found prior to disturbance. Base the	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.	MA–MIN-29

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
	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) mandatory as COAs within PPMAs.	Same as Alternative B.	The RDFs identified in Appendix J 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.	MA–MIN-30
No similar action.	No similar action.	Any oil, gas, geothermal activity will be conducted to maximize avoidance of impacts, based on evolving scientific knowledge of impacts.	No similar action.	No similar action.	No similar action.	MA–MIN-31
Mineral Split-Estate						
Under current management, there are no PPMAs. Decision	Where the federal government owns the mineral estate in	Same as Alternative B.	Same as Alternative B.	Because the surface estate is the key to conservation of	Where the federal government owns the mineral estate, and	MA–MIN-32

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
included in current management plans apply to both federal surface and mineral estate.	PPMAs, and the surface is in non-federal ownership, apply the conservation measures applied on public lands.			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.	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 PPMAs. 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 PPMAs, apply appropriate Fluid Mineral RDFs (see Appendix J) to surface development.	Same as Alternative B.	Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PPMAs, the RDFs identified in Appendix J 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 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 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.	MA–MIN-33

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
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 2.49, Potential ACECs and Zoological Areas–Alternative C): • Three Corners/Browns Park o **Total acres – 72,600** o BLM acres – 50,100 o Forest Service acres – 22,500 • Diamond Mountain o **Total acres – 139,500** o BLM acres – 110,300 o Forest Service acres – 29,200 • Little Mountain/Halfway Hollow o **Total acres – 74,900** o BLM acres – 60,700 o Forest Service acres – 14,200 • Blue Mountain o **Total acres – 18,900** o BLM acres – 18,900 o Forest Service acres – 0 • Emery o **Total acres – 11,500** o BLM acres – 0 o Forest Service acres – 11,500	No similar action.	No similar action.	No similar action.	MA-ACEC-1

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
		• Parker Mountain o **Total acres – 350,500** o BLM acres – 201,800 o Forest Service acres – 148,700 • Southern Mountain Valleys o **Total acres – 171,300** o BLM acres – 105,300 o Forest Service acres – 66,000 • Buckskin Valley o **Total acres – 46,000** o BLM acres – 34,900 o Forest Service acres – 11,100 • Black Mountains o **Total acres – 256,800** o BLM acres – 256,800 o Forest Service acres – 0 • Southern Great Basin o **Total acres – 101,000** o BLM acres – 101,000 o Forest Service acres – 0 • Sheep Creek Mountains o **Total acres – 398,100** o BLM acres – 316,700 o Forest Service acres – 81,400 • Ibapah o **Total acres – 47,000** o BLM acres – 47,000 o Forest Service acres – 0 • Box Elder/Grouse Creek o **Total acres – 364,100** o BLM acres – 364,100				

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
		o Forest Service acres – none in planning area • Rich County o **Total acres – 171,800** o BLM acres – 166,600 o Forest Service acres – 5,200 • Strawberry o **Total acres – 9,800** o BLM acres – 0 o 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: • 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	No similar action.	No similar action.	No similar action.	MA-ACEC-2

Table 2.1
Description of Alternatives A, B, C1, C2, D, E1, and E2

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2	
		locatable mineral development per 43 CFR 3809 regulations. • Prioritize the removal of unneeded infrastructure (including mining or ROW equipment, roads, range developments and fencing).				

2.7 SUMMARY COMPARISON OF ALTERNATIVES

Table 2.2, Comparison of Alternatives by USFWS Identified Threats, summarizes the five alternatives by USFWS-identified threat. This table only includes information on the allowable uses in PPMAs/GRSG habitat in SGMAs/core areas. Allowable uses also vary by alternative in PGMAs. This table is focused on PPMAs/GRSG habitat in SGMAs/core areas because these are the areas where the objective is to maintain or restore habitat. While information in this table may be useful in helping the reader understand some of the most noteworthy differences between the alternatives, there are also many limitations to the table. To understand the complete differences between the alternatives the reader should see the detailed description of the alternatives included **Table 2.1**, Description of Alternatives A, B, C1, C2, D, E1, and E2. For example, coal mining using underground mining methods would be acceptable under all alternatives in GRSG habitat; however, the stipulations that would be applied to new leases vary considerably. The impacts on GRSG and impacts on coal mining would be different under each alternative based on these variations. These important distinctions are not accounted for in this summary table. In addition to omitting important details, this table also does not capture many of the key decisions, including management actions that are intended to protect, conserve, and enhance GRSG habitat. For example, all alternatives include GRSG habitat objectives and disturbance thresholds. These objectives and thresholds are not intended to mitigate any specific threat nor are they specifically tied to any particular resource program; therefore, they are not accounted for in the summary table.

As discussed above under the description of the individual alternatives, there are no GRSG management areas under Alternative A. Under Alternative C, all UDWR-mapped occupied GRSG habitat (UDWR 2012) would be managed as a PPMA. Under Alternative E1, the management decision would only apply to lands in the state-identified SGMAs.

Table 2.3, Summary Comparison of Alternatives by Decision, shows the acres of BLM-administered and National Forest System lands, and in some cases (e. g., all minerals decisions), the acres of BLM-administered and National Forest System lands plus federal minerals that would be open or closed to various land uses. Under all alternatives, restrictions may be placed on lands that are open to certain uses. As with the preceding table, information in this table can be useful in helping the reader understand differences between the alternatives; however, there are limitations. For example, under Alternative E, SGMAs areas beyond 1 mile of a lek would open to fluid mineral leasing subject to minor constraints (CSU/TL). Under Alternative D, all PPMAs that are not within 4 miles of an occupied lek would be open to fluid mineral leasing subject to minor constraints (CSU/TL). Therefore, in many areas, the identified leasing category would be the same under these two alternatives. Despite these similarities, the actual stipulations that would be applied to new leases under these two alternatives are not the same. This table does not account for these distinctions. To understand the effects of the alternatives on GRSG and other resources/resource uses, the reader should see the detailed description of the alternatives included **Table 2.1**.

Table 2.2
Comparison of Alternatives by USFWS Identified Threats

Resource/Resource Use	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Infrastructure – Powerlines					
ROW Designations (aboveground linear)	ROW exclusion	ROW exclusion	Varies by ROW type. ROW exclusion within 4 miles of occupied leks, ROW avoidance outside of 4-mile buffer.	ROW avoidance	ROW exclusion except in corridors
Designated Utility Corridors	Undesignated corridors with no existing ROWs	Undesignated all corridors	Undesignated corridors with no existing ROWs. Designated some corridors to concentrate infrastructure development	No similar decision	New lines are allowed within 0.5-mile either side of a115 kilovolt or larger
Infrastructure –Communication Towers					
ROW Designations (aboveground site type)	ROW exclusion	ROW exclusion	ROW exclusion within 1 mile of lek. ROW avoidance outside of 4-mile buffer.	ROW avoidance	ROW exclusion
Infrastructure – Linear ROWs					
Travel Management (Comprehensive Trails and Travel Management)	Limited to existing or designated routes.	Closed or limited to existing or designated routes.	Limited to existing or designated routes.	Limited to existing routes in winter, brooding, and nesting habitat.	Does not apply to this planning effort since all lands in Wyoming are on National Forest System lands.
Linear ROWs (Surface)	ROW exclusion	ROW exclusion	ROW avoidance	ROW avoidance	ROW exclusion
Infrastructure – Fences					
	Remove, modify, or mark fences in high-risk areas within priority GRSG. Design any new structural range improvements (including fences) to conserve, enhance, or restore	Remove, modify, or mark fences in high-risk areas within priority GRSG. Avoid all new structural range developments.	Remove, modify, or mark fences in high-risk areas within priority GRSG. Design any new structural range improvements (including fences) to conserve, enhance, or restore	Employ the NRCS fence standards. Fences should not be located on or adjacent to leks.	Evaluate and modify fences in core habitat.

Table 2.2
Comparison of Alternatives by USFWS Identified Threats

Resource/Resource Use	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	GRSG habitat.		GRSG habitat.		
Infrastructure – Railroads					
ROW Designations (underground/surface linear)	ROW exclusion	ROW exclusion	ROW avoidance	ROW avoidance	ROW exclusion except in corridors
Energy – Nonrenewable Energy Sources					
Fluid Mineral Leasing Categories	Closed to oil and gas leasing	Closed to oil and gas leasing	NSO within 4 miles of occupied leks. CSU/TL outside of 4-mile lek buffers.	NSO within 1 mile of occupied leks. CSU/TL stipulations beyond.	NSO with 0.6 mile of a lek. CSU/TL in nesting and early brood rearing.
Geophysical Operations	Open to geophysical operations with stipulations.	Closed to geophysical operations.	Open to geophysical operations with stipulations.	Open to geophysical with stipulations.	Open to geophysical with stipulations.
COAs on Existing Leases and Development	All RDFs would apply.	All RDFs would apply.	RDFs would apply, exceptions could be granted.	No similar decision	No similar decision
Areas Unsuitable for Coal Mining	Unsuitable	Unsuitable	Suitable	Suitable	Suitable
Areas Unacceptable for Coal Mining	None	None	None	None	None
Energy – Mining					
Minerals Material Disposal	Closed to disposal	Closed to disposal	Closed to commercial operations, open to non-commercial (i.e., free use)	Open with stipulations (avoid, minimize, mitigate)	Open with stipulations
Nonenergy Solid Leasable Minerals	Closed to leasing	Closed to leasing	Closed to surface mining, open to underground mining	Open with stipulations (avoid, minimize, mitigate)	Open with stipulations
New Locatable Mineral Development	Recommended for withdrawal	Recommended for withdrawal	Open	Open	Open
Existing Locatable Mineral Development	All RDFs would apply.	All RDFs would apply.	RDFs would apply, exceptions could be granted.	No similar decision	No similar decision

Table 2.2
Comparison of Alternatives by USFWS Identified Threats

Resource/Resource Use	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Energy – Renewable Energy Sources					
Wind	ROW exclusion	ROW exclusion	ROW exclusion	ROW avoidance	ROW avoidance
Geothermal	Closed to leasing	Closed to leasing	NSO within 4 miles of occupied leks. CSU/TL in outside of 4-mile lek buffers.	NSO within 1 mile of occupied leks. CSU/TL stipulations beyond.	Open to leasing subject to CSU/TL stipulations.
Fire					
Fuels Treatments including prescribed fire	No treatments in winter habitat. Do not allow prescribed fire in areas with less than 12 inches precipitation. Require use of native seeds.	No treatments in winter habitat. Do not allow prescribed fire in areas with less than 12 inches precipitation. Require use of native seeds. Some specific exceptions are listed for each of these decisions.	Develop a system of fuel breaks to protect larger intact blocks of GRSG habitat. Do not allow prescribed fire unless you have considered other treatment methods and it can be shown that the project would not result in the spread of noxious weeds.	Use prescribed fire only at higher elevations.	Do not allow prescribed fire in areas with less than 12 inches precipitation.
Fire Suppression	Prioritize suppression in GRSG habitat after life and property.	Prioritize suppression in GRSG habitat after life and property.	Proactively protect priority GRSG habitat from fire through strategic wildfire suppression planning.	Create and implement a statewide fire agency agreement(s) that eliminates jurisdictional boundaries and allows for immediate response to fire.	Prioritize suppression in GRSG habitat after firefighter and public safety.
Invasive Plants					
Weed Control	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	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. Prioritize restoring	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	Aggressively respond to new infestations to keep invasive species from spreading.	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

Table 2.2
Comparison of Alternatives by USFWS Identified Threats

Resource/Resource Use	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	2080.	sagebrush steppe invaded by nonnative plants.	2080.		2080. Give priority for implementing specific GRSG habitat restoration projects in annual grasslands.
Pinyon-Juniper Encroachment					
Vegetation Treatment	Prioritize restoration in seasonal habitats.	Prioritize restoration in seasonal habitats. Passive restoration is preferred for restoring these areas over active restoration methods.	Prioritize restoration in seasonal habitats.	Aggressively remove encroaching conifers and other plant species to expand GRSG habitat where possible.	Follow the guidelines in WGFD *Protocols for Treating Sagebrush to Benefit Sage-Grouse*.
Grazing – Livestock					
Livestock Grazing	No changes in AUMs. Manage livestock to meet Standards and Guidelines for Rangeland Health and science based GRSG habitat objectives or the Forest Service equivalent.	C1- Unavailable to livestock grazing. C2- Substantial reduction in livestock grazing.	No changes in AUMs. Manage livestock to meet Standards and Guidelines for Rangeland Health and science based GRSG habitat objectives or the Forest Service equivalent.	No changes in AUMs. Manage livestock to meet Standards and Guidelines for Rangeland Health or the Forest Service equivalent.	No changes in AUMs. Manage livestock to meet Standards and Guidelines for Rangeland Health. Follow practices outlined in Executive Order 2013-03 and *Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat*
Grazing – Wild Horse and Burro					
Wild Horse and Burro Herd Management Areas	Manage within AMLs. Prioritize gathers and development or amendment of herd management plans.	C1- Manage within AMLs. Prioritize gathers and development or amendment of herd management plans. C2- Reduce AMLs by 25 percent.	Manage within AMLs. Prioritize gathers and development or amendment of herd management plans.	Manage within AMLs. Prioritize gathers and development or amendment of herd management plans.	No similar decision.

Table 2.2
Comparison of Alternatives by USFWS Identified Threats

Resource/Resource Use	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Agriculture/Urbanization					
Land Tenure Adjustments	Retain public ownership of GRSG habitat unless exchange allows for additional or more contiguous federal ownership patterns.	Retain public ownership of GRSG habitat.	Retain public ownership of GRSG habitat. Allow exchanges that benefit GRSG.	No similar decision.	Retain public ownership of GRSG habitat unless exchange allows for additional or more contiguous federal ownership patterns.

Table 2.3
Summary Comparison of Alternatives by Decision

Decision		Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Sage-Grouse Habitat						
Preliminary Priority Management Areas (PPMAs)	Federal Surface	0	2,781,700	3,313,800	2,760,300	2,711,200
	Federal Minerals	0	547,060	694,780	523,560	551,300
	Total	**0**	**3,328,760**	**4,008,580**	**3,283,860**	**3,262,500**
Preliminary General Management Areas (PGMAs)	Federal Surface	0	532,100	0	553,500	650,680
	Federal Minerals	0	147,720	0	171,220	155,200
	Total	**0**	**679,820**	**0**	**724,720**	**805,880**
Priority Areas for Conservation (PACs)	Total Occupied Habitat within PACs	3,176,900	3,176,900	3,176,900	3,176,900	3,176,900
	PPMAs within PACs	0	3,082,900	3,176,900	3,099,700	3,176,900
	PGMAs within PACS	0	94,000	0	77,200	0
	PPMAs outside of PAC	0	244,600	830,600	183,200	0
	PGMAs outside of PAC	0	586,000	0	647,400	0
Livestock Grazing						
				Alt C1	**AltC2**	
AUMs Available	BLM-administered Lands	329,521	329,521	0	197,713	329,521	329,521
	National Forest System Lands	265,373	265,373	0	159,224	265-373	265-373
Acres Unavailable for Livestock Grazing		27,459	27,459	3,313,800	27,459	27,459	27,459

Table 2.3
Summary Comparison of Alternatives by Decision

Decision			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Travel Management							
Area Designations	Open		797,000	34,600	0	0	351,700
	Limited to Existing		437,400	1,213,500	1,016,700	1,249,500	888,000
	Limited to Designated		1,217,700	1,217,700	927,000	1,217,700	1,217,700
	Closed		32,200	32,200	555,700	32,200	32,200
Lands and Realty							
Utility Corridors	Designated Corridors to be Retained		177,700	130,200	0	89,400	177,700
	Designated Corridors to be Undesignated		0	47,500	177,700	39,700	0
	Designated Corridors to be Stipulated as Underground Use Only		0	0	0	48,400	0
	New Designated Corridors		0	0	0	31,700	0
Land Tenure Adjustments	Available for FLPMA Section 203 Sale		24,400	5,490	0	5,540	24,400
Avoidance and Exclusions	All New ROWs	No Restrictions	3,219,000	529,600	0	N/A	632,200
		Avoidance	67,200	0	0	N/A	2,654,000
		Excluded	27,600	2,784,200	3,313,800	N/A	27,600
	Above-Ground Linear	No Restrictions	N/A	N/A	N/A	522,600	N/A
		Avoidance	N/A	N/A	N/A	1,368,900	N/A
		Excluded	N/A	N/A	N/A	1,422,300	N/A
	Surface and Underground Linear	No Restrictions	N/A	N/A	N/A	532,000	N/A
		Avoidance	N/A	N/A	N/A	2,754,200	N/A
		Excluded	N/A	N/A	N/A	27,600	N/A
	Site Types	No Restrictions	N/A	N/A	N/A	531,900	N/A
		Avoidance	N/A	N/A	N/A	2,562,000	N/A
		Excluded	N/A	N/A	N/A	219,900	N/A
	Wind Development	No Restrictions	N/A	N/A	N/A	522,500	N/A
		Avoidance	N/A	N/A	N/A	9,400	N/A
		Excluded	N/A	N/A	N/A	2,781,900	N/A

Table 2.3
Summary Comparison of Alternatives by Decision

Decision		Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Mineral Resources						
Fluid Mineral Leasing Categories	Open	1,333,380	246,680	0	0	247,200
	CSU/TL	1,300,400	255,900	0	1,829,980	2,637,580
	NSO	483,500	24,400	0	1,853,100	688,100
	Closed	138,500	3,341,300	3,821,580	138,500	138,500
	No Fluid Minerals Allocation*	187,000	187,000	187,000	187,000	187,000
	Planning Decision not Mapped**	565,800	96,900	0	0	110,200
Closed to Non-Energy Solid Leasable Minerals	Surface Mining	0	0	0	3,164,400	0
	All Leasing	138,500	3,341,300	4,008,580	138,500	138,500
Coal	Unsuitable for Surface Mining	22,900	3,328,760	4,008,580	22,900	22,900
	Unacceptable for Underground Leasing	0	0	0	0	0
Closed Mineral Materials Disposal	Commercial	0	0	0	2,967,500	0
	Commercial and Non-commercial (i.e., free use)	73,500	3,340,000	4,008,580	352,800	73,500
Recommended Locatable Mineral Withdrawals		498,700	3,650,900	4,008,580	498,700	498,700
Special Designations						
New BLM ACECs		0	0	1,834,200	0	0
New Forest Service Zoological Areas		0	0	399,600	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.

*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 know 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 RPMA/EIS, in GRSG habitat, the BLM and Forest Service may be changing leasing decisions and will be mapping leasing decisions in these areas.

2.8 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

2.8.1 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 shows 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.

2.8.2 Make GRSG Habitat Available for Oil Shale and Tar Sands Leasing

This planning initiative is not addressing oil shale and tar sands resources in Utah (see **Section 1.6.3**), and therefore, no alternatives that consider different management approaches to these resources are carried forward 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.

2.8.3 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, Alternative 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).

2.8.4 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."

2.8.5 Use of Other Habitat Maps

During the scoping and alternative development process, two counties participating in this LUPA/EIS as cooperating agencies requested that the BLM use different GRSG habitat maps that they have developed as the baseline for analysis rather than the March 27, 2012 UDWR occupied GRSG map. 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**, Greater Sage-Grouse Habitat Baseline.

- 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 is part of the Utah Department of Natural Resources and 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. Broad habitat maps are necessary 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 or water bodies), 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 2.5**, Habitat Boundary Adjustments).

2.8.6 County Sage-Grouse Management Plan

During the alternatives development process, a comment was submitted by the Garfield County, who is a cooperating agency on this project, requesting that the BLM and Forest Service consider an alternative based on the County's Sage-Grouse Management Plan. Other Counties are in the process of completing GRSG management plans, most of which align with the State of Utah's Conservation Plan for Sage-Grouse in Utah.

County management plans are substantially similar in design to the State of Utah's Conservation plan, which is being considered in this EIS under Alternative E1. The primary difference between the Garfield County Plan and the State of Utah's Plan is the difference in habitat. Reasons for not considering Garfield County's habitat submissions are discussed in **Section 2.5.5**, Use of Other Habitat Maps.

2.8.7 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. This COT consistency evaluation has been included in as **Appendix C**.

2.8.8 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**, Preliminary 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.

2.8.9 USFWS-Listing Alternative

Inadequacy of regulatory mechanisms was identified as one of the listing factors for Greater Sage-Grouse 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 Greater Sage-Grouse. 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.

2.9 PREFERRED ALTERNATIVE

NEPA regulations developed by the CEQ require the BLM to identify a preferred alternative in the draft LUPA/EIS (Section 1502.14(e)). The preferred alternative represents those goals, objectives, and actions determined to be most effective at resolving planning issues and balancing resource use at this stage of the process. Comments submitted by other government agencies, tribal entities, and interested public were given careful consideration when identifying a preferred alternative. While collaboration is critical in developing and evaluating alternatives, the final designation of a preferred alternative remains the responsibility of the lead agency, which is the BLM for this project. Based on the fact the Forest Service will be adopting this EIS to make a decision for National Forest System lands in the planning area, they have also identified a preferred alternative. Both the BLM and Forest Service have identified Alternative D as the preferred alternative in this Draft EIS.

It is important to note that the identification of a preferred alternative does not constitute a final decision and there is no requirement that the preferred alternative identified in the Draft EIS be selected as the agencies' decision in the ROD. Various parts of separate alternatives that are analyzed in this draft LUPA/EIS can be "mixed and matched" to develop a proposed plan. Though Alternative D has been identified as the preferred alternative, aspects of Alternative E, which is based on the State of Utah and Wyoming's GRSG conservation plans, may also meet the purpose and need of this effort and fulfill the BLM and Forest Service's "statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors" (NEPAs 40 Most Asked Questions 4a). As such the proposed plan could include aspects of Alternative D, Alternative E, or other alternatives.

2.10 SUMMARY COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Table 2.4 (Comparison of Alleviated Threats to GRSG in the Utah Sub-Region) provides information on how each alternative would ameliorate specific threats identified by the USFWS in the 2010 listing determination. The table is organized so that the most relevant threats in the Utah Sub-region (Infrastructure development, energy development, fire, invasive species, and juniper encroachment) are discussed at the beginning of the table. Less relevant threats in the Utah Sub-region are discussed later in the table (e.g., agricultural conversion/urbanization). Similar to other summary tables including in this chapter, there are limitations to this table. For example, within the range of alternatives, the BLM and Forest Service are considering many management actions related to vegetation and vegetation treatment. The environmental consequences of these actions are not summarized in this table because, as previously mentioned, the table is focused specifically on the impacts of decisions that directly correspond to USFWS identified threats. Within the listing determination, juniper encroachment is identified as a threat. Therefore, this table only includes information on the environmental consequences of implementation management actions that would reduce juniper encroachment. The impacts of these In addition to including information on how the alternatives would reduce or eliminate impacts on GRSG, the table includes information how each alternative corresponds with the conservation objectives, measures and options included in the COT Report. Additional, detailed information on the consistency of the action alternatives with the COT Report can be found in **Appendix C**.

Table 2.5 (Summary of Environmental Consequences) includes a summary of information presented in **Chapter 4**. Impacts to all resources, except GRSG are presented in this table. A summary of the impacts on GRSG is included in **Table 2.4**, which was discussed above. More detailed information on the effects of the planning decisions on resources and resource values in the Utah Sub-region planning area, including impacts on the science, methodology, and assumptions, refer to individual resource sections included in **Chapter 4**.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Infrastructure - Right-of-way						
	New ROWs could cause additional fragmentation to habitat, habitat loss, and functional loss of the habitat, especially in areas adjacent to above-ground and site-type ROWs.	PPMA would be managed as ROW exclusion. Therefore, habitat fragmentation, direct and indirect habitat loss, habitat degradation, and habitat disturbance from new ROs in PPMA 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. PGMA would be managed as ROW avoidance. ROWs would only be allowed when there are no other alternatives. Fragmentation and degradation could occur in PGMA when new ROWs are constructed.	All GRSG habitat would be managed as ROW exclusion; therefore, the further habitat fragmentation, indirect and direct loss, and habitat degradation would not occur.	Restrictions placed on new ROWs would reduce habitat fragmentation and direct and indirect habitat loss. In PPMA, the impacts on the lek and nesting and brood-rearing habitats would be decreased 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 1 area. PGMA 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 PGMA when new ROWs are constructed.	Implementation of 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. There would be no restriction on development in GRSG habitat outside of SGMAs. Therefore, habitat fragmentation, indirect and direct loss, and habitat degradation would occur.	The core habitat would be managed as ROW exclusion. Exceptions can be made if new ROWs can be co-located with existing disturbance. Concentrating disturbance into already disturbed area would prevent further habitat fragmentation and habitat loss.
Summary	All alternatives meet the conservation objective for infrastructure identified in the COT Report, which is to avoid development within PACs. Alternatives B, C, D, and E2 all close certain areas to new ROWs. The difference between these alternatives is the amount of GRSG habitat that would be closed and the type of ROWs that would be prohibited or restricted. Alternative C, which closes all occupied GRSG habitat to new ROWs, is the most restrictive. Alternative B includes the same restrictions as Alternative					

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	C; however, these restrictions would be applied to a smaller geographic area. Much of the GRSG habitat afforded protection under Alternative C and not under Alternative B has already been impacted to a degree that the long-term persistence of GRSG is likely low. Therefore, increasing the number of acres protected would not appreciably increase the number of GRSG protected. Under Alternative D, ROW decisions in GRSG habitat vary by ROW type; more restrictions would be placed on activities that have greater impacts on GRSG (e.g., above-ground linear ROWs) and in areas where research has shown GRSG to be more sensitive to disturbance (e.g., leks, nesting, and early brood-rearing habitat). In addition, certain types of ROW are excluded within breeding, some nesting, and some early brood-rearing habitat. Under Alternative E1, all GRSG habitat in SGMAs would be managed as ROW avoidance, which may eliminate habitat loss, degradation, and fragmentation in important seasonal habitats. However, because there are no exclusions for GRSG habitat under this alternative there is less assurance of protection for GRSG. Alternatives B and C are consistent with conservation measures for infrastructure identified in the COT Report, which recommends that there should be no new development of infrastructure corridors within PACs. Alternatives D and E1 are partially consistent with the COT Report objective. Under Alternative D, some existing corridors without development would be undesignated but a limited number of new corridors would be designated next to existing transmission lines or disturbed areas. The COT Report also recommends that corridors should not exceed 200 meters (656 feet) in width. Under Alternative D, new corridors would be 3,500 feet wide to allow flexibility in selecting final placement of any new ROWs, though stipulations require that transmission lines be located as close as possible to consolidate disturbance and allow for shared infrastructure. Alternative E limits new linear transmission features in existing corridors, or at a minimum, in concert with existing linear features in GRSG habitat, though there are no limitations on how the width of resulting corridors.					
Infrastructure – Roads						
	Some GRSG habitat is open to cross-country motorized travel. Cross-country travel and new route creation can result in habitat fragmentation, degradation, and loss.	In PPMA, habitat loss and fragmentation would be 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	Same as Alternative B, 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.	All GRSG habitat would be protected from loss and fragmentation due to 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.	Nesting and winter habitat 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.	Alternative E2 includes no similar decision. All federal lands in the Utah Sub-Region planning area located in State of Wyoming are National Forest System lands. OHV area designations only apply to BLM-administered lands. The Forest Service addresses this issue through implementation-level travel management plans.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		functional loss of habitat and habitat degradation from routes in important habitats. PGMA would be designated as per the travel management plan in the current planning document.		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.		
Summary	All alternatives meet the COT Report objective to varying degrees. All action alternatives would limit motorized travel to existing or designated routes in certain areas, which would prevent the proliferation of new routes, though Alternatives A, B and E1 would retain some areas as open to cross country use. The main difference between alternatives is the amount of GRSG habitat that would be changed from an open to a limited category. All Alternatives C and D both leave no open areas in GRSG habitat, though Alternative C would preclude new roads within 4 miles of a lek. Alternatives B, C and D prioritize completion of route designations, which would provide for direct and indirect human disturbance (including noise) on roads to address and avoid impacts on GRSG and their habitat. Alternative E1 directs county transportation plans to consider GRSG.					
Infrastructure - Fences						
	No decisions	The direct loss of GRSG would be reduced by removing, modifying or marking fences in high risk areas within PPMA.	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	Same as 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.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			there would likely be less of impacts on GRSG. In addition, under alternative C, there would be no new construction of range improvements including fences, therefore, less new infrastructure development would occur.			
Summary	All would meet the intent of the COT Report objectives, which is to minimize impacts from fences on GRSG. Alternatives B, C, and D consider more of conservation options identified in the COT Report. For example, marking fences would decrease bird/fence collisions, and removal of unneeded fences would decrease collisions and opportunities for avian predation. Alternatives E1 and E2 only include marking existing fences.					
Energy – Unleased and Leased Fluid Minerals						
	Various stipulations apply, with protective buffers around leks ranging from 0.25-mile to 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 activities or disruptive activities during certain dates in seasonal habitats. Continued impacts on GRSG are anticipated such as habitat loss,	PPMA would be closed to new leasing, eliminating habitat loss, degradation, and fragmentation. Development of existing leases in PPMA 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 for this alternative would be 1,224 acres less than what is	Same as Alternative B, except a larger geographical area would be closed to leasing. There would be 3,967 acres less disturbance under Alternative C than Alternative A.	With the application of a 4-mile NSO around leks in PPMA and limitations on disturbance and seasonal stipulations in the remainder of PPMA, impacts from new 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. Under Alternative D, there would be 158 acres less	SGMAs would include NSO within 1 mile of a lek and CSU/TL stipulations beyond that may 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	With an NSO within 0.6-mile of a lek and a CSU/TL in nesting and early brood-rearing habitat, impacts on the lek and seasonal habitat (such as direct habitat loss, fragmentation, and disruption to GRSG) would continue.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	fragmentation, disturbance to the birds and habitat degradation due to the variability and uncertainty of the application of restrictions.	predicted under Alternative A. 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.		disturbance than Alternative A.	additional habitat. Existing leases are not affected by the implementation of this alternative. 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.	
Summary	To varying degrees all action alternatives meet the COT Report objective for energy, which is that energy development should be designed to ensure that it will not impinge on stable or increasing GRSG population trends. Alternatives B and C close areas to new leasing. The difference between these alternatives is the amount of GRSG habitat that would be closed. Alternative C, which closes all occupied GRSG habitat to new leases, is the most restrictive. Alternative B includes the same restrictions as Alternative C; however, these restrictions would be applied to a smaller geographic area. GRSG habitat afforded protection under Alternative C and not under Alternative B has largely already been impacted to a degree that the long-term persistence of GRSG is likely low, therefore, increasing the number of acres protected would not appreciably increase the number of GRSG protected. Under Alternative D, fluid mineral leases within 4 miles of a lek would be managed with NSO stipulations. Other restrictions (CSU and TL) would restrict the amount, location, and timing of development. These restrictions would reduce habitat loss, degradation, and fragmentation in other seasonal habitats (e.g., winter habitat). Under Alternative E1, all GRSG habitat in SGMAs would be managed with a 1 mile NSO around leks and a variety of CSU stipulations and timing limitations. Using a 1-mile buffer and CSU/TL stipulations on SGMAs would reduce habitat loss, degradation, and fragmentation in important seasonal habitats. However, because of the 1-mile visual buffer around leks and the allowance for waiving the stipulations if development cannot occur elsewhere, there is less assurance of protection for the long-term maintenance of leks and nesting habitat. However, in such circumstances, mitigation could result in additional habitat in other areas, which could result in stable-to-increasing populations, depending on habitat type, location, and quality. Under Alternatives B and C and, to a lesser extent, Alternative D, RDFs would be attached to new and existing leases. Applying RDFs to existing leases may eliminate habitat loss, degradation, and fragmentation. However, the effectiveness of these measures would be limited in areas where there is already extensive development. There would be no restrictions on existing leases under Alternative E1.					

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Mining – Solid Minerals, Non-Energy Leasables, Locatables and Mineral Materials						
	Continued impacts 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.	PPMA would be determined unsuitable for surface coal mining, withdrawn from locatable mineral entry, closed to mineral material disposal, and closed to nonenergy mineral leasing. Therefore, impacts from new minerals development in PPMA would be eliminated. Development of existing leases would result in habitat loss and fragmentation. Application of surface disturbance thresholds and RDFs would reduce impacts on GRSG.	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. PPMA would be closed to commercial mineral material disposal but open to non-commercial (i.e., free use) beyond 1 mile of leks. PPMA 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 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	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 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.	Impacts would be similar to those described in Alternative A. 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 protection. In general, mining activities could continue and could cause habitat loss, degradation, and fragmentation.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				fragmentation. Application of surface disturbance thresholds and RDFs would reduce impacts on GRSG.		
Summary	To varying degrees all action alternative meet the COT Report objective, which is to maintain table to increasing GRSG population trends and no net loss of GRSG habitat in in areas affected by mining. Alternatives B and C would be unsuitable for coal and closed or withdrawal to other minerals. Therefore, future impacts on GRSG would not occur, which clearly meet the objectives in the COT Report. Under Alternative D, surface use restrictions would be placed on development to protect breeding, some nesting, and some early brood-rearing habitat. Additional stipulations and design features would restrict the type, amount, location, and timing of development. These restrictions would reduce habitat loss, degradation and fragmentation, and would provide for stable to increasing GRSG populations, as noted in the COT objective. While no requirement is included to achieve "no net loss" standard, mitigation requirements are required to be addressed during project permitting. Under Alternative E1, all GRSG habitat in SGMAs would be subject to stipulations that would reduce habitat loss, degradation, and fragmentation in important seasonal habitats. However, because of the 1-mile visual buffer around leks and the allowance for waiving the stipulations ("…if avoidance is not possible"), there is less assurance of protection for the long-term maintenance of leks and nesting habitat. As with Alternative D, while stipulation could reduce habitat loss, degradation and fragmentation, and may provide for maintaining GRSG populations, as noted in the COT objective. While no requirement is included to achieve "no net loss" standard, given the use of the "mitigation bank" and the minimize and mitigate requirements, mitigation of impacted habitat (e.g., 4:1 ratio) would move toward meeting the "no net loss" objective. Alternatives B, C, and D would require RDFs along with other conservation measures to reduce habitat loss, fragmentation, degradation, and disturbance to the extent possible on valid rights. There are no restrictions on existing leases proposed under Alternative E.					
Renewable Energy Sources – Wind Energy						
	Most GRSG habitat is open to wind development. In areas with high development potential, continued impacts on GRSG, such as habitat loss and fragmentation, are anticipated. There is no surface disturbance limitation	Wind development would be excluded in PPMA under this alternative. Therefore, impacts such as habitat loss, degradation, and disturbance to GRSG would be eliminated. There are no restrictions for PGMA under this alternative; however, there is also not high wind	Same as Alternative B; however, under this alternative, all GRSG habitat would be excluded from wind development. Therefore, there would be more habitat protected.	Impacts would be similar to Alternative B because all PPMA would be excluded from wind development; however, there would be additional protection because the area outside of PPMA but within 4 miles of a lek in PPMA would be managed as an avoidance area in order to reduce the	GRSG habitat within SGMAs would be an avoidance area. 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	Wind development is excluded in core habitat. Therefore impacts such as habitat loss, degradation, and disturbance to GRSG would be eliminated.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	recommendation included in this alternative	energy potential in PGMA.		indirect impacts from development. Direct habitat loss would be lessened in PGMA with the restriction to wind development within 1 mile of a lek.	and disturbance to GSRG during important times of the year.	
Summary	To varying degrees all alternatives meet the conservation objective for energy, which is to ensure that development will not impinge upon stable or increasing population trends. Alternatives B, C, D, and E2 provide protection from wind development to GSRG and their habitat since all four stipulate that wind development is excluded from PPMA. Alternative D also places stipulations on areas outside of PPMA but within 4 miles of a lek. Alternatives E1 avoids wind development and stipulations on development could reduce habitat loss, fragmentation, degradation, and disturbance.					
Fire, Fuels Treatments including Prescribed Fire						
	Varied treatment options – no standard.	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 be decreased because of the restrictions on fuels management treatments and disruption of GRSG would be decreased with the treatments occurring outside of important	Similar to Alternative B, except for all occupied GRSG habitat is PPMA. In addition, Alternative C relies more on passive restoration efforts to indirectly reduce the risk of wildfires. Restores anthropogenic disturbance such as non-native 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 through restricting when treatments could occur in these areas.	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. Change sin prescribed fire management would reduce the risk of fire escape or wild fire in GRSG habitat. The implementation of a	Habitat loss would be reduced when prescribed fire actions are limited and GRSG habitat is prioritized for suppression.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		seasons. Wildfire suppression efforts would be prioritized GRSG very high. Following best practices will also limit negative impacts from firefighting activities. Requiring native seed and designing fuels treatments for long-term success would reduce the long-term impact of the short-term habitat loss and not have a negative long-term population impact.		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.	statewide fire agency agreements 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.	
Summary	All action alternatives will decrease habitat loss from prescribed fire and wildfire by limiting prescribed fire and prioritizing wildfire suppression efforts in the state, which meet the COT Report objectives. Alternatives B, C, and D would also try to lessen the future probability of large fires in GRSG by putting in fire breaks which would further benefit GRSG. Alternatives B, C, D, and E1 all move to lessen habitat loss from treatments within winter habitat to varying degrees, which is consistent with objective for sagebrush removal. Alternatives B, C, and D also have a focus on native or desirable plants to be reseeded within PPMA that also meets the objectives of the COT Report (USFWS 2013a). Under Alternative E, native seeds are not given priority over non-native seeds.					
Invasive Species						
	Various control measures – no standard. Emergency Stabilization and Rehabilitation plans can help ameliorate the threat of invasive annuals and strategic wildland fire suppression can provide long-term protection to	Impacts on GRSG habitats would be minimized by controlling, suppressing, and eradicating noxious and invasive weeds under this alternative. Since this alternative would limit anthropogenic disturbance to 3 percent, this would	The same as Alternative B, except this alternative would also prioritize restoring sagebrush steppe invaded by nonnative plants, which would further reduce habitat degradation and loss from invasive species. In addition,	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 infestations before they become larger problems, and contain	Giving priority for implementing specific GRSG habitat restoration projects in annual grasslands would help degraded habitat be reclaimed to support sustainable GRSG over the long-term.

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	intact native vegetation, thereby preventing the 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).	likely limit the invasive annuals introduced. This alternative would also require native seed for restoration efforts and the use of BMPs for fire and fuels treatments. Use of non-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.	because Alternative C relies more on passive restoration efforts the rate and scale of minimizing invasive species would be decreased compared to other action alternatives.		known infestations of weeds in or near sagebrush habitats.	
Summary	All action alternatives would meet the COT Report objectives by implementing actions to maintain and restore healthy sagebrush communities. Alternatives B and C would allow less surface disturbance, which would reduce opportunities for incursion of non-native species. Alternatives C and E1 would prioritize restoration of areas with invasive weed infestations, which would further reduce habitat degradation. Alternative E2 would also prioritize restoration in annual grasslands which would decrease some habitat degradation issues.					
Pinyon-Juniper Encroachment						
	Varying degrees of 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	Prioritize restoration in seasonal habitats, which would reduce degradation, habitat loss, and fragmentation for GRSG.	Alternative C prioritizes restoration in seasonal habitats as in Alternative B; however, 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	Same as Alternative B, plus specifically directs to reduce conifer encroachment in PPMA. This 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.	Follow the guidelines in WGFD *Protocols for Treating Sagebrush to Benefit Sage-Grouse*, which would benefit GRSG.

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Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	varying benefits and impacts on GRSG. There is no set standard for treatment for GRSG habitat.		time. In addition, passive restoration is preferred for restoring these areas over active restoration methods.			
Summary	All action alternatives except Alternative C meet the COT Report objective, which is to remove pinyon-juniper from areas of sagebrush that are most likely to support GRSG at a rate that is at least equal to rate of pinyon-juniper encroachment. Alternatives D and E1 specifically address reducing conifer encroachment, raising the issue to a higher prominence than the other alternatives; Alternative E1 also sets specific acreage objectives to expand GRSG habitat. Under Alternative C, passive restoration is preferred to active restoration methods. This could result in pinyon-juniper encroachment and continued loss and degradation of GRSG habitat.					
Livestock Grazing, Structure Range Improvements and Wild Horses						
Livestock grazing	Impacts on GRSG vary on each allotment sine 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	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	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	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; 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. Any new structural range improvements would be designed to conserve, enhance, or restore GRSG	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 brood-rearing habitat. The use of special grazing systems and utilization level monitoring in nesting and brood-rearing habitat	Follow practices outlined in *Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat* would reduce habitat degradation. There is no decision regarding wild horses for these areas.

Table 2.4
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	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	managed within AMLs, which could still affect site-specific areas of GSRG habitat in Utah.	grazing management system. Water development would need to be neutral or beneficial to GRSG. Wild horses would be managed within AMLs, which could still affect site-specific areas of GSRG habitat in Utah.	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 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 improving habitat by leaving more residual vegetation for cover.	habitat through an improved grazing management system relative to GRSG objectives. New water developments within PPMA would be limited and need have a neutral effect or be beneficial to PPMA (such as by shifting livestock use away from critical areas). New developments must be designed to maintain continuity of predevelopment riparian or wet meadow vegetation and hydrology so there is no degradation of GRSG brood-rearing habitat. Wild horses would be managed similarly to Alternative B; therefore, the impacts would also be similar.	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 spreading if they were to occur with structural range improvements. Wild horses would be managed the same as Alternative A.	
Summary	All action alternatives would manage grazing to better meet the ecological conditions that maintain or restore healthy sagebrush shrub and native perennial grass and forb communities and conserve the essential habitat components for GRSG (e.g. shrub cover, nesting cover), which is the COT Report objective. All action alternatives emphasize GRSG in decision making for livestock grazing; however, Alternative C1 would remove grazing altogether, which would have impacts that could both improve and degrade habitat for GRSG.					

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	Impacts from wild horses would be similar across all alternatives. There would be a focus on GRSG habitat and priority for gathers in GRSG habitat for Alternatives B, C1, C2, and D which would decrease some of the localized impacts that can happen if the herds are over AMLs.					
Recreation/Travel Management						
	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 PPMA. 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 PPMA that have neutral or beneficial effects; therefore, long-term degradation, disruption or loss of GRSG habitat should not occur.	Impacts would be similar to those described under B except in PPMA camping and other non-motorized 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 due to route proliferation 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 to 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 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.	Alternative E2 includes no travel management decisions. All federal lands in the Utah Sub-Region planning area located in State of Wyoming are National Forest System lands. OHV area designations only apply to BLM-administered lands. The Forest Service addresses this issue through implementation-level travel management plans. Special use authorizations would be allowed so long as impacts on GRSG can be mitigated. Dispersed and developed recreation would result in similar impacts on Alternative A.
Summary	All action alternatives would partially meet the COT Report objective, which is that areas subject to recreation activities should maintain healthy native sagebrush communities based on local ecological conditions and with consideration of drought conditions, and managed direct and indirect human disturbance (including noise) to avoid interruption of normal GRSG behavior. Alternatives B and E1 do not allow cross-country travel in most GRSG habitat, while Alternatives C and D preclude such use in all GRSG habitat, which would prevent proliferation of new user-created routes.					

Table 2.4
Comparison of Alleviated Threats to GRSG in the Utah Sub-Region

	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Agriculture/Urbanization						
Land Tenure Adjustments	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 makes it difficult to manage for specific purposes including GRSG protection.	Impacts would be similar to those described under Alternative A, and GRSG PPMA would be retained in public ownership unless habitat in areas of mixed ownership could be consolidated with areas of PPMA with more contiguous federal ownership patterns so the 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 species and its habitat.	Impacts would be the same as Alternative B, all GRSG habitat would be retained in federal ownership, ensuring the application of the Alternative C management prescriptions. However, there would be no option to consolidate ownership into areas where consistent management could benefit GRSG.	Same as Alternative B, though 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 would be similar to those described under Alternative B.
Summary	The conservation objective identified in the COT Report is to limit urban and exurban development in GRSG habitats and maintains intact native sagebrush plant communities. The only mechanism the BLM and Forest Service have to ensure this objective is it they administer the lands. Alternatives A and E1 provide no direction on maintaining GRSG habitat in federal ownership. Under these alternatives, GRSG habitat could be removed from the certainty of application of protecting management associated with federal LUPs. Alternatives B, C, D, and E2 would retain PPMA in federal ownership, ensuring such protection. However, Alternatives B, D, and E2 would allow for instances to disposing GRSG habitat where federal ownership patterns in PPMA would be consolidated. This would limit the amount of conversion of sagebrush ecosystems to urban, exurban and agriculture.					

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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.	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.	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.	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.
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 have the greatest 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. 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	Impacts would be the same as under Alternative B.	Alternative E would result in the fewest restrictions of the action alternatives and protections for soil resources would be less stringent and widespread.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		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 emphasizes passive restoration over active restoration. This could increase potential for 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	Impacts would be similar to those under Alternative B.	Impacts would be similar to those under Alternative B.	Impacts would be similar to those under Alternative B.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	increase or maintain the level of stream miles meeting state 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 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 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,	The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems. 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 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	The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems. 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 PPMAs and PGMAs 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 subregional 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.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
making plants more susceptible to disease, drought, or insect attack.	or seed introductions.			
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 would provide the greatest quantity of habitat protection in PPMAs 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-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.	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 protection in PPMAs from human disturbance activities by imposing a 3 percent disturbance cap in PPMAs. Under Alternative C, however, disturbance would be co-located 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	A 5 percent disturbance cap would be imposed in PPMAs, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to special status species habitat than under Alternatives B or C. 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 PGMAs overlap with Utah prairie dog complexes within the Bald Hills and Panguitch population areas, and fewer habitat protections would be provided in these PGMAs, making this species' habitat more susceptible to loss and/or fragmentation. Alternative D would provide the most comprehensive habitat restoration and vegetation management policies of all the	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. Applying NSO stipulations on 483,500 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.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		adjacent private land in checkerboard ownership areas. Special status species in these areas would be affected by resultant habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development.	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. 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.	
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 PPMAs 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-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	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 PPMAs from human disturbance activities by imposing a 3 percent disturbance cap in PPMAs. Under Alternative C, however, disturbance would be co-located where possible. Concentrating smaller areas of impacts into larger, less diffuse clusters would increase	A 5 percent disturbance cap would be imposed in PPMAs, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to habitat than under Alternatives B or C. Applying NSO stipulations on 1.8 million acres could push fluid mineral development on to adjacent non-GRSG habitat, thereby protecting fish and wildlife species in GRSG habitat, but harming those that could be impacted by development outside of GRSG	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. 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 development outside of GRSG

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	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.	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 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	habitat. Alternative D 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 non-desirable 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 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.	habitat.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		would be less of an impact to 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 PPMAs would receive the most protection under Alternative C, allowing populations to potentially increase. While land use restrictions 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	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,	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	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

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions for wild horse and burros).	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 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 PPMAs. 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.	improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions 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.	category for each HMA. There are no wild horse and burros on National Forest System lands in Wyoming that are included in the Utah Sub-region planning area.
Cultural Resources				
The BLM and Forest Service would continue to follow 36 CFR 800, Section 106 and the appropriate Utah State Protocols when addressing federal undertakings; therefore, adverse effects on cultural resources would be	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	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	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

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
appropriately mitigated. Alternative A would result in a continuation of current 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.	actions that cause disturbance or destruction of cultural resources and their 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.		and their settings.	result in fewer restrictions on Native American cultural uses than under the other action alternatives.
Visual Resources				
There would continue to be 102,500 acres of ROW exclusion and 177,700 acres of designated utility 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	The BLM and Forest Service would manage 2,784,200 acres of occupied habitat as ROW exclusion and would retain 130,200 acres of designated corridors. New utility infrastructure development would be allowed within a 529,600 acre area with no ROW exclusion or avoidance designation, within	Alternative C would result in the fewest alterations to visual resources when compared to Alternative A. All designated utility corridors in PPMAs would be undesignated and all areas within PPMAs (3,313,800 acres) would be ROW exclusion. BLM would manage 87 percent (3,821,580	The BLM and Forest Service would manage ROW development based on the type of development. Refer to **Table 2.3**, Summary Comparison of Alternatives by Decision, for a comparison of agency management of ROW development by type. In particular, above-ground linear infrastructure	Impacts on visual resources would be similar to Alternative A, but would include additional management actions to avoid or minimize new human modifications. Agency management would maintain 177,700 acres of designated corridors and manage 27,600 acres as ROW exclusion. However, the

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
and associated ground disturbance. Fluid mineral development and surface mining would also impact visual quality through surface modifications and mining equipment.	designated corridors, or by co-locating with existing equipment. 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.	acres) of PPMAs 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 PPMAs would result in no impact on visual resources.	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.	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.
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	Long-term frequency and intensity of wildland fire, as measured by fire regime condition class (FRCC), would 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 PPMAs would focus on fire suppression and limitations on fuels treatments, resulting in higher level of protection from wildland fire, but	Impacts from fire management would be similar to those described under Alternative B. However, restricting fuels treatments on all occupied habitat 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	Additional fuels treatments and other habitat treatments would be permitted with an emphasis on maintaining, protecting, and expanding sagebrush ecosystems in PPMAs 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	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 result in the highest cost of fire suppression of any alternative. This alternative would also increase risks to firefighters by committing more resources to suppression efforts. Impacts from GRSG management would be similar to those described under Alternative B, except that this

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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 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.	reduced wildland fire and fuels management options. Managing PPMAs so that discrete anthropogenic disturbances cover less than 3 percent of the total PPMAs regardless of ownership would decrease the chance of human-caused ignition in PPMAs. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-cause ignitions. In addition, managing or restoring PPMAs 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 PPMAs, 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 PPMAs (e.g., closure to nonenergy mineral leases, finding PPMAs unsuitable to surface coal development, recommended for	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 PPMAs so that discrete anthropogenic disturbances cover less than 3 percent of the total PPMAs regardless of ownership would decrease the chance of human-caused ignition in PPMAs. 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	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 PPMAs. Land use restrictions would 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	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 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

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	mineral withdrawal, and closure to mineral material sales and new fluid mineral leases) would reduce opportunities for human-caused ignitions. Limiting the types of range improvements allowed in PPMAs would decrease opportunities for human-caused ignitions during construction or maintenance. Limiting motorized travel in PPMAs 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 PPMAs on BLM-administered lands.	vehicle-caused ignition in this alternative would be further decreased due to the closure of all occupied habitat to cross-county motorized travel.	planning in the Sheeprocks, Bald Hills, Box Elder, Rich, Ibapah, and Hamlin Valley areas would reduce the risk of human-caused ignition in these areas.	ignitions in these areas.
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 PPMAs as under Alternative C, and impacts would be the same in these areas. However, because fewer acres would be managed as PPMAs under Alternative B, there is less potential for wilderness characteristics to be maintained on all 86,100 acres. Where lands with wilderness characteristics overlap PGMAs,	Overall, management under Alternative C would have the greatest potential to maintain lands with characteristics. PPMAs (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	The majority of lands with wilderness characteristics fall within PPMAs. 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	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

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	restrictions on surface-disturbing activities could be applied to permits at the project phase to protect GRSG and its habitat; however, lands with wilderness characteristics could be at risk if surface-disturbing activities are not precluded.	feeling of solitude. Precluding these types of activities would help protect wilderness characteristics on 86,100 acres of lands with wilderness characteristics. New disturbances would only result from vegetation or fuels treatments or wildland fire.	characteristics.	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. As such, management would be at least as protective of lands with wilderness characteristics as Alternative A.
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 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	Acres open to grazing and permitted AUMs would not be directly changed by management actions. PPMAs 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 increased costs for permittees. Consideration of GRSG habitat objectives and management would be would be required in grazing management in PPMAs and	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. Closures and restrictions would impact permittees' current seasonal rotations or other management strategies that utilize both federal and private lands. The elimination of permitted grazing in PPMAs 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	Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres open to 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 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	Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres open to 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 increased flexibility in management actions under this alternative, permittees would have more

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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 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.	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 PPMAs, therefore there is potential for further degradation of lands outside of PPMAs that are not meeting land health standards or desired conditions. A 3 percent disturbance cap in PPMAs 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.	details of the economic impacts are discussed in Section 4.24.23, Social and Economic Conditions. 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 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.	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. PPMAs 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 PPMAs 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 restrictions and stipulations on energy and mineral development would be applied for seasonal habitat requirements as well as areas adjacent to leks in PPMAs, PGMAs, and opportunity habitat. As a result, disturbance to livestock grazing could be reduced in these areas. Motorized travel in PPMAs would	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.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	Classifying PPMAs as ROW exclusion would eliminate conflicts from future ROW development. PPMAs 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 PPMAs. As a result, indirect disturbance of livestock from mineral development would be minimized in PPMAs.		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 PPMAs and in those population areas prioritized for travel management planning.	
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 PPMAs that have a neutral or beneficial effect on PPMAs. 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 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.	Alternative C contains the most restrictions on recreational activities. For example, Alternative C would seasonally prohibit camping and other non-motorized recreation within 4 miles of active leks. This would result in temporary reductions in recreational opportunities and decrease the area 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	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 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	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.

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Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		generally reduce the potential for conflict with recreational activities and settings.	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 PPMAs. This would reduce cross-country access in those portions of PPMAs 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 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.	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 PPMAs, new road construction within 4 miles of active leks would be prohibited. These actions would result in site-specific losses of opportunity for motorized travel and future route construction and improved access.	Areas in PPMAs that currently 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 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.
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	Managing PPMAs as ROW exclusion would prevent the BLM and Forest Service from accommodating new ROW development in those areas. With a continuing demand for new	Neither the BLM nor Forest Service would authorize new ROW development in occupied habitat. Therefore, Alternative C would further reduce opportunities for	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	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

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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 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.	ROWs in the planning area, including major inter- and intra-state electrical transmission and gas pipeline ROW developments would be diverted to adjacent non-federal 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-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 co-located entirely within the footprint of an existing ROW. BLM and Forest Service would require co-location in PGMAs 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	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 from meeting those needs. Impacts from mineral development would be the same as Alternative B. with the exception that all PPMAs (4,008,580 acres) would be recommended for withdrawal from 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 PPMAs. Limitations on new road construction would limit the BLM's and Forest Service's ability to authorize new road ROW applications in PPMAs.	authorize above-ground linear ROWs, such as electrical transmission lines, on 51 percent of PPMAs. On the remaining 49 percent of PPMAs, 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 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 PPMAs 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.	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 non-federal 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 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.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	the demand for new infrastructure development, including any 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 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	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 across the State of Utah would be unavailable for development. Under Alternative B, an additional 22,900 acres considered to have	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 in the amount of developable windy lands across the State of Utah would be unavailable for development.	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 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	Under Alternative B, 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. No additional acres of high or moderate potential would be closed

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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 and, as a result, any restrictions (or lack thereof) would likely have a minimal impact on geothermal energy development.	"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 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	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.	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.	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.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	operators moving to nearby private or state minerals that are open to leasing.			
Minerals				
Fluid Minerals				
Under Alternative A, 3,219,000 acres (97 percent) of BLM-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 and gas leasing. Acres closed in this category would have the greatest impact on	Because all PPMAs would be closed to fluid mineral leasing under Alternative B, managing areas as ROW exclusion in PPMAs would have no impact on fluid minerals. All federal mineral estate within PPMAs (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	Because the entire decision area would be closed to fluid mineral leasing under 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 Alternative B to	All BLM-administered and National Forest System surfaces within PPMAs not 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 PPMAs 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.	All BLM-administered and National Forest System surface within GRSG habitat in SGMAs/core areas not already 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

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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 PPMAs 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.	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 area under Alternative D, the magnitude of the impacts would increase. These impacts would be mitigated in PGMAs where off-site mitigation could allow operators to waive the applicable stipulations.	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.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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 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.	Under Alternative B, 3,341,300 acres or 83 percent of the federal mineral estate decision area (including all federal mineral estate in PPMAs) would be 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 PPMAs 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 technology or less efficient development than would otherwise have been used.	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 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.	Like Alternative A, under Alternative D, 138,500 acres (3 percent) of federal mineral estate in the decision area would be closed to nonenergy leasable mineral prospecting and leasing. Another 2,905,100 acres (73 percent) of federal mineral estate within PPMAs and within 1 mile of leks in PGMAs 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.	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 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.

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Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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 require operators to use more costly development methods than they otherwise might have used.	Under Alternative B, 3,328,800 acres (83 percent of the decision area), including all federal mineral estate in PPMAs, 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. Underground coal mining would be allowed to occur in all PPMA; however, restrictions on surface disturbing appurtenant facilities could deter new leasing.	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 PPMA; 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 PPMAs 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 underground mining in PPMAs 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	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 PPMA. Some restrictions would be placed on development of appurtenant facilities to protect GRSG.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
			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 PPMA. Some restrictions would be placed on development of appurtenant facilities to protect GRSG.	
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	Under Alternative B, 287,600 acres (79 percent) of federal mineral estate with high potential in the decision area (including all PPMAs) 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 mandatory for existing operations within PPMAs whenever those operations are modified. These BMPs would increase the cost of	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,	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, 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 PPMAs and PGMAs. To the extent practicable, surface disturbance could be limited to under the 5 percent disturbance limit, and enhancements of PPMAs through on-site and/or off-site mitigation could be requested.	Like Alternative A, 498,100 acres (12 percent) of federal mineral estate would remain withdrawn from location under the Mining Law of 1872, 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

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
resources by decreasing the availability of mineral resources. In addition, validity exams must be completed on all existing claims in 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.	locatable mineral development.	additional BMPs would be mandatory for existing operations within PPMAs whenever these operations are modified. These BMPs would increase the cost of locatable mineral development.	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.	that locatable mineral development subject to such limits and mitigation measures would no longer be practicable.
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 30,600 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 demand for road maintenance and other needs. If demand for mineral materials could not be met by pits operated on federal lands, pits	Approximately 3,340,000 acres of federal mineral estate in PPMAs (83 percent of the federal mineral estate decision area) would be closed to mineral material disposal. This includes 748,200 acres with mineral material occurrence (40 percent of federal mineral estate 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 24 times more acres of federal mineral estate with mineral material occurrence would	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 of the 1,305,800 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 acres of federal mineral estate with mineral material occurrence would be closed under Alternative C, the magnitude of these impacts would	The BLM and Forest Service would prohibit mineral material disposal within 1 mile of leks and would close all PPMAs 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 non-commercial mineral material disposal. This includes 650,100 acres with mineral material occurrence (35 percent of federal mineral estate with mineral material occurrence in	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 1,275,200 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

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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.	be closed under Alternative B, the magnitude of these impacts would increase. In PPMAs, 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.	increase. Any mineral material development within occupied habitat would occur on private or state minerals. Mineral material pits no longer in use in PPMAs would be restored in the same fashion as that described under Alternative B; however, because all of the decision area would be designated as PPMAs under Alternative C, this management action would apply to more acres.	the decision area). Non-commercial 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 PPMAs (9 percent of the decision area) would be closed to both commercial and non-commercial mineral material disposal, 96,000 acres of which have mineral material occurrence (5 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	than 5 percent of GRSG 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.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
			closed to mineral materials disposal under this alternative, the magnitude of those impacts would increase.	
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 7 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 PPMAs, restrictions would be in place for all existing ACECs.	Surface-disturbing activities in ACECs would be allowed with stipulations, design features, 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.
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	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.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
protect GRSG could enhance naturalness, or, at a minimum, be complementary to management in WSAs. However, this would not vary greatly between the alternatives.				
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 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	There would be restrictions on surface-disturbing activities in PPMAs and PGMAs to protect GRSG. Restrictions would preclude nearly all new surface-disturbing activities. Implementing such restrictions would be complimentary to the protection of national historic trails.	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 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.	Impacts would be the same as described under Alternative D.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
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 conducted in the decision area.				
Social and Economic Conditions				
Current employment and earnings trends in the primary study area would not be affected. Lowest non-market 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 0.3 percent of the current employment and earnings would be reduced by an estimated 0.4 percent of current earnings when compared to Alternative A. Impacts on non-market 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 0.5 (C2) to 0.7 (C1) percent of the current employment and earnings would be reduced by an estimated 0.8 (C2) to 0.9 (C1) percent of current earnings when compared to Alternative A. Adverse effect on non-market values associated with livestock grazing when compared to Alternatives A, B, D and E; positive effect on non-market values associated with the GRSG. Tax revenues in the primary study area would be lower than under alternatives A, B, D or E. Potential adverse impact on capacity of some communities to attract and retain population.	Employment in the primary study area would be reduced by an estimated less than 0.1 percent of the current employment and earnings would be reduced by an estimated 0.1 percent of current earnings when compared to Alternative A. Impacts on non-market values associated with GRSG between Alternatives A and B. 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. Impacts on non-market values associated with GRSG between A and 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.

Table 2.5
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
		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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